APPENDIX M
ZONE A COMBUSTION EVALUATION REPORT
PASCO LANDFILL NPL SITE

Prepared by

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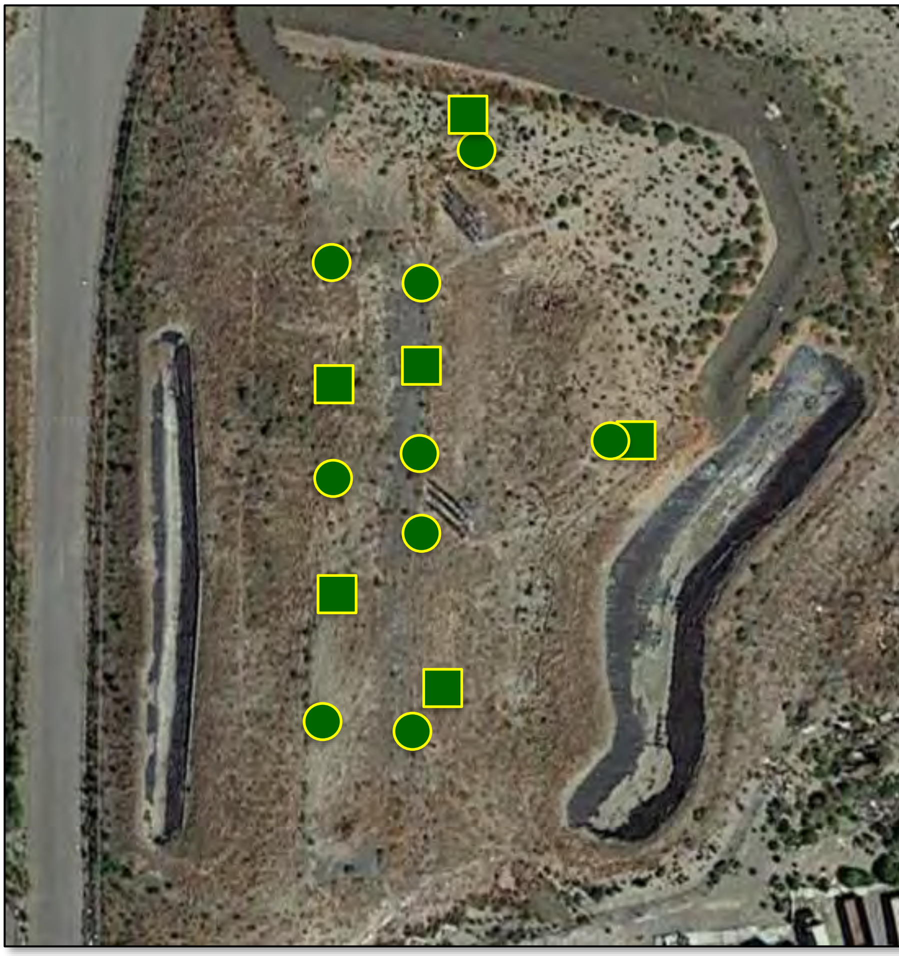
Zone A Combustion Evaluation Report
Pasco Sanitary Landfill



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ABBREVIATIONS

BA	Bucket Auger Boring Location
CO	Carbon Monoxide
CO_2	Carbon Dioxide
ETL/ETLF	Elevated Temperature Landfill
FEMA	Federal Emergency Management Agency
GI	Gas Implant (Soil Gas) Probe Location
LEL	Lower explosive limit
MSW	Municipal Solid Waste
O_2	Oxygen
SVE	Soil Vapor Extraction
TC	Thermocouple Location
TVS	Total Volatile Solids

TITLE AND APPROVAL SHEET

ZONE A COMBUSTION EVALUATION REPORT
Pasco Sanitary Landfill

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EXECUTIVE SUMMARY

This Combustion Evaluation Report has been prepared on behalf of the Industrial Waste Area Generators Group III (IWAG) through the combined efforts of GSI Environmental, SCS Engineers, Environmental Partners, and Anchor QEA. The field program outlined in the *Revised Detailed Work Plan to Evaluate Potential Combustion in Zone A* is complete except as noted below. The objective of the field program described in the Work Plan was *"to gather sufficient data, through multiple lines of evidence, to allow for a clear evaluation of whether or not combustion is occurring beneath Zone A"* and *"allow(s) for monitoring of conditions in the future to assess changes in the subsurface of Zone A in response to modifications in ongoing SVE system operation."* Collectively, the six lines of evidence demonstrate that combustion is not occurring in Zone A and is not expected to occur in the future. Table E-1 summarizes the results and evidence for or against on-going combustion in Zone A. Table E-2 provides a summary of the combustion lines of evidence data generated by the testing program by monitoring location.

These data support the following conceptual site model:

- Extensive biodegradation, both aerobic and anaerobic, of the organic chemicals and to a lesser extent the mixed debris in Zone A are generating heat, carbon dioxide (CO_2), and carbon monoxide (CO) and are depleting oxygen (O_2).
- Carbon monoxide can be generated by biological processes and is not considered a reliable method to detect subsurface combustion when used as a single indicator.
- "Mixed debris," comprised of wood, cardboard, and other components of municipal solid waste (MSW) is found in Zone A in lenses separated by layers of interleaved silty sands and/or sandy silts with little to no organic content. Mixed debris was not detected in five of the 18 instrument borings and was a small fraction of material retrieved in the six large-scale bucket auger borings.
- The non-continuous nature of the mixed debris will prevent uncontrolled subsurface combustion that otherwise could occur in municipal landfills. The mixed debris in Zone A has little volatile material, and is a smaller contributor to the overall biodegradation processes at the site than the organic chemicals.
- Biodegradation reactions will result in a different signal than that resulting from either smoldering combustion or flaming combustion of mixed debris: 1) temperatures will be much lower because biodegradation can produce temperatures up to 176 °F while the first stages of spontaneous combustion in MSW requires at least 392 °F; 2) if oxygen concentrations are reduced over time, biodegradation can increase carbon monoxide while combustion shows the opposite signal; and 3) there will be only minor subsidence over time, not the several percent per year as shown by combustion in some MSW landfills.
- Multiple lines of evidence show that combustion is not occurring in Zone A. These lines of evidence were developed based on an extensive, multi-location, multi-depth, and multi-parameter monitoring program with over 30,000 temperature measurements; 100 soil gas measurements for six different gas parameters, over 200 vertical feet of large-scale bucket auger borings, and 18 smaller rotosonic borings distributed throughout the site. The average spacing between the edges of the two main cross sections (A-A' and C-C', see Figure 3.1) were both less than 45 feet, the detailed understanding of subsurface conditions generated from this Zone A monitoring program.
- Overall Zone A is much more like a large industrial Soil Vapor Extraction (SVE) remediation site, where combustion is typically not a concern, than a MSW site where subsurface combustion is not uncommon.

Table ES-1*. Combustion metrics, results, and analysis.*

OBSERVATIONS	CONCLUSIONS
1. Visual Observation of Smoke	
Smoke and embers have not been observed in Zone A.	A positive detection of smoke is the most definitive indicator of combustion. **Evidence: Does not support combustion.**
2. In Situ Soil Temperatures	**Weighting: HIGH**
Maximum in-situ temperatures recorded were 159°F during the main testing period.	In-situ temperatures are within range of heat-generating biological processes (up to 176°F, Jafari et al., 2017a) and far below the range expected for initiation of spontaneous combustion (> ~392 °F) (Moqbel et al., 2010). **Evidence: Does not support combustion.**
3. Carbon Monoxide Concentration	
Highest lab CO observed from soil gas probes: 930 ppmv. Highest recent lab CO from routine monitoring of Intermediate Zone SVE extraction wells: 1400 ppmv. High CO levels in the two intermediate SVE wells are from anaerobic biological sources as shown by a negative correlation to oxygen levels, cessation of regular well purging immediately before CO began increasing, a lack of smoke from these wells, and low oxygen levels (<2%) that likely cannot support combustion in the immediate vicinity of these wells.	CO concentrations > 1000 ppmv can be generated biologically, and recent 2016 landfill research states: *"…there are not sufficient data to provide guidance on indicator concentrations (for CO). Nonetheless, concluding that a landfill is 'on fire' based on elevated temperatures and elevated CO concentrations can be erroneous."* 2017 landfill research studies do not use the FEMA (2002) 1000 ppmv CO limit as the sole criteria to detect combustion, but use a higher value in combination with several other factors. **Evidence: Potential combustion cannot be not confirmed by this indicator alone.**
4. Carbon Dioxide/Oxygen Relationship	
The observed CO_2/O_2 relationship indicates the primary oxidation reaction in most of Zone A is the biodegradation of organic chemicals, not the combustion or degradation of the mixed debris (e.g., wood, cardboard, and municipal solid waste [MSW]-like material).	Most of the heat is coming from biodegradation of organic chemicals with relatively little being associated with mixed debris. Organic chemicals in soil are not susceptible to uncontrolled combustion; for example, subsurface combustion is not a concern in the vast majority of thermal remediation projects. **Evidence: Does not support combustion.**
5. Characteristics of Mixed Debris Layer	
The mixed debris was generally encountered in lenses separated or by layers of silty sands and/or sandy silts with little to no organic content. There was little continuity in mixed debris in borings located only five feet apart.	Fuel for subsurface combustion is required in the form of a continuous waste layer. Lack of contiguous mixed debris layers makes this site more like a conventional SVE remediation site and unlike a conventional MSW site. **Evidence: Does not support combustion.**
6. Total Volatile Solids (TVS) in Mixed Debris	
The average TVS value of the <u>mixed debris</u> in the large diameter borings is 11.4% and the average TVS value of all of the large diameter borings in their entirety is 0.8%, based on the percentage of the material encountered. For comparison, MSW has a TVS content of 50%. The predominant portion of the fill within Zone A is soil and it is not volatile; the portion that was initially volatile has largely decomposed and is no longer as combustible in any sense.	Low levels of combustible material in the Zone A mixed debris make combustion unlikely. **Evidence: Does not support combustion**
7. Gas Autoignition Temperature	
Test to be performed.	No results yet.

Table ES-2. *Summary of lines of evidence data for key locations in Zone A from main testing period. Soil gas data are average from Events 3 and 4 (see Section 6 for details). See Figure 3.1 for cross section locations.*

Cross-Section	Location	1. Visual Observation of Smoke	2. Maximum *In situ* Soil Temperature (°F)	3. Average Lab Carbon Monoxide Concentration ** (ppmv)	4. Average PID (ppmv)	4. Average Oxygen (%)	4. Material Being Oxidized Based on Carbon Dioxide/Oxygen Relationship	5. Characteristics/Thickness of Mixed Debris (MD) Layer. TC: Thermocouple Boring; GC: Gas Concentration Boring located ~ 5 feet away. TC Borings	Overlap	GC Borings	6. Total Volatile Solids (TVS) in Mixed Debris / Entire Boring	Combustion Indicated?
C	TC/GI1-24	None	157	295	1,725	15	Combination				BA-1	
C	TC/GI1-29	None	154	445	4,741	6	Combination	No mixed debris	0'	6.5' (3 layers)	9.3% / 0.9%	No
C	TC/GI1-35	None	148	480	5,112	6	Combination					
C	TC/GI2-27	None	154	295	**7,481**	3	Chemicals					
C	TC/GI2-32	None	152	280	6,174	12	Chemicals	No mixed debris	0'	No mixed debris		No
C	TC/GI2-36	None	146	200	4,512	17	Chemicals					
C, B	TC/GI3-25	None	**159***	280	4,558	1	Chemicals					
C, B	TC/GI3-30	None	157	205	4,504	16	Chemicals	2.5' (1 layer)	1'	3' (3 layers)		No
C, B	TC/GI3-37	None	147	295	3,756	13	Chemicals				BA-3	
C	TC/GI5-21	None	143	295	3,479	7	Chemicals				14.1% / 1.6%	
C	TC/GI5-28	None	150	305	4,474	1	Chemicals	5.5' (3 layers)	4.5'	9.5' (1 layer)		No
C	TC/GI5-33	None	151	280	4,585	1	Chemicals					
C	TC/GI6-25	None	150	160	3,357	0.4	Chemicals				BA-6	
C	TC/GI6-29	None	153	**765****	3,372	2	Chemicals	4 (1 layer)	0'	3' (3 layers)	13.1% / 0.9%	No
C	TC/GI6-36	None	143	41	3,719	1	Chemicals					
B	TC/GI4-19	None	123	*<100 (meter)*	*1,063*	2	Mixed Debris				BA-5	
B	TC/GI4-24	None	125	*<100 (meter)*	*745*	1	Mixed Debris	7.5' (1 layer)	1	3' (1 layer)	6.6% / 0.9%	No
B	TC/GI4-30	None	124	*<100 (meter)*	*892*	0.4	Mixed Debris					
A	TC/GI7-23	None	123	*<100 (meter)*	*804*	15	Combination					
A	TC/GI7-26	None	129	120	1,507	15	Chemicals					
A	TC/GI7-29	None	132	320	2,997	13	Chemicals	1' (1 layer)	1'	3' (1 layer)	BA-2	No
A	TC/GI7-33	None	135	285	2,266	14	Chemicals				19.2% / 0.3%	
A, B	TC/GI8-26	None	139	78	1,427	19	Mixed Debris					
A, B	TC/GI8-29	None	141	190	3,668	19	Mixed Debris	No mixed debris	0'	No mixed debris	BA-4;	No
A, B	TC/GI8-32	None	141	300	3,530	18	Chemicals				6.0% / 0%	
A, B	TC/GI8-37	None	137	385	4,173	15	Chemicals					
A	TC/GI9-25	None	119	118	616	20	Mixed Debris					
A	TC/GI9-29	None	124	*<100 (meter)*	*641*	19	Mixed Debris	2.5' (2 layers)	0.5'	0.5' (1 layer)		No
A	TC/GI9-34	None	129	*<100 (meter)*	*797*	18	Mixed Debris					
A	TC/GI9-39	None	126	*<100 (meter)*	*879*	18	Mixed Debris					

* 160 °F measured during subsequent Six Day test ** 930 ppmv measured in Sample Event 1 at GI2-32.

In summary, extensive Zone A data conclusively demonstrate that combustion has not occurred since startup of the expanded SVE system, is not occurring presently, and is not expected to occur in the future. The parameters and their relationships supporting this evaluation are well understood, as are the nature and characteristics of Zone A. Consequently, the SVE system can be operated in more intensive manner, if implemented in a controlled, data-driven manner as discussed below.

Recommendations

Moving forward, the IWAG will complete the autoignition testing program for Zone A soil gas, as the last line of field evidence in this evaluation. It should be noted, however, that the composition and condition of the soil gas measured in Zone A do not suggest that autoignition of the gas is a concern at Zone A.

In addition, we recommend the following be applied as part of the on-going operation of the Zone A SVE system to monitor and assess critical parameters informing the conceptual site model.

- Continued monitoring temperature, particularly of the thermocouple locations that had small (≤ 5 ºF) increases in temperature during the testing program, with the recent re-programming of the dataloggers to measure temperature from Type T thermocouples from this point forward. Investigative work should be conducted to determine if the one inoperative thermocouple (TC2-16) can be brought back in service or otherwise be replaced if necessary.
- Track the shallow versus deep temperature thermocouple data to discern temperature fluctuations due to seasonal heating and significant barometric effects.
- Apply current landfill research that cautions against relying on single lines of evidence, particularly carbon monoxide alone, to assess subsurface combustion:
  - Barlaz et al. (2016) states "*[n]onetheless, concluding that a landfill is "on fire" based on elevated temperatures and elevated CO concentrations can be erroneous" and "Consequently, ETLFs often exhibit elevated temperatures and elevated CO concentrations, even though a landfill fire (combustion) is not present*."
  - Jafari et al. (2017a) advocated using these three criteria together for finding a "smoldering front": CO >1500 ppmv, and ratio of CH_4 to CO_2 less than 0.2; and in-situ waste temperatures >80 °C (176 °F). They concluded temperature was the most of these accurate metrics. Finally, they stressed that the "tail" of a smoldering front can be identified by high settlement rates (> 3% per year).
- Resume operation of the intermediate zone SVE wells after installation of the new RTO and upgraded monitoring and control system in a staged manner and carefully evaluate how soil gas concentrations and in-situ temperatures respond. Incorporate soil gas and vapor temperature data into the operational decisions for the SVE system to determine and calibrate the response of the Zone A system under different flowrate conditions.
- The consultant team has a high degree of confidence in our conclusions from the combustion study and believes data collection for implementation of the recommendations can be performed in the current periodic manner using discrete sample events. However, IWAG has advised they will evaluate and implement, if feasible, enhanced data collection methods with extraction from the intermediate wells to provide Ecology with additional assurances that operation of these wells would not result in combustion. One enhancement could be to implement continuous temperature monitoring of the in-situ soil thermocouples and vapor from the intermediate wells with the data used as control parameters by the SVE

process control system so as to rapidly identify any significant changes in the subsurface. The temperature monitoring data could be compared with other parameters relied upon in the recent landfill combustion literature to evaluate the conditions under which potential combustion could occur.

1.0 INTRODUCTION

1.1 Background

During initial testing of the upgraded soil vapor extraction (SVE) system at Zone A in the spring of 2012, elevated temperatures up to 123 degrees Fahrenheit (°F) were observed in the SVE effluent gas. The increase in vapor temperature was discussed with the Washington Department of Ecology (Ecology), which expressed concern that the rise in temperature was potentially indicative of subsurface combustion. From June to September 2012, the IWAG performed a comprehensive evaluation to assess whether or not the conditions in Zone A were indicative of either subsurface combustion or subsurface heating not associated with combustion (i.e., degradation of solid or industrial waste). These activities included:

- Temperature and chemical data collection;
- Evaluation of seven indicators of a heating event related to subsurface combustion in landfills; and
- Analysis of several geochemical indicators including oxygen (O_2)/carbon dioxide (CO_2) relationships; isotopic analysis; and other factors.

These activities were documented in the *Zone A Heating Evaluation*, Pasco Sanitary Landfill Site (Anchor QEA, 2012). The authors concluded: *"there is no evidence that the elevated subsurface temperature and elevated CO [carbon monoxide] concentrations are due to combustion processes. In addition, the geochemical data indicate that the heating can be attributed to biochemical reactions in the vicinity of Zone A."*

Since spring of 2012, the maximum wellhead vapor and maximum downhole temperatures have been 144 and 148 °F, respectively (Table 1.1).

Table 1.1. *Summary of key temperature datasets: Wellhead vapor temperatures and maximum borehole temperatures from the Zonge (2014) report. Highest value reported in red.*

	Maximum Wellhead Temperature March 2012 to Nov. 2016 (EPI, 2017) (°F)	Wellhead Temperature / Maximum Borehole Temperature Log (Zonge, 2014)		
		July 11, 2012 (°F)	Feb. 11, 2013 (°F)	Jan. 16, 2014 (°F)
VEW-6S	138	-	-	-
VEW-6I	144	-	-	-
VEW-6D	108	90 / 114	95 / 121	100 / 114
VEW-7S	125	-	-	-
VEW-7I	144	-	-	-
VEW-7D	110	90 / 120	89 / 116	98 / 111
VEW-04	-	90	75	71
VEW-05	-	128	121	115
VEW-51D	-	**148**	146	130
MW-52-S	-	117	131	135
MW-53-S	-	No data	133	133

In late 2016, carbon monoxide (CO) concentrations, up to 950 parts per million by volume (ppmv), in the SVE effluent gas at SVE well VEW-07I again raised concerns by Ecology and IWAG that subsurface combustion may be occurring (Table 1.2). To evaluate if combustion is occurring in Zone A or has recently occurred in Zone A, the *Revised Detailed Work Plan to Evaluate Potential Combustion in Zone A* (Work Plan) was developed and submitted to Ecology in November 2016.

The Work Plan was also designed to "allow for monitoring of conditions in the future to assess changes in the subsurface of Zone A in response to modifications in ongoing SVE system operation." Ecology approved moving forward with the field program in December 2016 and field work was performed in December 2016 through April 2017.

Table 1.2. *Carbon monoxide concentrations January 2016 to March 13, 2017 (laboratory analysis). Highest value shown in red.*

	Carbon Monoxide (ppmv) Jan. 2016 to March 2017			
	Minimum	Median	Maximum	Most Recent
VEW-06S	<5	<5	<5	<5
VEW-06I*	37	355	1200*	1200*
VEW-06D	<5	5.4	8.6	8.6
VEW-07S	<5	5.5	12	12
VEW-07I*	520	730	**1400***	1100*
VEW-07D	8.8	20	25	20

** Values during period when regular well purging not performed*

1.2 Objective

The objective of the field program specified in the Work Plan was to gather sufficient data, through multiple lines of evidence, to allow for a clear evaluation of whether or not combustion is occurring beneath Zone A. Some of the results can also be used to evaluate the general likelihood of combustion in the future. This report presents the results from the field program. These results supplement and expand upon the previous heating evaluation and will provide a platform for monitoring of future conditions for assessing any changes in the subsurface of Zone A in response to modifications in the ongoing SVE system operation.

Key Points

- Elevated temperatures and carbon monoxide concentrations have raised concerns by Ecology and the IWAG that subsurface combustion may be occurring in Zone A.
- To address these concerns, a field program based on obtaining multiple lines of evidence was performed in early 2017 to allow for a definitive evaluation of whether or not combustion is occurring beneath Zone A.

2.0 LINES OF EVIDENCE TO EVALUATE POTENTIAL COMBUSTION

The following lines of evidence were presented in the *Revised Workplan to Evaluate Combustion in Zone A*. Several of these lines of evidence were taken from "Landfill Fires – Their Magnitude, Characteristics, and Mitigation" (FEMA, 2002), and supplemented by more recent information and other methods specific to Zone A. Table 2.1 summarizes the different data collected and the rationale behind each metric. These data were then used in a weighted line of evidence evaluation to evaluate combustion.

Table 2.1. *Lines of evidence to evaluate if combustion is occurring in Zone A.*

Metric	Rationale
1. Visual Observation of Smoke	*Smoke is a confirmatory indicator of subsurface combustion. (Note that steam is indicated instead of smoke if the ambient temperature is conducive for steam formation and the cloud dissipates quickly).*
2. *In situ* Soil Temperatures	*The FEMA landfill fire guidance from 2002 uses in situ soil temperature as an indicator of combustion. High-temperature bacteria grow within the range of 105 to 165°F, with an optimum growth rate between 130 to 150°F.*
3. CO Concentration	*The FEMA landfill fire guidance from 2002 uses CO as a general confirmatory indicator of combustion. CO is produced at landfills by non-combustion sources as well.*
4. Carbon Dioxide/ Oxygen Relationship	*A key question is the nature of the Mixed Debris Unit. Underground combustion of liquids and gases is not self-sustaining in soils, but solid continuous combustible material like carbonaceous landfill waste can support sustained combustion under the right conditions.*
5. Characteristics of Mixed Debris Layer	
6. Total Volatile Solids (TVS) in Mixed Debris	
7. Gas Autoignition Temperature	*The autoignition temperature of the gas mixture in the subsurface at Zone A is a valuable parameter to help gauge the overall risk of an autoignition event.*

2.1 Visual Observation of Smoke

Smoke is a confirmatory indicator of subsurface combustion. The FEMA 2002 guidance states that "[s]moke or smoldering odor emanating from the gas extraction system or landfill" is one of six factors that "generally confirms" underground combustion is occurring.

Note that if the ambient temperature is conducive for steam formation, then special care was taken to avoid false positive indicators of combustion. One key difference between actual smoke and steam being emitted from core material is that a steam cloud dissipates more quickly. Project results are presented in Section 4.

2.2 In Situ Soil Temperatures

The FEMA landfill fire guidance from 2002 states that "temperatures in excess of 170 °F" is one of six factors that "generally confirms" underground combustion is occurring. This is a reference to subsurface soil temperatures and not temperatures in the extraction system gas. Subsurface temperatures can be elevated by biodegradation (e.g., Warren and Bekins, 2015; ThermalNSZD.com, 2017). Experts in elevated temperature landfills state that *"the literature suggests that biological reactions may result in landfills at perhaps 160-170 °F*" (Barlaz et al., 2016a). Jafari et al. (2017a) cited several references to support their conclusion that the upper boundary of anaerobic biological activity is 80 °C (176 °F). Normal operating temperatures for municipal landfills are less than <131°F, but "high operating variances (HOVs) to allow temperatures above 131°F are not uncommon" (Barlaz et al., 2016a).

On the other extreme, Moqbel et al. (2010) performed research that showed: *"MSW was found to have an ignition initiation point near the lower end of waste components tested (200 °C)."* At this temperature (equivalent to 392 °F) a combustion scenario is very likely.

Project results are presented in Section 5.

2.3 CO Concentration

The FEMA landfill fire guidance from 2002 states that "elevated levels of CO in excess of 1,000 parts per million (ppm)" is one of six factors that "generally confirms" underground combustion is occurring. However, they warn that *"to confirm a subsurface fire using CO, the results must be acquired through quantitative laboratory analysis (using portable monitors may result in artificially high concentrations*)." The FEMA document noted*: "[i]n California, levels of CO in excess of 1,000 ppm are considered a positive indication of an active underground landfill fire."*

However, extensive research since the FEMA guidance was issued in 2002 has identified a number of non-combustion CO sources in the subsurface, and landfill experts now state: *"concluding that a landfill is "on fire" based on elevated temperatures and elevated CO concentrations can be erroneous"* (Barlaz et al., 2016b) (see text box to right).

Non-combustion processes that can produce CO include anaerobic production from mesophilic (25–40 °C or 77–104 °F) and thermophilic (up to 80 °C or 176 °F) microorganisms as well as pyrolytic reactions (Barlaz et al., 2016b).

Both FEMA (2001) and Barlaz et al. (2016) also caution that CO readings from meters can produce artificially high concentrations:

FEMA Landfill Fire Guidance

The FEMA landfill fire guidance from 2002 states that "elevated levels of CO in excess of 1,000 parts per million (ppm)" is one of six factors that "generally confirms" underground combustion is occurring. However, they warn that *"to confirm a subsurface fire using CO, the results must be acquired through quantitative laboratory analysis (using portable monitors may result in artificially high concentrations*)."

The other five factors listed in the FEMA guidance included: substantial settlement, smoke or smoldering odor, combustion residue inside wells and headers, increase in gas temperature above 140 degrees F, and temperatures in excess of 170 degrees F.

We believe that no single factor can confirm the presence of a landfill fire. In theory, all these symptoms exist with a landfill fire, even though some may not be observable. But a preponderance of data, or in this case a majority of these factors being seen, can only reasonably be used to confirm a landfill fire.

Moreover, CO readings in excess of 1,000 ppm may be associated with landfill fires, but are not exclusive to combustion occurring. A developing body of evidence confirms that CO can be found under non-combustion conditions. Extensive research since the FEMA guidance was issued in 200 has identified a number of non-combustion CO sources in the subsurface, and landfill experts now state: "concluding that a landfill is "on fire" based on elevated temperatures and elevated CO concentrations can be erroneous" (Barlaz et al., 2016b) (see text box to right). Thus, elevated CO readings alone cannot confirm a landfill fire, any more than any one of the other factors listed.

To confirm a subsurface fire using CO, the results must be acquired through quantitative laboratory analysis (using portable monitors may result in artificially high concentrations). (FEMA, 2002).

Caution must be exercised when measuring CO levels in gas, especially when using hand-held meters simultaneously reporting CH_4, CO_2, O_2, CO, and balance gas (assumed to be N_2). The manufacturers of some meters have indicated that high levels of H_2 may be mistaken for CO. In addition, because H_2 is not measured directly by most hand-held meters, the user may assume that the elevated balance gas is only N_2 when it is actually $N_2 + H_2$. Given that CH_4 and CO_2 are normally the primary constituents in LFG, the presence of high H_2 concentrations is atypical. Thus, the accumulation of H_2, as is sometimes observed in ETLFs, indicates that typical landfill biological processes have been interrupted. Therefore if a field meter indicates high CO or balance gas, and there is a trend of increasing gas well temperatures, then consider having gas samples analyzed by an accredited laboratory to determine if CO and H_2 are present. Elevated H_2 would suggest an ETLF as opposed to a landfill fire or SOE (subsurface oxidation event). (Barlaz et al., 2016b).

In a recent paper, Jafari et al. (2017) rejected use of the FEMA (2002) CO limit alone to identify combustion. They used four lines of evidence:

"FEMA (2002) states that CO concentrations exceeding 1000 ppmv is indicative of subsurface combustion. In the proposed framework, the smoldering front is defined by CO concentrations, subsurface temperatures, and waste settlement instead of only CO concentration."

Jafari et al. (2017a) used "*spatial and temporal characteristics of elevated temperatures*" in two elevated temperature municipal solid waste landfills and defined a classification system with the following criteria:

1. *Anaerobic Decomposition:* Gas temperatures below 65 °C (149 °F) and typical ratios of CH_4 to CO_2 greater than or close to unity.
2. *Gas Front:* Decreasing ratio of CH_4 to CO_2 and gas wellhead temperatures at or below the NSPS threshold of 55 °C (131 °F).
3. *Temperature Front:* Increasing gas wellhead temperatures and decreasing ratio of CH_4 to CO_2.
4. *Smoldering Front:* The front boundary of the smoldering front includes CO >1500 ppmv and ratio of CH_4 to CO_2 less than 0.2, combined with waste temperatures >80 °C (176 °F). The tail

New Understanding of Landfill Combustion since the 2002 FEMA Guidance

In 2015, the Environmental Research and Education Foundation (2016) funded a research project titled: *"Understanding and Predicting Temperatures in Municipal Solid Waste Landfills."* The principal investigators of the project are Dr. Craig Benson of the University of Virginia, Dr. Morton Barlaz of North Carolina State University, Dr. Marco Castaldi of The City College of New York and Mr. Scott Luettich of Geosyntec Consultants.

In a recent article (Barlaz et al., 2016b), they summarized the current state of knowledge about elevated temperature landfills:

"A very small percentage of municipal solid waste (MSW) landfills in North America have reported elevated and increasing temperatures above those normally associated with a "hot gas well." Temperatures above 150°F or even 250°F have been reported in some cases. Some of these elevated temperature landfills (ETLFs), have received industrial wastes that may release heat, while others have not. Considerable uncertainty exists regarding why some landfills exhibit elevated and increasing temperatures."

"The activity of CO-producing microorganisms in landfills is not well understood. While they may have a role in producing CO when methanogens are inhibited, such as in (elevated temperate landfills) ETLFs, there are not sufficient data to provide guidance on indicator concentrations. ***Nonetheless, concluding that a landfill is "on fire" based on elevated temperatures and elevated CO concentrations can be erroneous."***

"Consequently, ETLFs often exhibit elevated temperatures and elevated CO concentrations, even though a landfill fire (combustion) is not present."
(Emphasis added.)

of the smoldering front can be delineated by settlement strain rates >3%/yr, which signifies thermal degradation of the waste is occurring.

In a second paper, Jafari et al., (2017b) reemphasize that CO can have a biological origin: *"Powell et al. (2006) monitored an aerobic landfill and detected average CO levels of 245 ppmv with a maximum concentration of 1,200 ppmv. Waste temperatures remained below 76°C during the study, so Powell et al. (2006) concluded that CO was produced as a result of biological degradation of the waste under limited oxygen conditions." (Note that 76°C is 168°F).*

In summary, there has been important new research in elevated temperature municipal landfills over the past two years. A research team representing the University of Virginia, North Carolina State University, The City College of New York, and Geosyntec Consultants have cautioned (Barlaz et al., 2016b): "*[n]onetheless, concluding that a landfill is "on fire" based on elevated temperatures and elevated CO concentrations can be erroneous."* A recent paper by researchers from Louisiana State University, the University of Illinois, and California EPA have developed a classification system where a "smoldering front" is identified by soil temperatures exceeding 176 °F and CO concentrations > 1500 ppmv (Jafari et al., 2017), and not CO alone. These important studies are directly applicable to this Zone A Combustion Evaluation, as further indicated below. Project results are presented in Section 6.

2.4 Carbon Dioxide/ Oxygen Relationship

A key question regarding the potential for combustion in Zone A is the nature of what has earlier been referred to as "Mixed Debris." It is important to know whether the heat, consumption of oxygen, and production of carbon dioxide is more likely originating from the oxidation (either biodegradation or combustion) of:

- The mixed debris, which is largely comprised of wood, cardboard, and lesser amounts of municipal solid waste components; or
- The volatile organic compounds, represented by aromatics and ketones.

Because underground combustion of liquids and gases is not self-sustaining in soils, but solid continuous combustible material like carbonaceous landfill waste can support sustained combustion under the right conditions, knowing the main source of the underground reactions can help determine if subsurface combustion is occurring or may occur:

- If most of the oxygen being consumed and carbon dioxide being generated is from the oxidation solid/semi-solid carbonaceous materials (wood, paper, municipal solid waste) then it is **more** likely that subsurface combustion is occurring in Zone A.
- If most of the oxygen being consumed and carbon dioxide being generated is from the oxidation volatile organic liquids then it is **less** likely that subsurface combustion is occurring in Zone A.

The ratio of CO_2 to O_2 can be compared to a stoichiometric relationship to determine if the chemicals that generated a particular CO_2 to O_2 mix originated from organic chemicals like toluene, acetone, or methane vs. longer chained compounds like paper, wood, and MSW. This is presented in Section 7.

2.4 Characteristics of "Mixed Debris" and Total Volatile Solids in the Mixed Debris

A key question regarding the potential for combustion in Zone A is the nature of what has earlier been referred to as the "Mixed Debris" and if the mixed debris is present in enough sufficiently large and contiguous zones that could possibly support and sustain subsurface combustion. The differences between municipal landfill waste and most industrial sites are illustrated below:

- In municipal landfills, the entire waste zone is a potential interconnected combustion source that can support combustion, and municipal landfill subsurface combustion is a major concern.
- At contaminated industrial sites, liquid contaminants are confined to the pore spaces of the porous soil media that will not support combustion except under special engineered circumstances (e.g., engineered smoldering such as Savron's STAR process).

Underground combustion of liquids and gases is not self-sustaining in subsurface soils (Terratherm et al., 2001; Savron, 2016), but solid continuous combustible material like carbonaceous landfill waste can support sustained combustion under the right conditions (FEMA, 2002). Therefore, understanding the nature and continuity of the mixed debris is important for gaging the risk of subsurface combustion.

Total volatile solids (TVS) testing can also be used to determine the potential for combustion of the mixed debris in Zone A. As this will help to determine the amount of organics present in the subsurface. This analysis is presented in Section 8.

2.6 Gas Autoignition Temperature

The autoignition temperature of the gas mixture in the subsurface at Zone A is a valuable parameter to help gauge the overall risk of an autoignition event. In an email from Ecology on Feb. 27, 2015, Ecology stated:

> *Ecology has concern over any activities that potentially could push excess heat (and/or a combustion front) farther into the interior of Zone A and closer to the drums.*
>
> *The Online Chemical Handbook states that "Carbon disulphide has an extremely low autoignition temperature (125°C or 257 degrees F). May ignite or even explode when heated…Ignition temperature dangerously low: 212F." Historical SVE analyses indicate that carbon disulfide has been frequently detected, albeit at relatively low concentrations, in the SVE airstream. Highest concentrations have been reported at extraction well VEW-07i. Vapor samples collected from VEW-07i as recently as October 2014 contained detectable concentrations of carbon disulfide.*
>
> *Use of a 300 degree F threshold potentially introduces temperatures beneath Zone A which could exceed the autoignition or standard ignition temperatures for carbon disulfide (or possibly other gaseous constituents).*
>
> *The IWAG should use its own discretion over establishing temperature threshold criteria for this proposed upcoming CO2 injection event based on its current understanding and updated CSM of Zone A subsurface conditions – including but not limited to the recent auger-boring investigation results. We simply wanted to provide this point of perspective over the IWAG's proposed temperature threshold value.*

As part of this Work Program, a gas sample from one of the zones with high volatile organic compound (VOC) concentrations (including carbon disulfide) and relatively high oxygen concentrations will be collected to determine the autoignition temperature of the resulting gas mixture.

Key Points

- Seven lines of evidence will be used to evaluate potential subsurface combustion in Zone A: smoke, in-situ soil temperatures, carbon monoxide, characteristics of the mixed debris, Total Volatile Solids analysis of the mixed debris, carbon dioxide/oxygen relationships and that of other gasses, and autoignition testing.

3.0 FIELD PROGRAM TO EVALUATE POTENTIAL COMBUSTION

The field program consisted of two separate field activities/installations (Figures 3.1). As initial step, nine temperature/gas ("T/G") monitoring stations were installed into Zone A: five between the randomly placed drums and stacked drum areas; three in the randomly placed drum area; and one near VMW-51D outside of the eastern boundary of the stacked drum area.

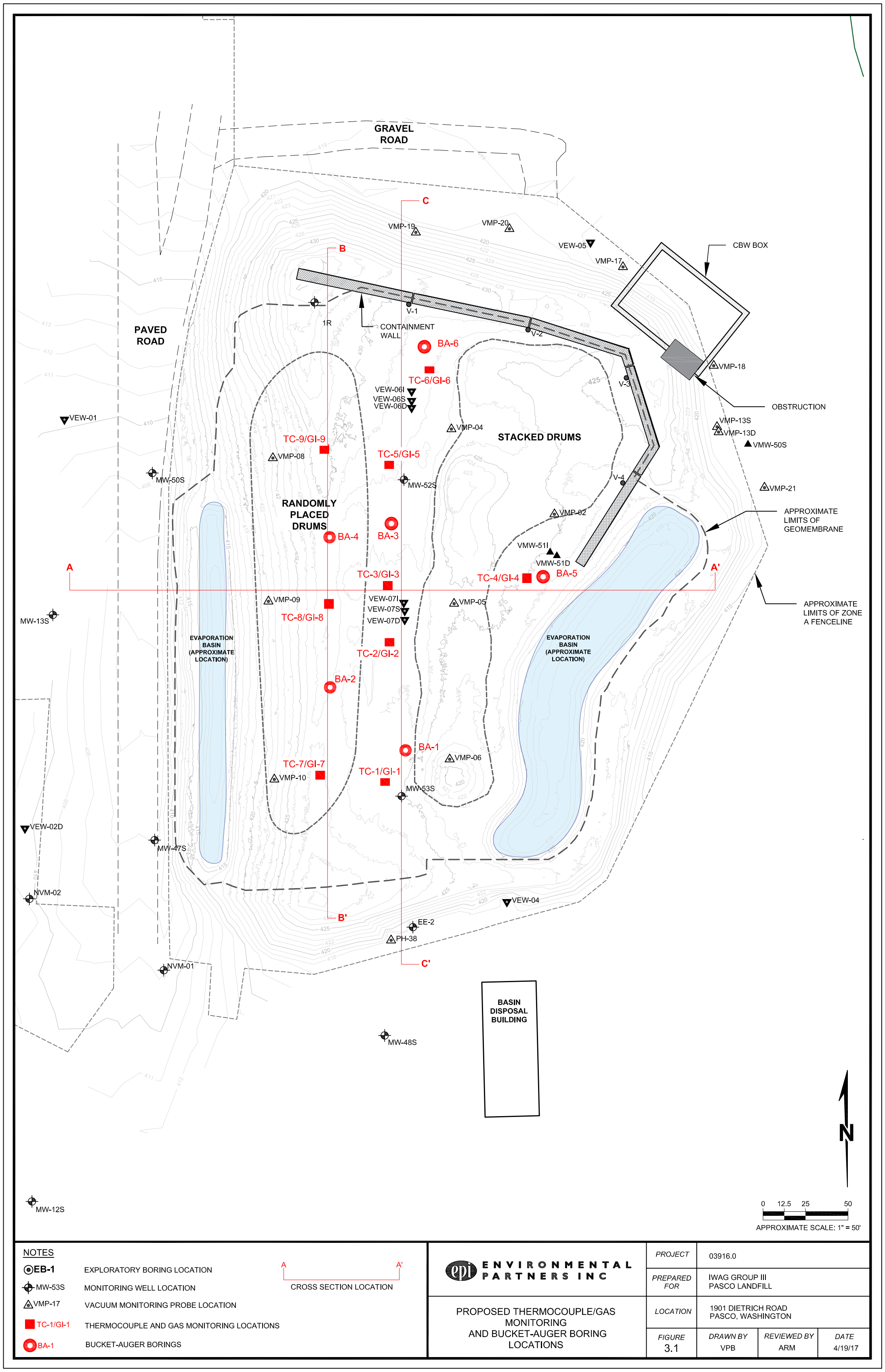
The mixed debris unit was sampled using a large-diameter bucket auger at six locations adjacent to the temperature/gas monitoring stations (see Figure 3.1). Bucket auger borings were advanced at the three locations in the randomly placed drum area.

A conceptual cross section of the field program is shown in Figure 3.2. The detailed description of the field program is provided in Appendix A. Cross sections showing key results are shown in

- Figures 3.3a, b, c (Presence of Mixed Debris)
- Figures 3.4a, b, and c (Temperature)
- Figures 3.5a, b, and c (Soil gas)

Appendix B has a detailed description of the field program. Appendix D has an additional discussion regarding the temperature measurement program.

Key Points
• The field program specified in the Work Plan was implemented in early 2017 with only minor changes.


GRAVEL ROAD
PAVED ROAD
C
B
VMP-19
VMP-20
VEW-05
VMP-17
CBW BOX
1R
V-1
CONTAINMENT WALL
V-2
BA-6
TC-6/GI-6
V-3
VMP-18
OBSTRUCTION
VEW-06I
VEW-06S
VEW-06D
VMP-04
STACKED DRUMS
VMP-13S
VMP-13D
VMW-50S
VEW-01
TC-9/GI-9
VMP-08
TC-5/GI-5
MW-50S
MW-52S
V-4
VMP-21
RANDOMLY PLACED DRUMS
BA-3
BA-4
VMP-02
APPROXIMATE LIMITS OF GEOMEMBRANE
VMW-51I
VMW-51D
BA-5
A
TC-3/GI-3
TC-4/GI-4
A'
VMP-09
VEW-07I
VEW-07S
VEW-07D
VMP-05
APPROXIMATE LIMITS OF ZONE A FENCELINE
MW-13S
TC-8/GI-8
EVAPORATION BASIN (APPROXIMATE LOCATION)
TC-2/GI-2
EVAPORATION BASIN (APPROXIMATE LOCATION)
BA-2
BA-1
VMP-06
TC-7/GI-7
TC-1/GI-1
VMP-10
MW-53S
VEW-02D
MW-47S
NVM-02
VEW-04
B'
EE-2
PH-38
C'
NVM-01
BASIN DISPOSAL BUILDING
MW-48S
N
MW-12S
0 12.5 25 50
APPROXIMATE SCALE: 1" = 50'
NOTES
EB-1 EXPLORATORY BORING LOCATION
MW-53S MONITORING WELL LOCATION
VMP-17 VACUUM MONITORING PROBE LOCATION
TC-1/GI-1 THERMOCOUPLE AND GAS MONITORING LOCATIONS
BA-1 BUCKET-AUGER BORINGS
A A'
CROSS SECTION LOCATION
ENVIRONMENTAL PARTNERS INC
PROPOSED THERMOCOUPLE/GAS MONITORING AND BUCKET-AUGER BORING LOCATIONS
PROJECT 03916.0
PREPARED FOR IWAG GROUP III PASCO LANDFILL
LOCATION 1901 DIETRICH ROAD PASCO, WASHINGTON
FIGURE 3.1
DRAWN BY VPB
REVIEWED BY ARM
DATE 4/19/17

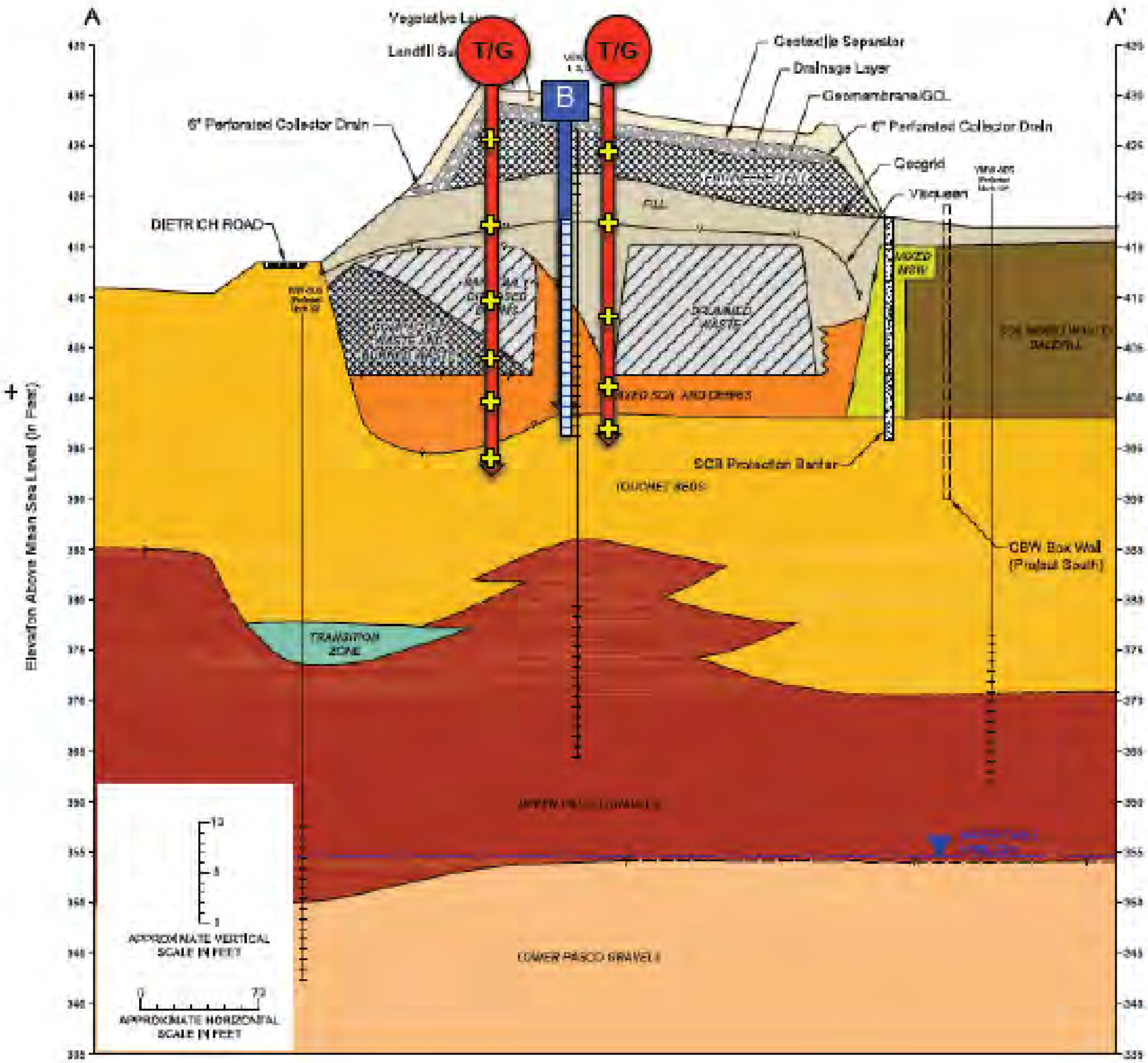


Figure 3.2. *Conceptual vertical placement of temperature/gas (T/G) monitoring points (yellow cross indicates where thermocouples and gas sampling tube screens are located) and the detailed bucket (B) auger target zone (hatched blue area shows where detailed coring/soil sampling will be performed below the visqueen layer). Source of original figure: SCS Engineers.*

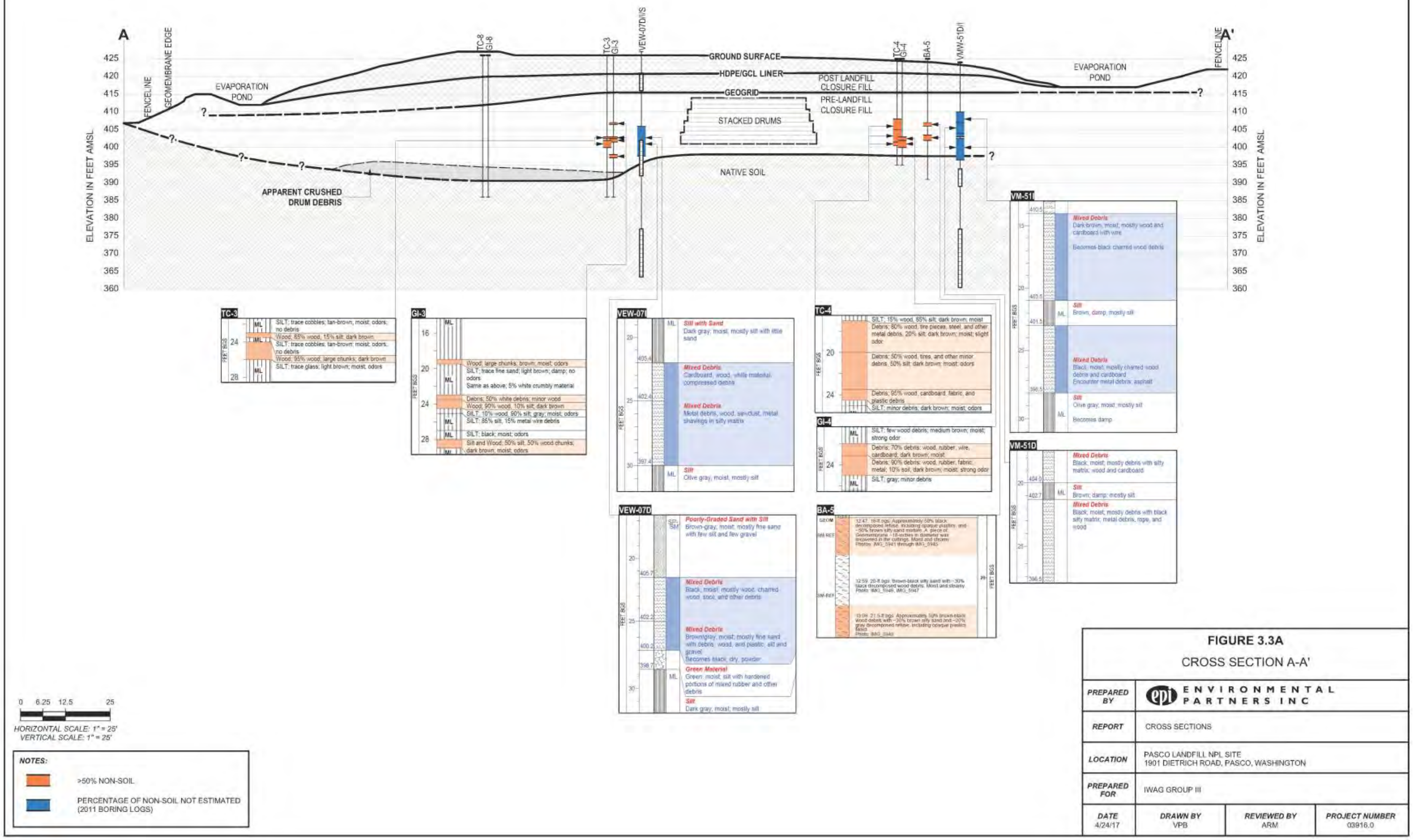
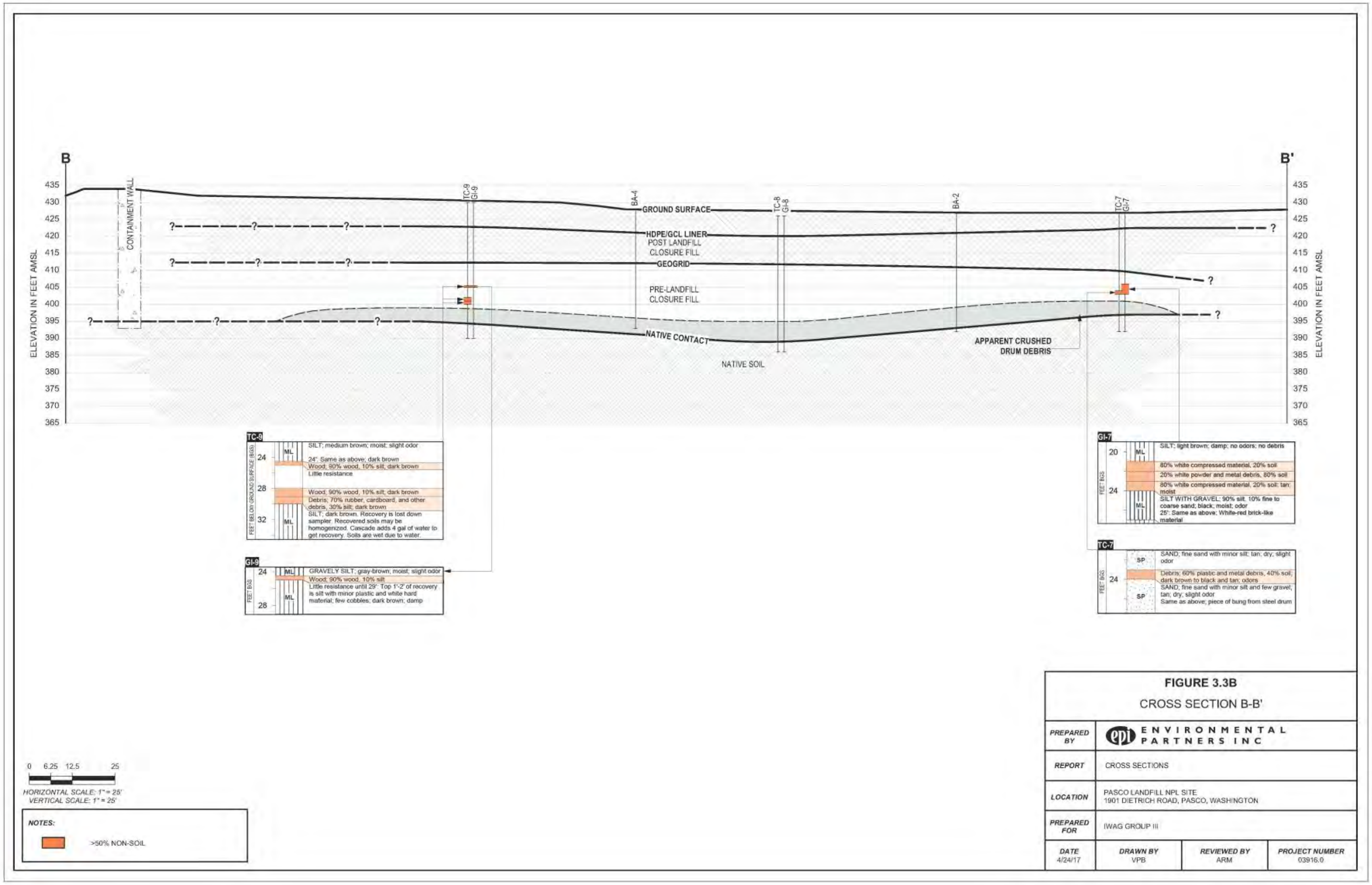


FIGURE 3.3A

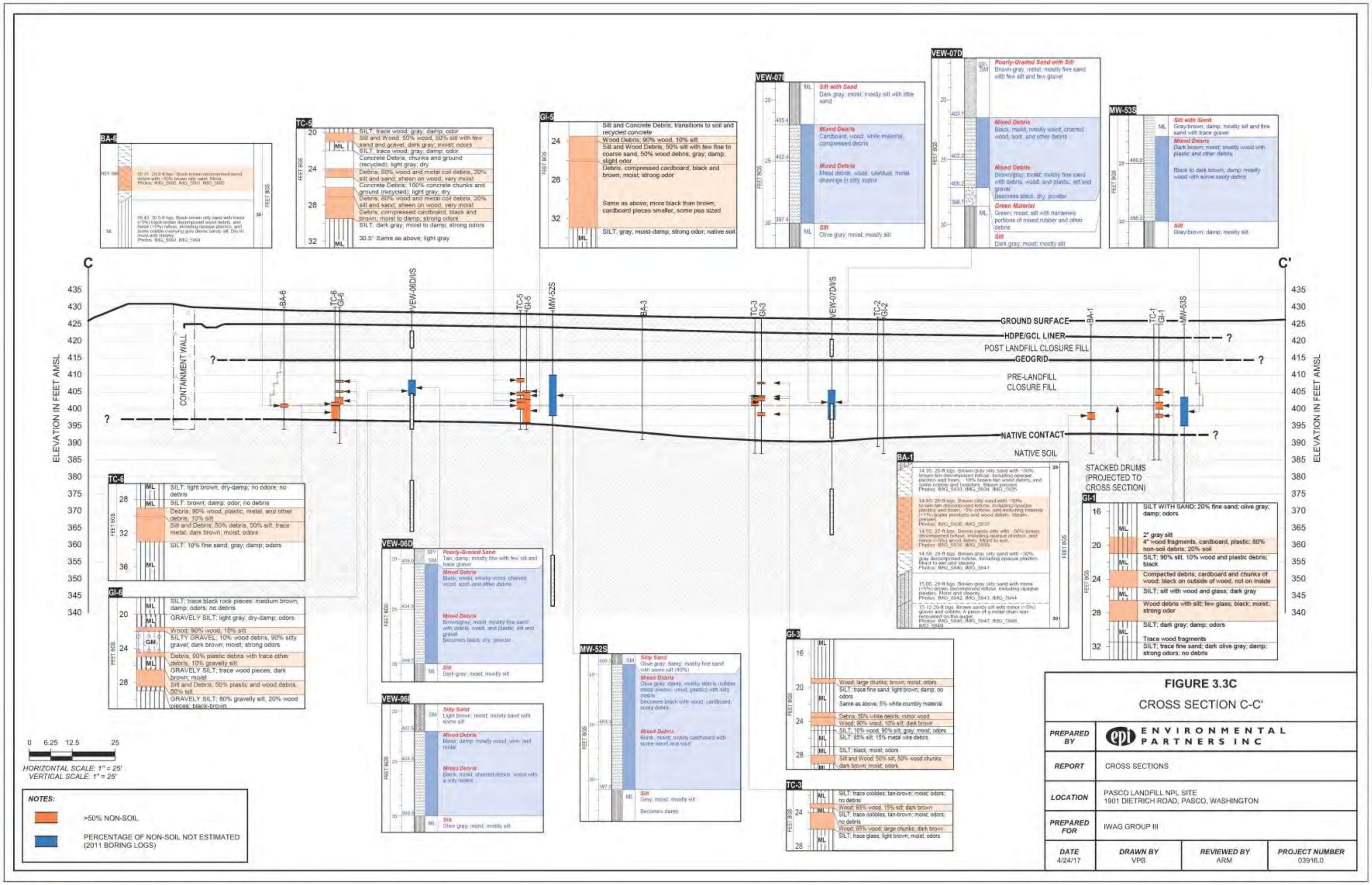
CROSS SECTION A-A'

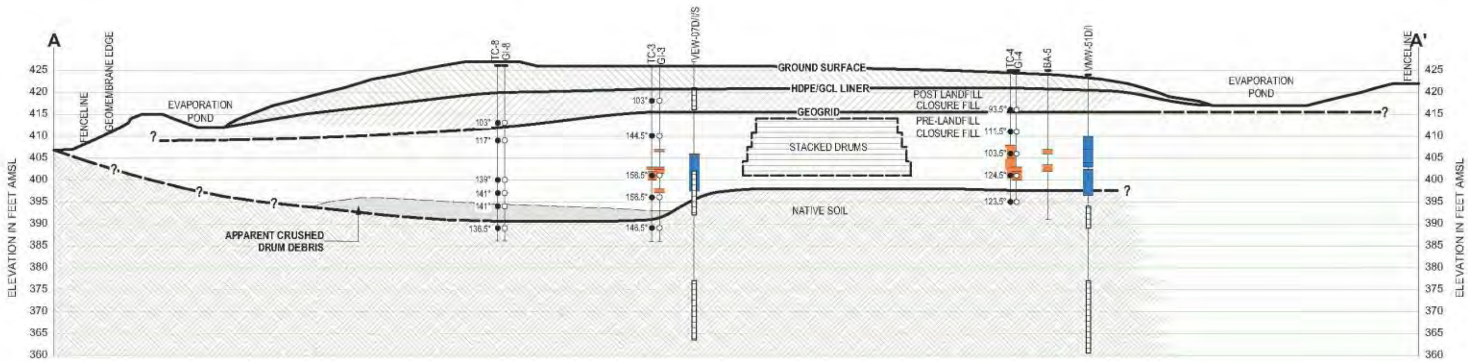
PREPARED BY	ENVIRONMENTAL PARTNERS INC
REPORT	CROSS SECTIONS
LOCATION	PASCO LANDFILL NPL SITE, 1901 DIETRICH ROAD, PASCO, WASHINGTON
PREPARED FOR	IWAG GROUP III

DATE	DRAWN BY	REVIEWED BY	PROJECT NUMBER
4/24/17	VPB	ARM	03916.0



B
B'
ELEVATION IN FEET AMSL
435
430
425
420
415
410
405
400
395
390
385
380
375
370
365
CONTAINMENT WALL
TC-9
GI-9
BA-4
TC-8
GI-8
BA-2
TC-7
GI-7
GROUND SURFACE
HDPE/GCL LINER
POST LANDFILL
CLOSURE FILL
GEOGRID
PRE-LANDFILL
CLOSURE FILL
NATIVE CONTACT
NATIVE SOIL
APPARENT CRUSHED
DRUM DEBRIS
TC-9
FEET BELOW GROUND SURFACE (BGS)
24
28
32
ML
SILT; medium brown; moist; slight odor
24': Same as above; dark brown
Wood; 90% wood, 10% silt; dark brown
Little resistance
Wood; 90% wood, 10% silt; dark brown
Debris; 70% rubber, cardboard, and other debris, 30% silt; dark brown
SILT; dark brown. Recovery is lost down sampler. Recovered soils may be homogenized. Cascade adds 4 gal of water to get recovery. Soils are wet due to water.
GI-9
FEET BGS
24
28
ML
GRAVELY SILT; gray-brown; moist; slight odor
Wood; 90% wood, 10% silt
Little resistance until 29': Top 1'-2' of recovery is silt with minor plastic and white hard material; few cobbles; dark brown; damp
GI-7
FEET BGS
20
24
ML
SILT; light brown; damp; no odors; no debris
80% white compressed material, 20% soil
20% white powder and metal debris, 80% soil
80% white compressed material, 20% soil; tan; moist
SILT WITH GRAVEL; 90% silt, 10% fine to coarse sand; black; moist; odor
25': Same as above; White-red brick-like material
TC-7
FEET BGS
24
SP
SAND; fine sand with minor silt; tan; dry; slight odor
Debris; 60% plastic and metal debris, 40% soil; dark brown to black and tan; odors
SAND; fine sand with minor silt and few gravel; tan; dry; slight odor
Same as above; piece of bung from steel drum
0 6.25 12.5 25
HORIZONTAL SCALE: 1" = 25'
VERTICAL SCALE: 1" = 25'
NOTES:
>50% NON-SOIL
FIGURE 3.3B
CROSS SECTION B-B'
PREPARED BY
ENVIRONMENTAL PARTNERS INC
REPORT
CROSS SECTIONS
LOCATION
PASCO LANDFILL NPL SITE
1901 DIETRICH ROAD, PASCO, WASHINGTON
PREPARED FOR
IWAG GROUP III
DATE
4/24/17
DRAWN BY
VPB
REVIEWED BY
ARM
PROJECT NUMBER
03916.0


C
C'
ELEVATION IN FEET AMSL
CONTAINMENT WALL
GROUND SURFACE
HDPE/GCL LINER
POST LANDFILL CLOSURE FILL
GEOGRID
PRE-LANDFILL CLOSURE FILL
NATIVE CONTACT
NATIVE SOIL
STACKED DRUMS (PROJECTED TO CROSS SECTION)
BA-6
TC-6
GI-6
VEW-06D/I/S
TC-5
GI-5
MW-52S
BA-3
TC-3
GI-3
VEW-07D/I/S
TC-2
GI-2
BA-1
TC-1
GI-1
MW-53S
HORIZONTAL SCALE: 1" = 25'
VERTICAL SCALE: 1" = 25'
NOTES:
>50% NON-SOIL
PERCENTAGE OF NON-SOIL NOT ESTIMATED (2011 BORING LOGS)
FIGURE 3.3C
CROSS SECTION C-C'
PREPARED BY
ENVIRONMENTAL PARTNERS INC
REPORT
CROSS SECTIONS
LOCATION
PASCO LANDFILL NPL SITE
1901 DIETRICH ROAD, PASCO, WASHINGTON
PREPARED FOR
IWAG GROUP III
DATE
4/24/17
DRAWN BY
VPB
REVIEWED BY
ARM
PROJECT NUMBER
03916.0



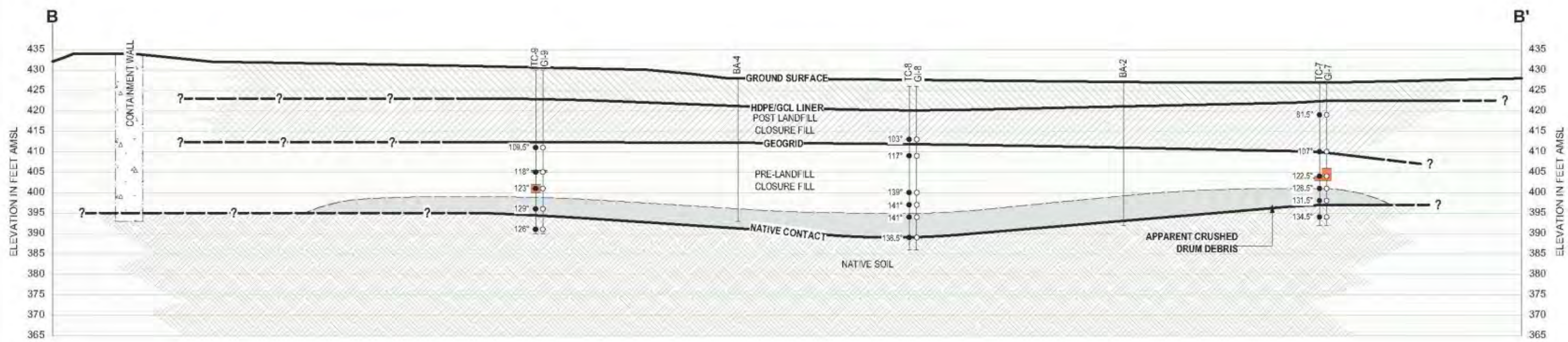
0 6.25 12.5 25

HORIZONTAL SCALE: 1" = 25'
VERTICAL SCALE: 1" = 25'

NOTES:

(orange)	>50% NON-SOIL
(blue)	PERCENTAGE OF NON-SOIL NOT ESTIMATED (2011 BORING LOGS)
●	THERMOCOUPLE LOCATION WITH MAXIMUM MEASURED TEMPERATURE (WEEK 4) IN DEGREES FAHRENHEIT
○	GAS IMPLANT LOCATION

FIGURE 3.4A CROSS SECTION A-A' TEMPERATURE MEASUREMENTS			
PREPARED BY	ENVIRONMENTAL PARTNERS INC		
REPORT	CROSS SECTIONS		
LOCATION	PASCO LANDFILL NPL SITE 1901 DIETRICH ROAD, PASCO, WASHINGTON		
PREPARED FOR	IWAG GROUP III		
DATE 4/24/17	*DRAWN BY* VPB	*REVIEWED BY* ARM	*PROJECT NUMBER* 03916.0



0 6.25 12.5 25

HORIZONTAL SCALE: 1" = 25'
VERTICAL SCALE: 1" = 25'

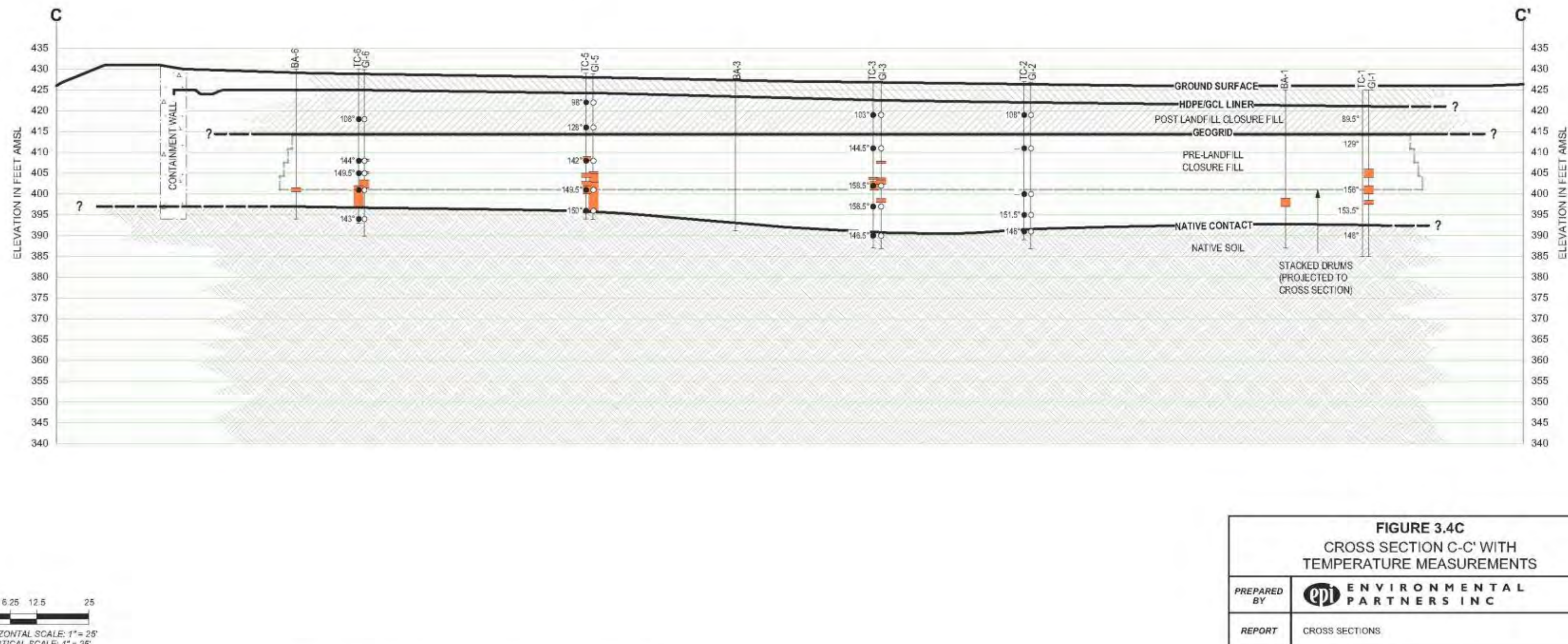
NOTES:

- >50% NON-SOIL
- PERCENTAGE OF NON-SOIL NOT ESTIMATED (2011 BORING LOGS)
- ● THERMOCOUPLE LOCATION WITH MAXIMUM MEASURED TEMPERATURE (WEEK 4) IN DEGREES FAHRENHEIT
- ○ GAS IMPLANT LOCATION

FIGURE 3.4B
CROSS SECTION B-B' WITH TEMPERATURE MEASUREMENTS

PREPARED BY	ENVIRONMENTAL PARTNERS INC
REPORT	CROSS SECTIONS
LOCATION	PASCO LANDFILL NPL SITE 1901 DIETRICH ROAD, PASCO, WASHINGTON
PREPARED FOR	IWAG GROUP III

DATE	***DRAWN BY***	***REVIEWED BY***	***PROJECT NUMBER***
4/24/17	VPB	ARM	03916.0



NOTES:

- >50% NON-SOIL
- PERCENTAGE OF NON-SOIL NOT ESTIMATED (2011 BORING LOGS)
- ● THERMOCOUPLE LOCATION WITH MAXIMUM MEASURED TEMPERATURE (WEEK 4) IN DEGREES FAHRENHEIT
- ○ GAS IMPLANT LOCATION
- -- THESE DATA ARE NOT RELIABLE DUE TO "K" EXTENSIONS

FIGURE 3.4C
CROSS SECTION C-C' WITH TEMPERATURE MEASUREMENTS

PREPARED BY	ENVIRONMENTAL PARTNERS INC		
REPORT	CROSS SECTIONS		
LOCATION	PASCO LANDFILL NPL SITE 1901 DIETRICH ROAD, PASCO, WASHINGTON		
PREPARED FOR	IWAG GROUP III		
DATE 4/24/17	DRAWN BY VPB	REVIEWED BY ARM	PROJECT NUMBER 03916.0

0 6.25 12.5 25

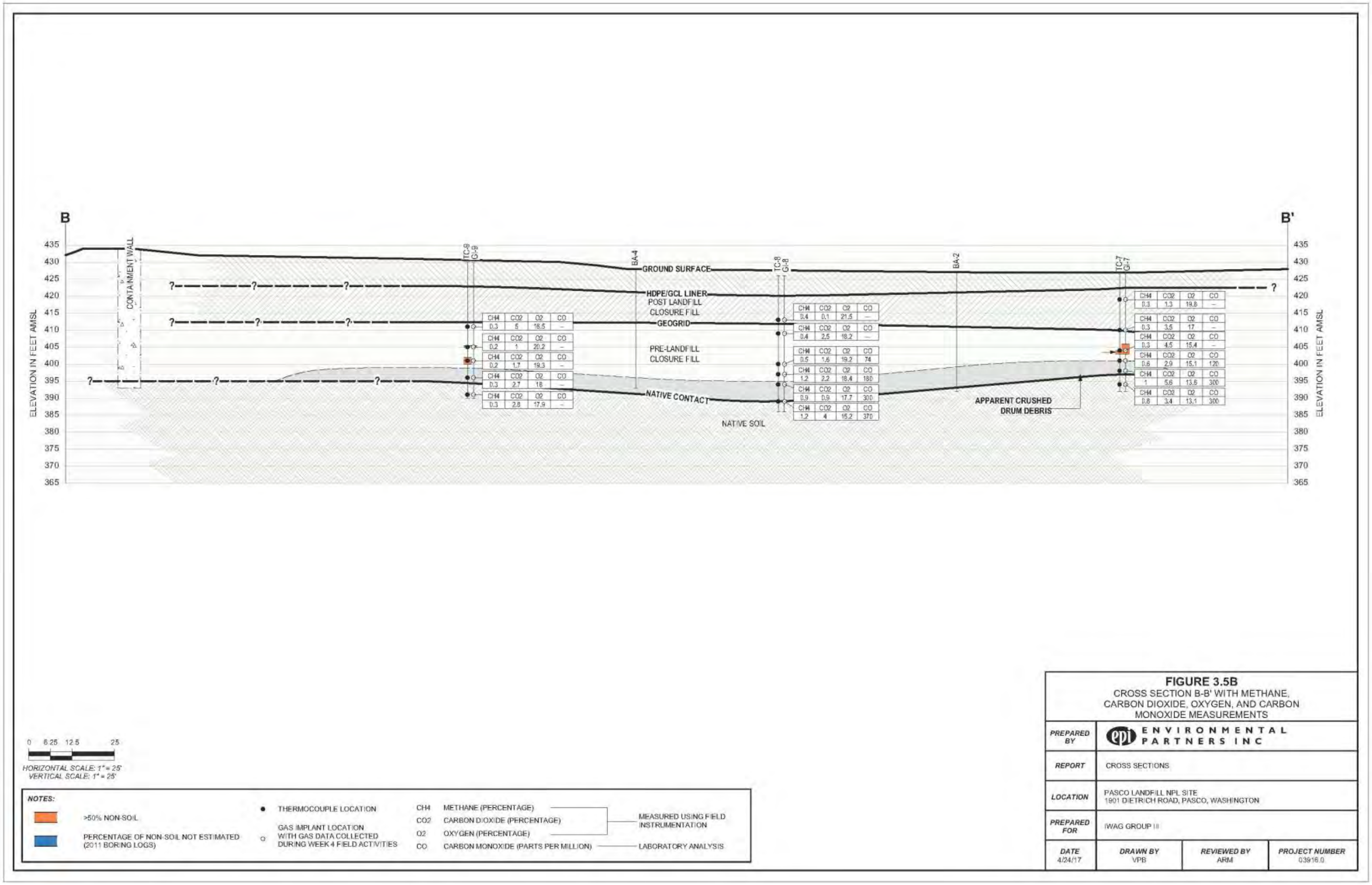
HORIZONTAL SCALE: 1" = 25'
VERTICAL SCALE: 1" = 25'

NOTES:

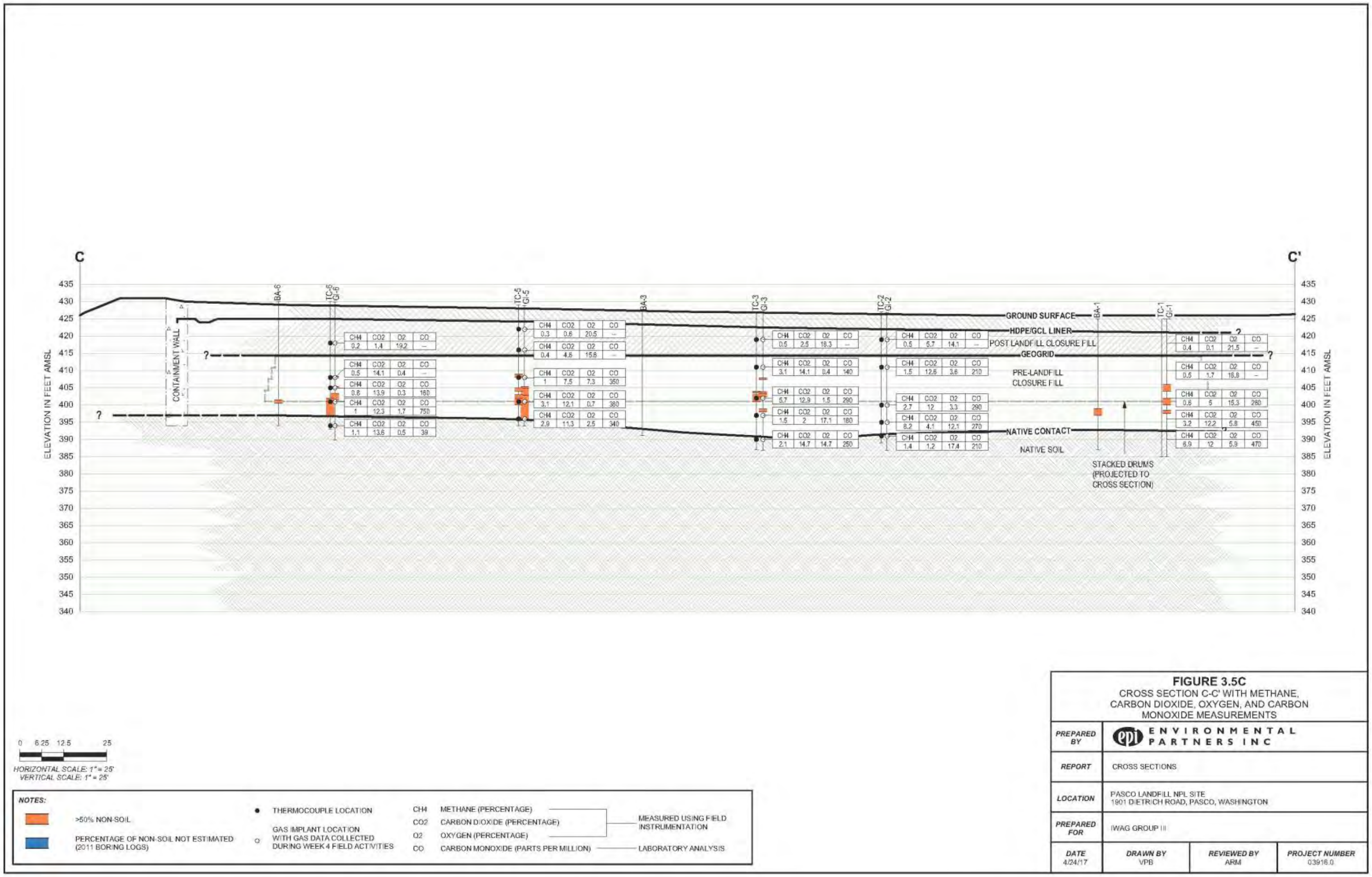
Orange	>50% NON-SOIL	●	THERMOCOUPLE LOCATION	CH4	METHANE (PERCENTAGE) — MEASURED USING FIELD INSTRUMENTATION
Blue	PERCENTAGE OF NON-SOIL NOT ESTIMATED (2011 BORING LOGS)	○	GAS IMPLANT LOCATION WITH GAS DATA COLLECTED DURING WEEK 4 FIELD ACTIVITIES	CO2	CARBON DIOXIDE (PERCENTAGE) — MEASURED USING FIELD INSTRUMENTATION
				O2	OXYGEN (PERCENTAGE) — MEASURED USING FIELD INSTRUMENTATION
				CO	CARBON MONOXIDE (PARTS PER MILLION) — LABORATORY ANALYSIS

FIGURE 3.5A
CROSS SECTION A-A' WITH METHANE, CARBON DIOXIDE, OXYGEN, AND CARBON MONOXIDE MEASUREMENTS

PREPARED BY	ENVIRONMENTAL PARTNERS INC		
REPORT	CROSS SECTIONS		
LOCATION	PASCO LANDFILL NPL SITE 1901 DIETRICH ROAD, PASCO, WASHINGTON		
PREPARED FOR	IWAG GROUP III		
DATE 4/24/17	*DRAWN BY* VPB	*REVIEWED BY* ARM	*PROJECT NUMBER* 03916.0



B
B'
ELEVATION IN FEET AMSL
435
430
425
420
415
410
405
400
395
390
385
380
375
370
365
CONTAINMENT WALL
TC-9 GI-9
BA-4
TC-8 GI-8
BA-2
TC-7 GI-7
GROUND SURFACE
HDPE/GCL LINER
POST LANDFILL CLOSURE FILL
GEOGRID
PRE-LANDFILL CLOSURE FILL
NATIVE CONTACT
NATIVE SOIL
APPARENT CRUSHED DRUM DEBRIS
CH4 CO2 O2 CO
0.3 5 18.5 –
CH4 CO2 O2 CO
0.2 1 20.2 –
CH4 CO2 O2 CO
0.2 1.7 19.3 –
CH4 CO2 O2 CO
0.3 2.7 18 –
CH4 CO2 O2 CO
0.3 2.8 17.9 –
CH4 CO2 O2 CO
0.4 0.1 21.5 –
CH4 CO2 O2 CO
0.4 2.5 18.2 –
CH4 CO2 O2 CO
0.5 1.6 19.2 74
CH4 CO2 O2 CO
1.2 2.2 18.4 180
CH4 CO2 O2 CO
0.9 0.9 17.7 300
CH4 CO2 O2 CO
1.2 4 15.2 370
CH4 CO2 O2 CO
0.3 1.3 19.8 –
CH4 CO2 O2 CO
0.3 3.5 17 –
CH4 CO2 O2 CO
0.3 4.5 15.4 –
CH4 CO2 O2 CO
0.6 2.9 15.1 120
CH4 CO2 O2 CO
1 5.6 13.6 300
CH4 CO2 O2 CO
0.8 3.4 13.1 300
0 6.25 12.5 25
HORIZONTAL SCALE: 1" = 25'
VERTICAL SCALE: 1" = 25'
NOTES:
>50% NON-SOIL
PERCENTAGE OF NON-SOIL NOT ESTIMATED (2011 BORING LOGS)
THERMOCOUPLE LOCATION
GAS IMPLANT LOCATION WITH GAS DATA COLLECTED DURING WEEK 4 FIELD ACTIVITIES
CH4 METHANE (PERCENTAGE)
CO2 CARBON DIOXIDE (PERCENTAGE)
O2 OXYGEN (PERCENTAGE)
MEASURED USING FIELD INSTRUMENTATION
CO CARBON MONOXIDE (PARTS PER MILLION)
LABORATORY ANALYSIS
FIGURE 3.5B
CROSS SECTION B-B' WITH METHANE, CARBON DIOXIDE, OXYGEN, AND CARBON MONOXIDE MEASUREMENTS
PREPARED BY
ENVIRONMENTAL PARTNERS INC
REPORT
CROSS SECTIONS
LOCATION
PASCO LANDFILL NPL SITE
1901 DIETRICH ROAD, PASCO, WASHINGTON
PREPARED FOR
IWAG GROUP III
DATE
4/24/17
DRAWN BY
VPB
REVIEWED BY
ARM
PROJECT NUMBER
03916.0


C
C'
ELEVATION IN FEET AMSL
435
430
425
420
415
410
405
400
395
390
385
380
375
370
365
360
355
350
345
340
CONTAINMENT WALL
BA-6
TC-6
GI-6
TC-5
GI-5
BA-3
TC-3
GI-3
TC-2
GI-2
BA-1
TC-1
GI-1
GROUND SURFACE
HDPE/GCL LINER
POST LANDFILL CLOSURE FILL
GEOGRID
PRE-LANDFILL CLOSURE FILL
NATIVE CONTACT
NATIVE SOIL
STACKED DRUMS (PROJECTED TO CROSS SECTION)
?
CH4 CO2 O2 CO / 0.2 1.4 19.2 –
CH4 CO2 O2 CO / 0.5 14.1 0.4 –
CH4 CO2 O2 CO / 0.8 13.9 0.3 160
CH4 CO2 O2 CO / 1 12.3 1.7 750
CH4 CO2 O2 CO / 1.1 13.6 0.5 39
CH4 CO2 O2 CO / 0.3 0.6 20.5 –
CH4 CO2 O2 CO / 0.4 4.6 15.6 –
CH4 CO2 O2 CO / 1 7.5 7.3 350
CH4 CO2 O2 CO / 3.1 12.1 0.7 380
CH4 CO2 O2 CO / 2.9 11.3 2.5 340
CH4 CO2 O2 CO / 0.5 2.5 18.3 –
CH4 CO2 O2 CO / 3.1 14.1 0.4 140
CH4 CO2 O2 CO / 5.7 12.9 1.5 290
CH4 CO2 O2 CO / 1.5 2 17.1 180
CH4 CO2 O2 CO / 2.1 14.7 14.7 250
CH4 CO2 O2 CO / 0.5 5.7 14.1 –
CH4 CO2 O2 CO / 1.5 12.6 3.6 210
CH4 CO2 O2 CO / 2.7 12 3.3 290
CH4 CO2 O2 CO / 8.2 4.1 12.1 270
CH4 CO2 O2 CO / 1.4 1.2 17.4 210
CH4 CO2 O2 CO / 0.4 0.1 21.5 –
CH4 CO2 O2 CO / 0.5 1.7 18.8 –
CH4 CO2 O2 CO / 0.6 5 15.3 260
CH4 CO2 O2 CO / 3.2 12.2 5.8 450
CH4 CO2 O2 CO / 6.9 12 5.9 470
0 6.25 12.5 25
HORIZONTAL SCALE: 1" = 25'
VERTICAL SCALE: 1" = 25'
NOTES:
>50% NON-SOIL
PERCENTAGE OF NON-SOIL NOT ESTIMATED (2011 BORING LOGS)
THERMOCOUPLE LOCATION
GAS IMPLANT LOCATION WITH GAS DATA COLLECTED DURING WEEK 4 FIELD ACTIVITIES
CH4 METHANE (PERCENTAGE)
CO2 CARBON DIOXIDE (PERCENTAGE)
O2 OXYGEN (PERCENTAGE)
CO CARBON MONOXIDE (PARTS PER MILLION)
MEASURED USING FIELD INSTRUMENTATION
LABORATORY ANALYSIS
FIGURE 3.5C
CROSS SECTION C-C' WITH METHANE, CARBON DIOXIDE, OXYGEN, AND CARBON MONOXIDE MEASUREMENTS
PREPARED BY
ENVIRONMENTAL PARTNERS INC
REPORT
CROSS SECTIONS
LOCATION
PASCO LANDFILL NPL SITE
1901 DIETRICH ROAD, PASCO, WASHINGTON
PREPARED FOR
IWAG GROUP III
DATE 4/24/17
DRAWN BY VPB
REVIEWED BY ARM
PROJECT NUMBER 03916.0

4.0 VISUAL OBSERVATION OF SMOKE

Smoke was not observed in any of the borings. Steam, however, was observed in all the borings beginning at depths as shallow as 8 feet below ground surface (bgs). Smoke tends to "hang" in the air since the ash, soot, and other small particles are suspended. Steam, on the other hand, will dissipate rapidly because it is water vapor that becomes part of the surrounding air. Temperatures within the large diameter borings were not observed in excess of 130 °F, based on the temperature of the material recovered from the boring. In addition to the relatively low temperatures observed, no burning material or embers were recovered from the borings. These materials would have been evident by the presence of flames, smoke, or glowing, even on a windy day. A summary of the subsurface conditions and a description of the materials encountered in the large diameter borings are described in boring logs presented in Appendix C.

Key Points Specific to the Visual Indication of Combustion

- During the drilling process smoke was not observed in any of the borings. Due to the relatively low ambient temperature as compared to the temperature of recovered materials, and the moisture content of the recovered materials, steam was present in each boring as shallow as 8 feet bgs. No signs of ongoing subsurface combustion were identified, including soil temperatures in excess of 170°F, flames, or embers.
- Dark and/or blackened recovered materials were observed in two of the six borings, BA-2 and BA-4. The recovered materials with darker color were primarily wood debris and soils mixtures with minor refuse content. However, it is not possible to determine if the darkened or blacked color is from combustion within the landfill during or immediately after initial disposal, if the color occurred prior to disposal, or from decomposition within the waste mass. It should be noted that Zone A area was operated as a burn trench prior to the early 1970s. The damp nature of the dark and blackened materials, lack of elevated temperatures and/or lack of smoke, flames, or embers indicates that the color is likely from decomposition or prior combustion.

5.0 IN SITU SOIL TEMPERATURES

5.1 Continuous Subsurface Temperature Measurements

For this project the key criteria for temperature measurements was the ability to discern actual combustion; i.e., temperatures of several hundred ºF; and determine if temperatures exceed two key benchmarks: 1) the expected upper level of biological activity (around 176 ºF, Jafari et al., 2017a) and 2) the lower temperature associated with potential combustion (> ~350 ºF, Moqbel et al., 2010). Thermocouples are commonly used instruments to measure temperature signals and have been applied at several sites to measure subsurface temperatures (e.g., ThermalNSZD.com; Jafari et al. 2017a, 2017b).

Continuous subsurface temperature measurements were collected during the period of January 25 through March 2, 2017 and then for six days in late March/early April. Type T thermocouples were installed at various depths at nine different locations throughout Zone A. Insulated with braided 304 or 316 SS for protection from corrosion, the thermocouples had a temperature measurement range of -454 to 700 ºF, with an accuracy of +/-1.0 ºC.

Temperatures were continuously recorded on an hourly basis using one datalogger per thermocouple (Lascar Electronics; model EL-USB-TC). Data loggers were housed in weatherproof protective enclosures throughout the duration of the investigation.

There were three factors that complicated the temperature data collecting and analysis:

- **Factor 1 – Datalogger Spikes:** When the data loggers were pulled from the enclosures for downloading, they would warm up to near room temperature. Because of the design of the dataloggers, short-term temperature spikes results (see Appendix D). For the data analysis in this report, the obvious spikes in the hours after reinstalling the data loggers were removed.
- **Factor 2 - Type K Extensions:** It is common practice to attach thermocouple wire extensions to extend the length of the original thermocouple wire that was purchased. For this project, incorrect extensions were used at several locations, resulting in invalid data for TC2-16, TC2-27, and TC6-29 locations (see Appendix D). The incorrect data are shown as faded lines in the figures below and in Appendix D but were not used in the temperature analysis. After the Main Test, two of the bad extensions were replaced, allowing temperature data to be collected from TC2-27 and TC2-29.
- **Factor 3 - Dataloggers Programmed to Read Type K Thermocouples.** Dataloggers from the 2014 Balefill study were reused for this study, but were not reprogrammed for the different thermocouple type (Type K for the Balefill study, Type T for this study). Data from the manufacturer and a short test (“Six Day”) test after the main test confirmed the error caused by the datalogger programming was very small.

For consistency, all of the temperature data in this section is presented as uncorrected data using the original Type K datalogger setting and likely overestimate actual temperatures slightly on average by 1 ºF. In summary, the following Table 5.1 describes the thermocouple data collection efforts, complicating factors, and resulting impact on data analysis.

Table 5.1. Summary of Data Collection Efforts and Complicating Factors

Data Collection Effort	Time Period	Complicating Factors and Correction Methods	Resulting Impact on Data Analysis
Main Test	Jan. 25 – Mar. 3, 2017	Complicating Factors: 1. Datalogger spikes 2. Type K extensions 3. Dataloggers programmed to read Type K thermocouples	Data from TC2-16, TC2-27, and TC6-29 were not used.
Six Day Test	Mar. 30 – April 2, 2017	All Type K extensions removed except for TC2-16 prior to Six Day Test Dataloggers reprogrammed to read Type T thermocouples in second-half of Six Day Test	Data for TC2-27, and TC6-29 from the first three days of the test were used in this report. Data from TC2-16 not shown. Test confirmed that: i) datalogger programming had small impact on results from Main Test, so no changes to data were made; and ii) Type K extensions used from Phase 2 of the Balefill Area project provided reliable data, so no changes were made.

5.2 Understanding the Seasonal Temperature Signal

To help explain the observed temperature record, a simple seasonal soil temperature model (Hillel, 1982) was applied to the Zone A dataset in order to understand naturally occurring subsurface temperatures at various depths over time:

$$T(z,t) = T_a + A_o e^{-z/d} \sin\left[\frac{2\pi(t - t_o)}{365} - \frac{z}{d} - \frac{\pi}{2}\right]$$

In this model,

- T **(**z, t**)** is the soil temperature at time t (days from the start of the year) and depth z(m),
- T_a is the average soil temperature (◦C),
- A_0 is the annual amplitude of the surface soil temperature (i.e., the difference between the maximum and minimum surface soil temperature, ◦C),
- d is the damping depth (m) of annual fluctuation, and
- t_0 is the time lag (days) from the start of the year to the occurrence of the minimum temperature in a year.
- A flat ground surface, uniform soils, and average seasonal weather conditions are assumed.

The damping depth is given by $d = (2D_h/w)^{0.5}$, where D_h is the thermal diffusivity of the soil and w, the frequency of the temperature variation, is $2\pi/365\ d^{-1}$.

As shown in Figure 5.1, the seasonal temperature changes will affect subsurface soil temperatures this way:

- For soils at 8-foot depth, temperatures fall in January through March, then increase through September. A temperature increase of over 25 ºF may be observed.
- For soils at 12-foot depth, the temperature effect is smaller and lagged. An increase in temperature from April to late September of 25 ºF may be observed.

- For soils at 25 and 30 ft depth, the seasonal temperature effect is much smaller, only a few degrees. Because of the time it takes the heat to get to these depths, the maximum soil temperature is expected in the winter, and the minimum occurs in the summer.

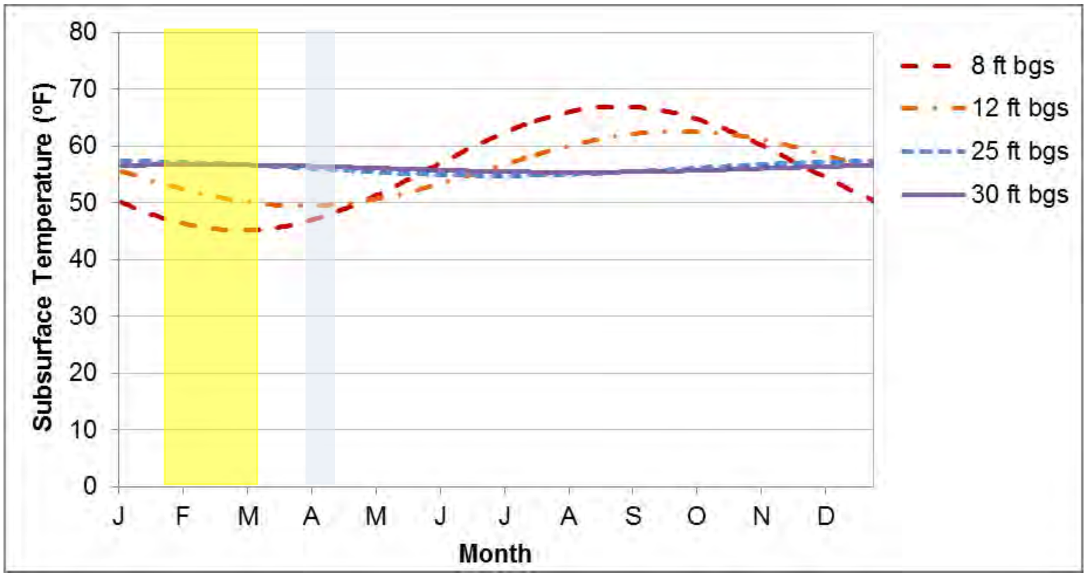


Figure 5.1. *The theoretical naturally occurring change in seasonal temperatures in the soils in Pasco Washington vs. depth. Yellow shows the time period for the primary data collection, January 25 to March 2, 2017 and blue the six-day text from March 30 to April 5, 2017. Shallow soil temperatures should fall in February and start to increase in late March / early April. Little seasonal change (just a few degrees) with a lag is expected in deep soil temperatures (25 and 30 ft bgs). Additionally, a time lag in the subsurface temperature signal exists with the deeper depths in which timing of high/low temperatures are shifted as compared to shallow depths.*

The soil temperature seasonal effects shown in Figure 5.1 were generated assuming generic, uniform soil conditions without any subsurface heating, surface cap, or other factors specific to Zone A. The magnitude and timing of the seasonal pattern will differ somewhat in Zone A.

5.3 Temperature Results

The maximum subsurface temperatures during the January 25 – March 2, 2017 time period at any location was 158.5 ºF, with 160 ºF observed in the subsequent six-day test in early April. The minimum temperature was 87.5 ºF (Table 5.2). Because the error was very small (average of +1ºF or +0.8% overestimate of the temperature; see Section 3.6 and Appendix B), the temperatures in this report were not adjusted to account for the datalogger being set for the incorrect thermocouple type (see Factor 3 above).

Figure 5.2 shows the temperature vs. time plot for the main test at the warmest location, TC-3 annotated with some explanatory notes. Temperature plots for all the locations are shown in Appendix D. The data for the three thermocouples with bad wire extensions are shown on the graph, but with faded lines to indicate these data are not reliable.

Table 5.2. *Summary of subsurface temperatures at each main test location. See Appendix D for results from the six-day test. Temperatures are uncorrected for data logger program setting; temperatures are on average 1 ºF too high.*

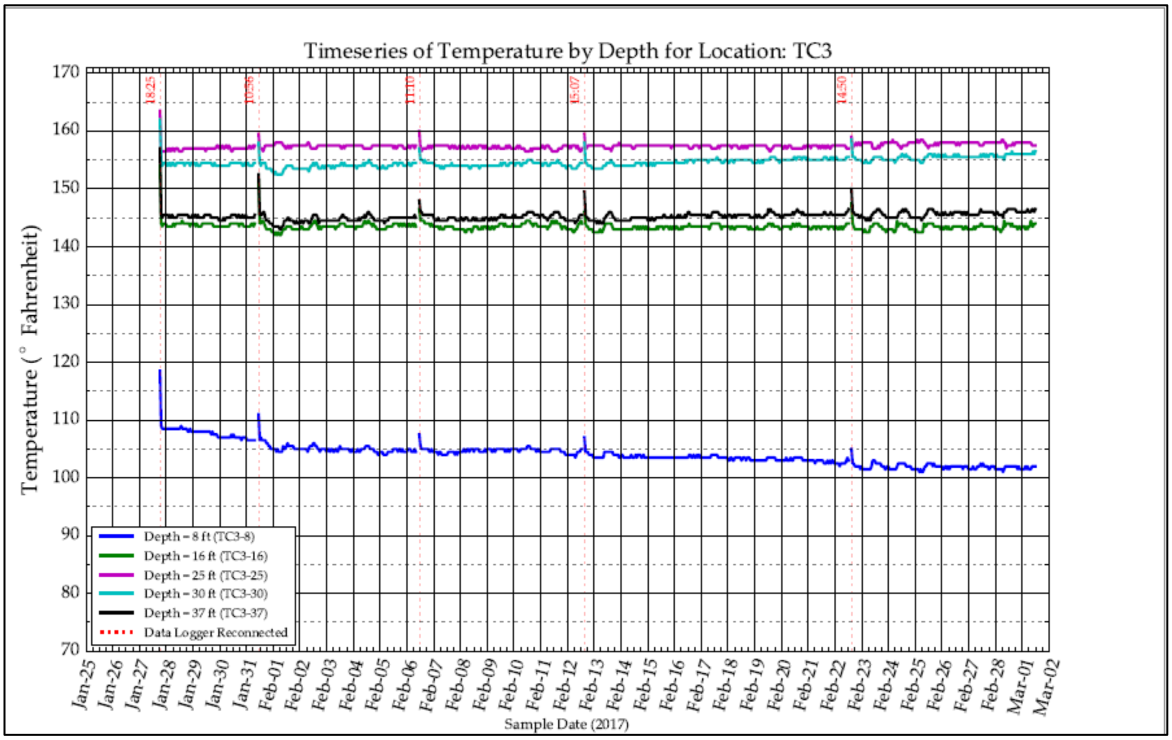
Location	Depth (ft bgs)	Temp. Minimum (ºF)	Temp. Maximum (ºF)	Average (ºF)
TC1	7	88	95	90
	14	128	131	130
	24	153	157	155
	29	151	154	153
	35	145	148	147
TC2	8	106	111	108
	16*	--	--	--
	27*	152	154	153
	32	148	152	150
	36	143	146	145
TC3	8	85	109	104
	16	142	145	143
	25	157	159	157
	30	153	157	155
	37	143	147	145
TC4	9	92	98	94
	14	110	113	111
	19	104	123	121
	24	122	125	124
	30	119	124	122
TC5	7	96	103	98
	12	127	131	129
	21	141	143	142
	28	147	150	149
	33	149	151	150
TC6	12	104	110	107
	22	140	144	142
	25	146	150	148
	29*	152	153	152
	36	141	143	142
TC7	8	77	88	82
	17	106	109	107
	23	120	123	122
	26	126	129	127
	29	118	132	130
	33	131	135	133
TC8	13	101	106	103
	17	116	119	117
	26	136	139	138
	29	138	141	140
	32	138	141	140
	37	134	137	136
TC9	19	108	110	109
	25	115	119	117
	29	122	124	123
	34	127	129	128
	39	124	126	125

:

1. (*) At TC2-16, data was invalid due to the different thermocouple extension type, and was excluded from figure (Factor 2). Data from the six-day validation test was used for TC2-27 and TC6-29 due to incorrect data during the Main Test (Factor 2).

2. (**) These thermocouples had Type K extensions from Phase 2 of the Balefill Area project, but exhibited no diurnal variations in the signal and subsequent analysis from the Six Day Test showed that this type of extension provided reliable data.

3. Results exclude temperatures from datalogger spikes in the hours after reinstalling dataloggers (see Factor 1).



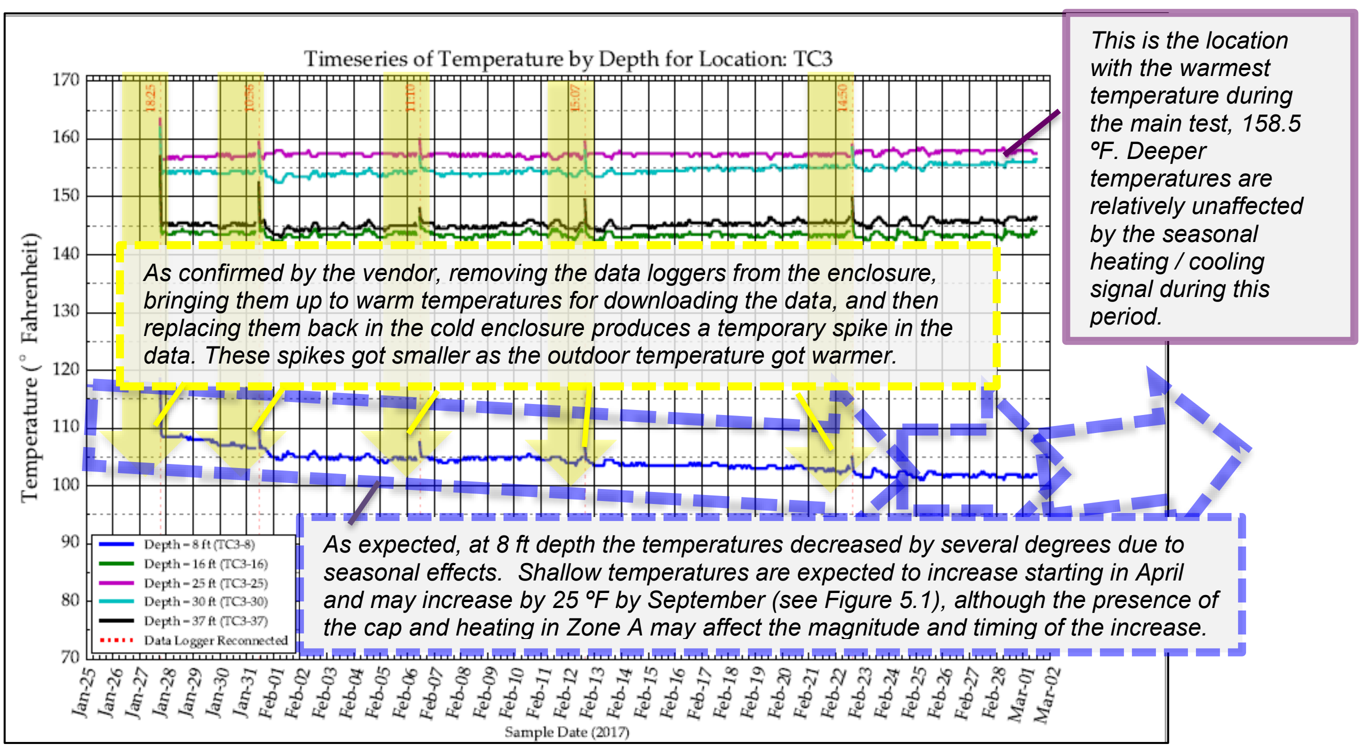


Figure 5.2. *Top: In-situ soil temperatures at location TC3. Bottom: Same graph but with annotations explaining some key points regarding the temperature data: spikes were created by datalogger downloading (yellow); seasonal temperature effects are seen in the shallow thermocouples (blue); and 3) the warmest temperature during the main test was 158.5 °F (purple).*

Figures 5.3 and 5.4 show a side-by comparison of subsurface temperatures for all locations, with Figure 5.3 showing exact depths, and Figure 5.4 showing the depth interval. Key results are:

- The highest subsurface temperatures are at Location TC3 and the lowest are at TC4. Temperatures in cross section B'-B (random drum area) are lower than cross section C'-C (between the random drum and stacked drum areas).
- The expected declining seasonal soil temperature signal is seen in the data for the shallowest thermocouples (blue and black lines on Figures 5.3 and 5.4, respectively). The deepest thermocouples do not show a strong seasonal signal.
- TC4-19 thermocouple signal (purple line) was lost near the end of the record.
- A slowly increasing temperature trend is observed at several locations over the 33-day period, such as TC-3, TC-6 and TC-7. These data are discussed in more detail below.

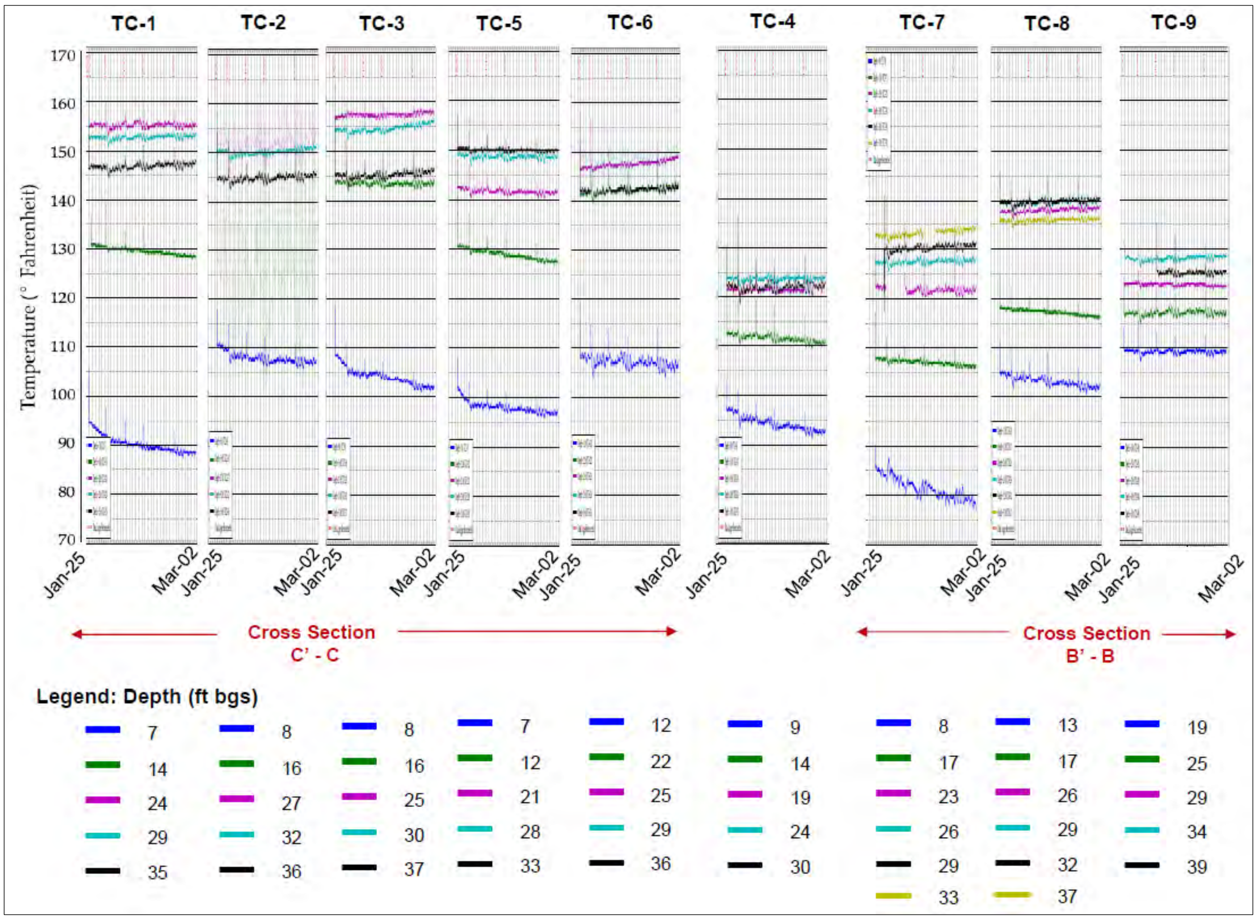


Figure 5.3. *Comparison of subsurface temperatures at all locations with unique depths per location. Data from TC2-16, TC2-27, and TC6-29 are shown as faded lines, but those data are unreliable due to use of incorrect wire extensions (Factor 2 above).*

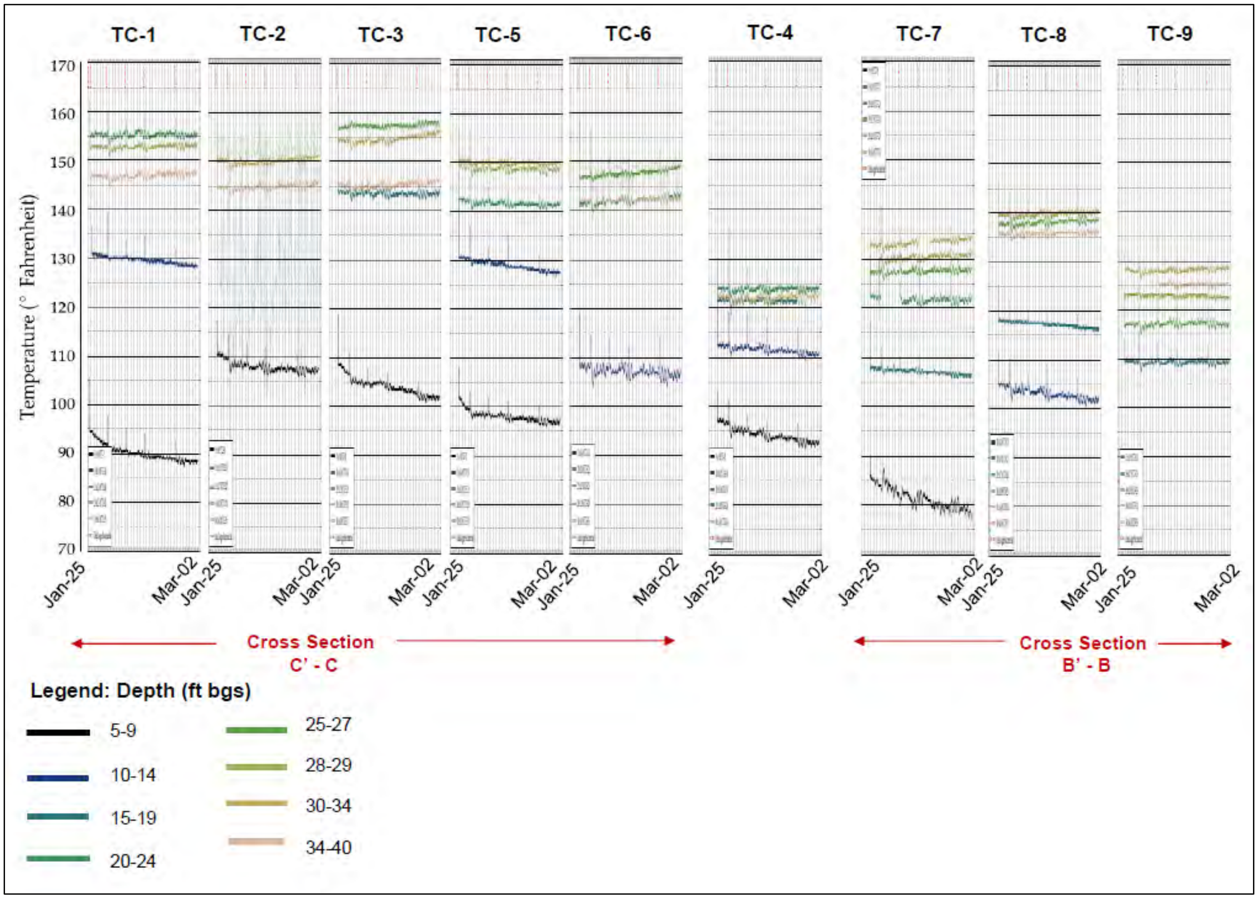


Figure 5.4. *Comparison of subsurface temperatures at all locations with similar depth ranges per location. Data from TC2-16, TC2-27, and TC6-29 are shown as faded lines, but those data are unreliable due to initial use of incorrect wire extensions (Factor 2).*

The temperature increase at TC6-25 increased slightly from about 147 to 149 ºF during the main test (Jan. 25 to March 2, 2017. At the end of the subsequent Six Day test, the temperature was 152 ºF on April 2, 2017. GSI's experience with evaluating background-corrected temperatures at SVE systems shows that 5 ºF changes in shallow soil temperature can occur by changing SVE operations over time, so this level of increases in Zone A may be associated with changes in the SVE extraction rate over the past year at the site combined with the slow travel time (months) for a heat signal to move through soils. For example, the flowrate in VEW-6D increased from about 173 SCFM to 202 SCFM on Feb. 21, 2017. An earlier increase in mid-2016 might also be contributing to this signal.

Note the oxygen measurements in the TC6-25 location were very low (0.2%) which is likely too low to support any type of combustion, even smoldering combustion, supporting the conclusion that combustion is not causing this small increase).

Another contributing factor may be the elevated configuration of Zone A which might produce different seasonal heating signals compared to the theoretical pattern shown in Figure 5.1. Overall, the absolute temperatures in the locations with increasing temperatures are all below the temperatures expected from actual smoldering combustion events, as shown in Figure 5.5 from the 2014 Balefill temperature monitoring program.

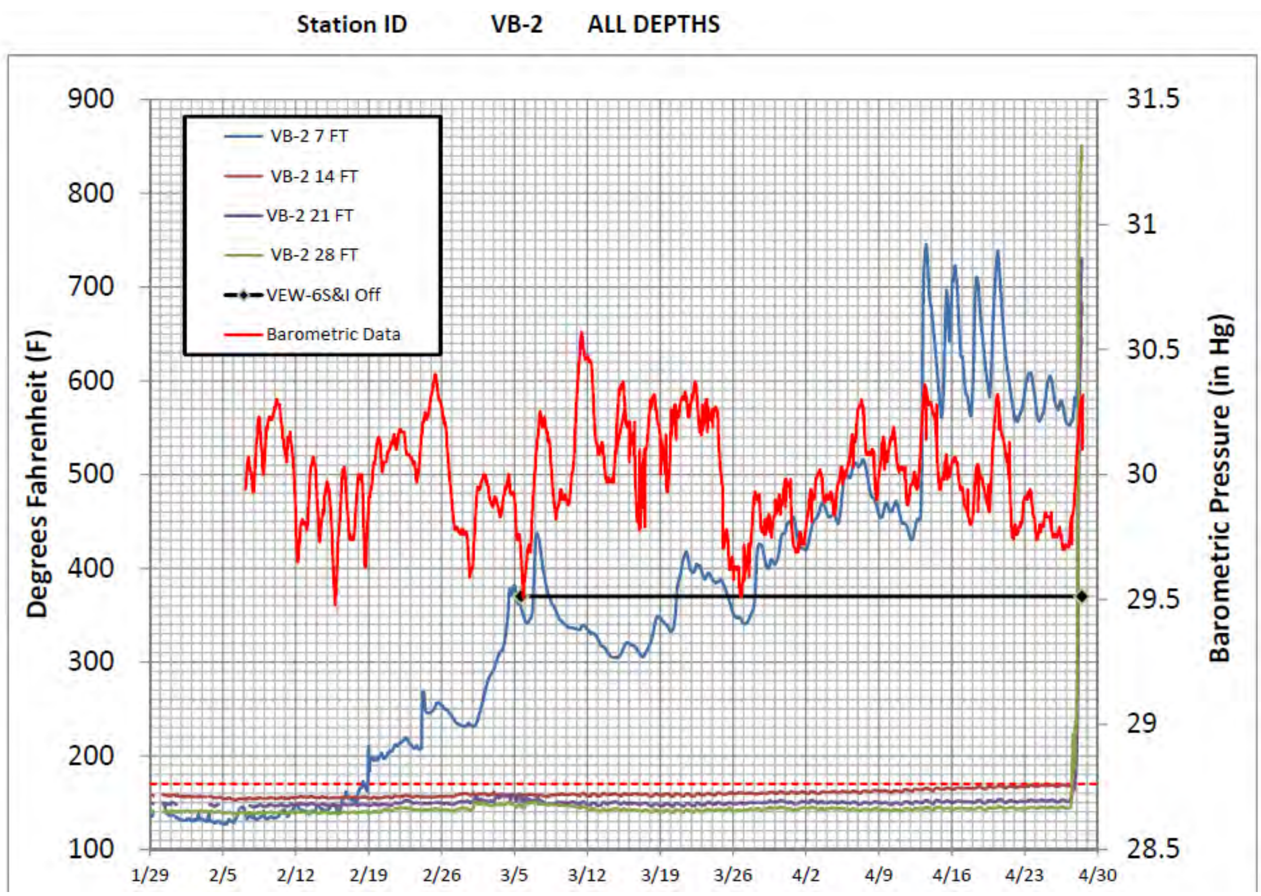


Figure 5.5. *Example temperature time series plot of subsurface combustion in Balefill Area in 2014.*

Figure 5.6 shows the average temperature profile over the Main Test vs. elevation; see also the temperature cross section Figures 3a, 3b, and 3c. At most of the locations, the highest temperatures are located in the 395 to 405 ft AMSL elevations, comprised of fill immediately above the native soil and corresponding to the likely zones with the highest organic contamination in soil and most likely heating zones. The thickness of the mixed debris did not seem to correlate to elevated subsurface temperatures; two locations with the most mixed debris (TC4 and TC5) had lower temperatures than adjacent thermocouple locations. Locations TC5 and TC6 had more mixed debris than TC3, but TC3 had the highest temperature. But as shown in Figure 5.6, none of the temperatures are in the range that indicates the potential for combustion.

Overall, the maximum temperatures seen in Zone A (158.5 ºF during the Main Test and 160 ºF during the Six-Day test) are not indicative of combustion in Zone A. (Note these are uncorrected temperatures; with the Type-T datalogger correction the maximum temperature was 157.5 ºF during the Six Day test). FEMA recommends 170 ºF as the threshold for in-situ soil temperature data. Jafari et al., (2017a) state that for determining different type of elevated temperature landfill conditions, *"Subsurface temperatures are the most accurate because they illustrate the dimensions and migration with time and can corroborate gas compositions"* and then recommends 80 ºC (176 ºF) plus carbon monoxide concentrations > 1500 ppmv to confirm the presence of a smoldering front. None of the locations observed in Zone A have reached either threshold.

Key Points Specific to Temperature
• Overall, the maximum temperatures seen in Zone A (159 ºF during the main test, 160 ºF during the six-day test) are within the range of temperature associated with biological activity (<176 ºF), are far below the lowest temperature associated with the onset of combustion (~392 ºF), and therefore are not indicative of combustion in Zone A. • Temperatures do not appear to have any relationship to the presence of the thickness of the mixed debris layer. • Soil temperatures decreased at all the shallow locations due to seasonal heating/cooling effects. • Soil temperatures at a few deeper locations, for example, TC6-25 and TC7-33 increased by about 5 ºF from January to April, 2017. The highest temperature location, TC3-25, showed a 1.5 ºF increase between March 2 and April 5. This may be related to changes in the SVE system in Zone A. Non-seasonal fluctuations of this magnitude have been observed in other SVE systems where operations have changed over time, and do not suggest nearby combustion.

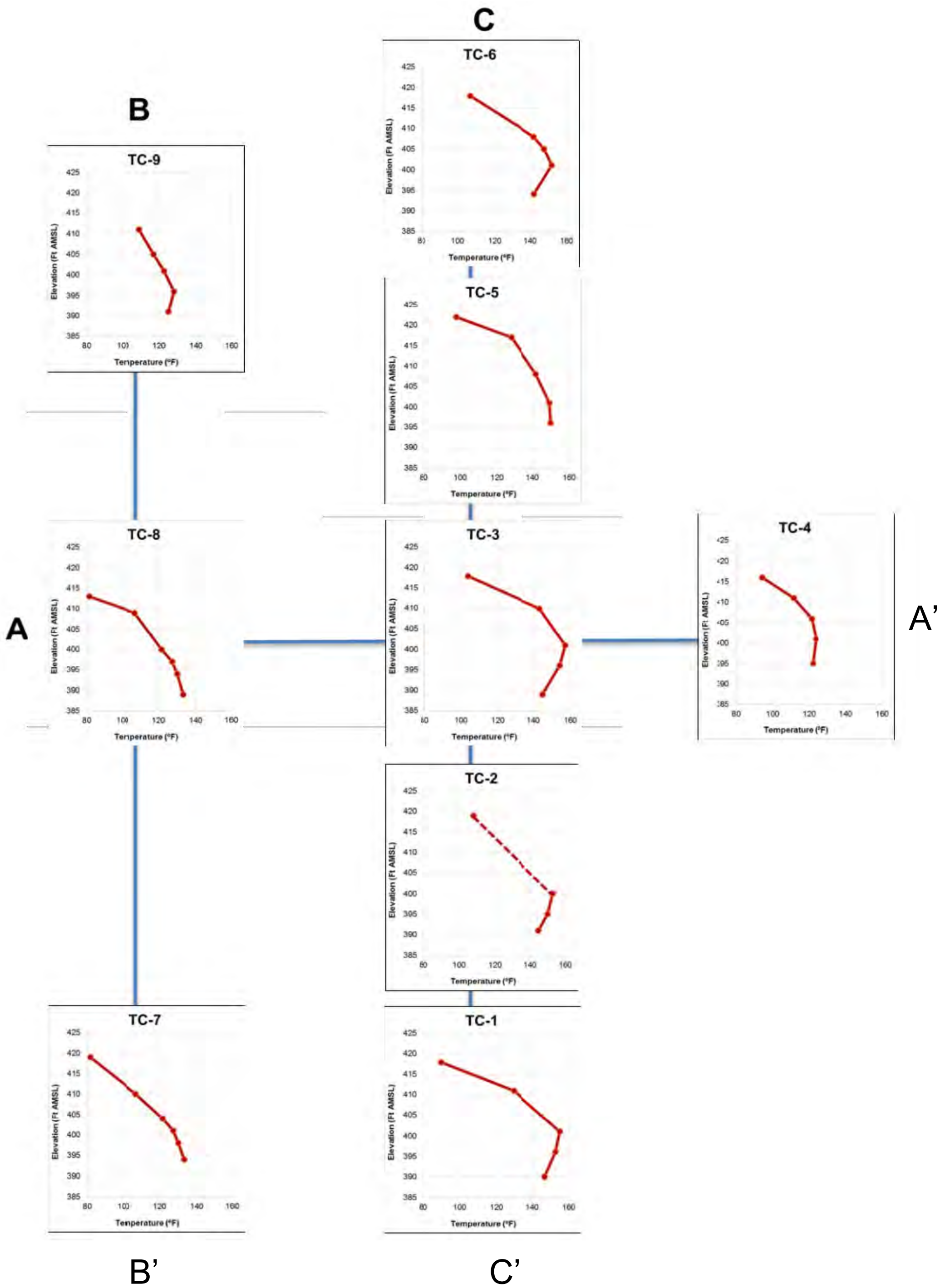


Figure 5.6. *Main test average temperature depth profiles arranged schematically along cross-sections in Zone A (see Figure 3.1)*

Notes: 1. Data from subsurface temperatures from February 28, 2017 (Week 4) depicted at all locations except TC-4, which includes February 22, 2017 (Week 3).
2. At TC-2, the thermocouple at 16 ft bgs depth had invalid data due to the different thermocouple extension type, and was excluded from figure. Data from the six-day validation test was used for TC2-27 and TC6-29.

6.0 CARBON MONOXIDE CONCENTRATIONS

6.1 Carbon Monoxide from Soil Gas Measurements

Measurements of carbon monoxide in soil gas were first conducted in the field using a meter. Laboratory samples were then collected and analyzed from these locations with a field meter reading greater than ~100 ppmv in order to focus the laboratory resources on only the high concentration samples. Results from the laboratory analysis program are shown in Table 6.1. All soil gas data in included as Appendix G.

As reported by field personnel, several sampling issues suggest that the first event (Feb. 7, 2017) and the second event (Feb. 14, 2017) may have data quality issues.

- *First Soil Gas Sampling Event:* Very cold weather conditions. Several of the soil gas connectors were frozen and condensate froze in some lines during sample collection. Eight of the 47 oxygen concentrations were significantly different (e.g., 0% vs. 15% oxygen) than the Week 3 and 4 sample events.
- *Second Soil Gas Sampling Event:* These samples collected at the same time that bucket auger drilling was being performed which may have affected some locations. As required by the health and safety plan, the SVE system was operating at this time which had the potential to draw atmospheric air into the subsurface through the open bucket auger borings. The bucket borings were proximal to several of the probe locations. Some unusual oxygen readings, both high and low, were observed. More importantly, ten lab CO readings were unexpectedly below detection limits.

Because of the above factors, most of the soil gas data analysis in this report relies on the third and fourth sample events, which experienced no field problems and no drilling related issues. However, because the high CO concentration was found during the first sampling event (Feb. 7, 2017), the data from three events (first, third and fourth) were included in data analysis that involved CO.

Locations GI4 and GI9 did not have any field measurements with CO > ~100 ppmv, therefore, no samples for laboratory analysis were collected.

The highest CO value from the combustion evaluation field program was 950 ppmv at location GI2-32 during the first sampling event. However, subsequent samples were much lower: 290 and 270 ppmv, respectively, for the third and fourth sampling events. To be conservative, however, the first sample event was retained in all CO analysis for this report. This is the same location where slightly increasing temperatures were observed (see Section 5.3).

Table 6.1. *Laboratory CO measurements for Feb. 7, 22, and 28, 2017. Samples were only collected from locations with field CO measurements > ~100 ppmv. Because of sample collection concerns, results from 2/14/17 are not shown.*

	First Event 2/7/17 Lab CO (ppmV)	Third Event 2/22/17 Lab CO (ppmV)	Fourth Event 2/28/17 Lab CO (ppmV)	Average of All Three Events (ppmv)
GI1-24	11	330	260	*200*
GI1-29	11	440	450	*300*
GI1-35	93	490	470	*351*
GI2-16	270	180	210	*220*
GI2-27	400	300	290	*330*
GI2-32	**930**	290	270	*497*
GI2-36	750	190	210	*383*
GI3-16	78	120	140	*113*
GI3-25	250	270	290	*270*
GI3-30	440	230	180	*283*
GI3-37	580	340	250	*390*
GI5-21	250	240	350	*280*
GI5-28	230	230	380	*280*
GI5-33	210	220	340	*257*
GI6-25	230	160	160	*183*
GI6-29	700	**780**	**750**	***743***
GI6-36	18	42	39	*33*
GI7-26	80	120	120	*107*
GI7-29	200	340	300	*280*
GI7-33	250	270	300	*273*
GI8-26	95	81	74	*83*
GI8-29	57	200	180	*146*
GI8-32	150	300	300	*250*
GI8-37	380	400	370	*383*

6.2 Relationship Between CO and Other Parameters

The relationship between laboratory CO and temperature is shown in Figure 6.1. The highest CO values did not correspond to the locations with the highest temperatures.

Figure 6.2 shows the relationship between CO and oxygen. The highest CO levels are in low oxygen zones, but below the 3% oxygen level which can support smoldering combustion (US Navy, 1998).

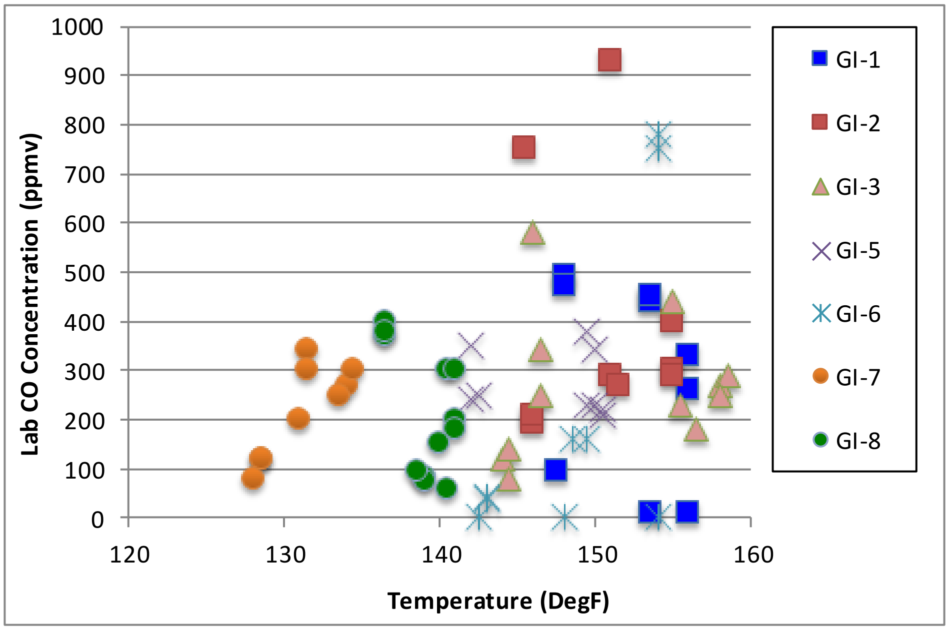


Figure 6.1. *Relationship between laboratory CO concentrations and temperature at locations with laboratory CO measurements (other locations did not have meter CO concentrations > 100 ppmv). Data is from the first, third, and fourth sampling events that had reliable CO data. Two locations used temperatures from the Six Day test because of extension issues. See Appendix G for soil gas data.*

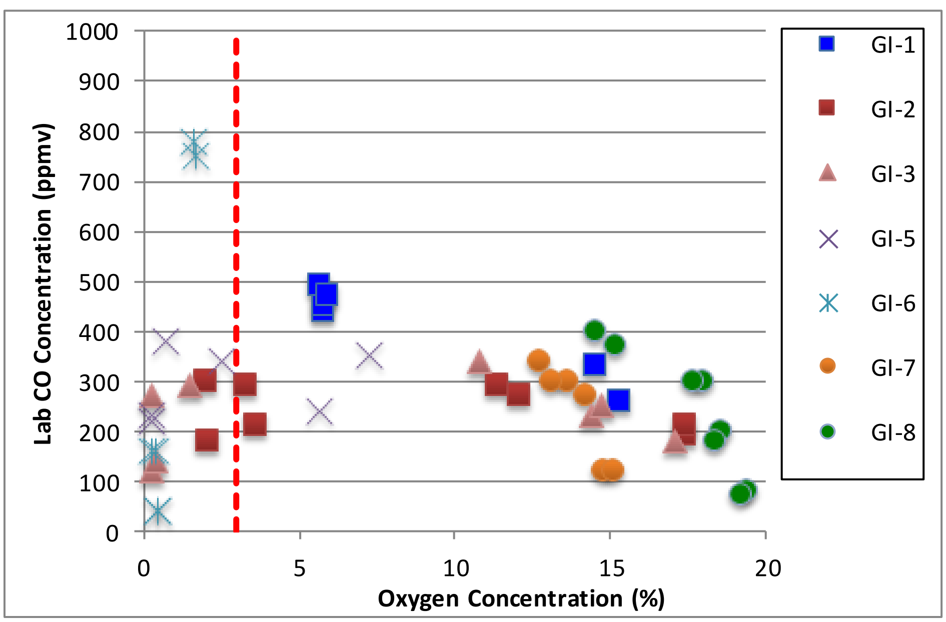


Figure 6.2. *Relationship between laboratory CO and oxygen concentration at locations with laboratory CO measurements (other locations did not have meter CO concentrations > 100 ppmv). Data is from the third and fourth sampling events that had reliable soil gas data (the first sampling event did not have reliable soil gas data and, therefore, the CO data from that event are not shown. The highest CO is located in low oxygen areas below the Minimum Oxygen Concentration (MOC) that can support smoldering combustion. See Appendix G for soil gas data.*

Figure 6.3 shows the CO/CO_2 ratio vs. temperature. In general, smoldering alone produces much higher CO/CO_2 ratios (e.g., > 0.2, Tsuchiya, 1994; Malow and Krause, 2008) than is observed in Zone A.

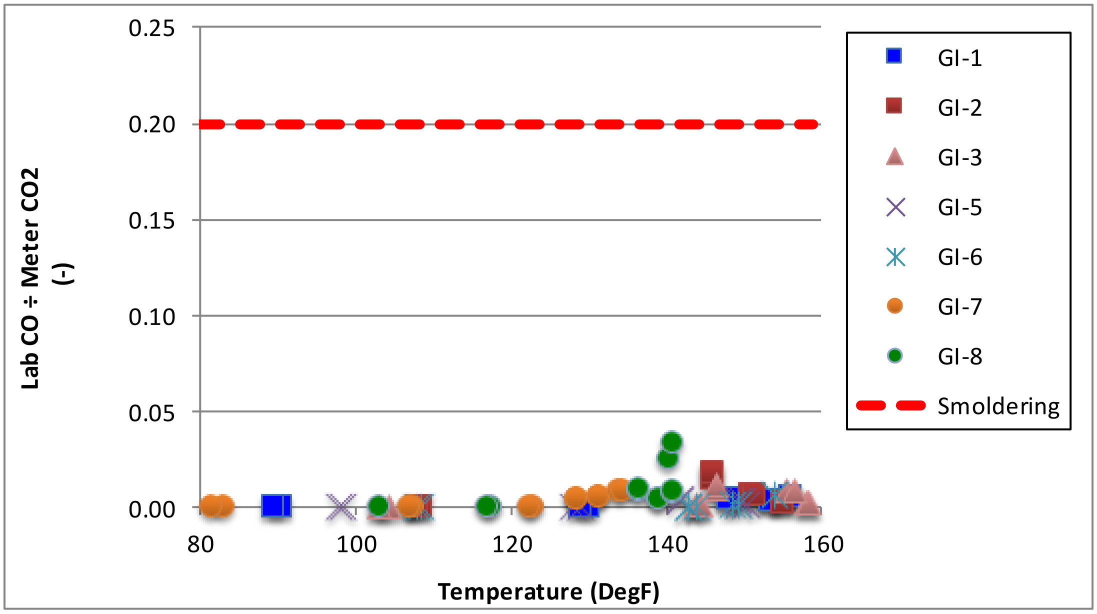


Figure 6.3. *CO/CO_2 ratio vs. temperature at locations with laboratory CO measurements (other locations did not have meter CO concentrations > 100 ppmv). Data is from the third and fourth sampling events that had reliable soil gas data. The highest CO/CO_2 ratios are not correlated to the highest temperatures, and are much lower than the CO/CO_2 ratios seen for smoldering-only systems. See Appendix G for soil gas data*.

Although not definitive alone, these CO relationships support the conclusion that combustion is not occurring in Zone A.

6.3 Why did the Carbon Monoxide Increase in Intermediate Zone SVE Wells?

While the soil gas sampling points show a maximum laboratory CO of 930 ppmv (at location GI2-32), the two SVE wells screened in the intermediate zone exhibit higher concentrations, up to 1400 ppmv, with an increasing trend after Sept. 2016 (see Figure 6.4).

The scientific literature has several examples where non-combustion processes result in high (>1000 ppmv) CO concentrations. Haarstad et al. (2006) cite "suboptimal conditions" during biodegradation, such as:

1. Change from Aerobic to Anaerobic Conditions: Low oxygen levels during aerobic composting. In their laboratory experiments, they were able to generate CO concentrations of 2000 ppmv without any combustion by changing a formerly aerobic process to a deeply anaerobic process.
2. Change from Anaerobic to Aerobic Conditions: Low CH_4 production during anaerobic degradation, where the portion of the microbial community that converts fermentation products to methane stops performing (high temperature, slightly aerobic conditions), resulting in accumulation of carbon monoxide and hydrogen gas.

They wrote:

> *"[t]he most important factor to counteract CO production during biological waste treatment seems to be to avoid rapid declines in oxygen levels in the waste, for example, by ensuring adequate aeration."*
>
> *"The CO concentrations measured during anaerobic conditions varied from 0 to 3000 ppm."*
>
> *"CO is produced in concentrations ≤6000 ppm by sulfate-reducing bacteria, with substrates such as lactate, pyruvate, formiate, hydrogen, and sulfate."*

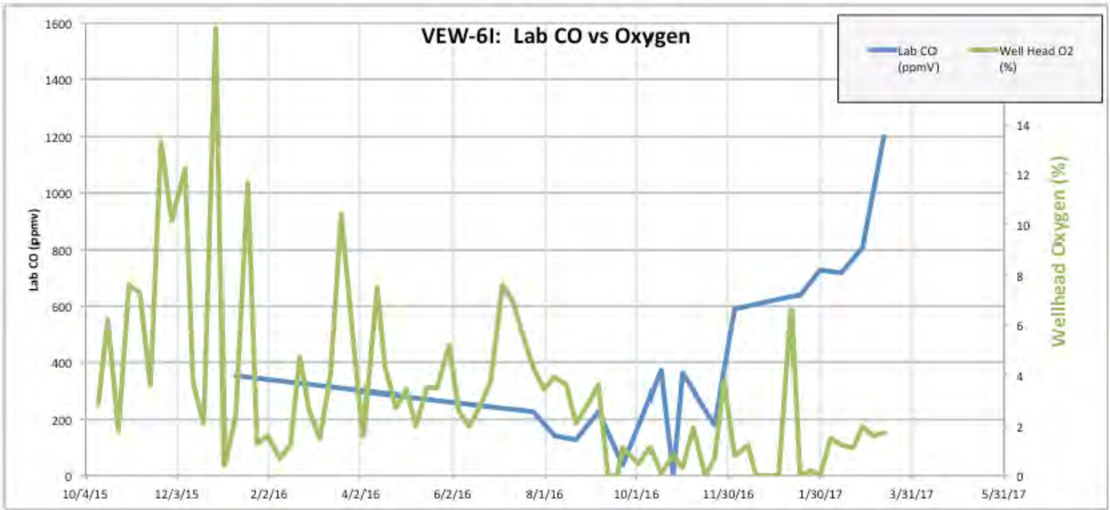
Powell et al. (2006) performed a full-scale experiment similar to Haarstad et al.'s Anaerobic to Aerobic process, where air was injected into a deeply anaerobic landfill to convert it to aerobic conditions. During this conversion process, they observed CO concentrations over 1000 ppmv in the landfill. They also measured a significant reduction in CH_4 and observed:

> *"The increase in CO concentration was dramatic and raised concern over the occurrence of waste combustion. Landfill operators have measured CO concentration as an indicator of subsurface landfill fires, as CO is a product of incomplete combustion. Although several thermocouples installed within the waste showed an increase in temperature during air addition, the temperatures measured were of the magnitude expected for aerobic biological decomposition, not combustion (the maximum temperature during testing was below the permit threshold value [**170 °F**].* (Powell et al., 2006) (temperature added).

Barlaz et al. (2016b) discuss how *anaerobic* elevated temperature landfills comprise a very small percentage of municipal landfills, and prescribe the following control measure for these systems: removing gas containing volatile chemicals, hydrogen, and other compounds that feed the heat generating reactions, but without introducing large amounts of air to keep the system anaerobic. They state: *"[r]emoving gas from ETLFs [elevated temperature landfills] is important as the gas contains volatile organics that provide fuel for the reactions."*

At Zone A, significant increases in CO have been observed since September 2016 in VEW-6I and VEW-7I (Figure 6.4). This increase in CO is likely due to Condition 1, where a formally aerobic system has now turned deeply anaerobic due to changes in SVE operations, and does not need to be explained by combustion. As shown in Figure 6.4, the increase in CO in these two wells is strongly correlated to the decline in oxygen.

Introducing air, resuming purging, or operating VEW-6I and VEW-7I at low levels will likely reduce CO levels, although it may take several weeks or longer.



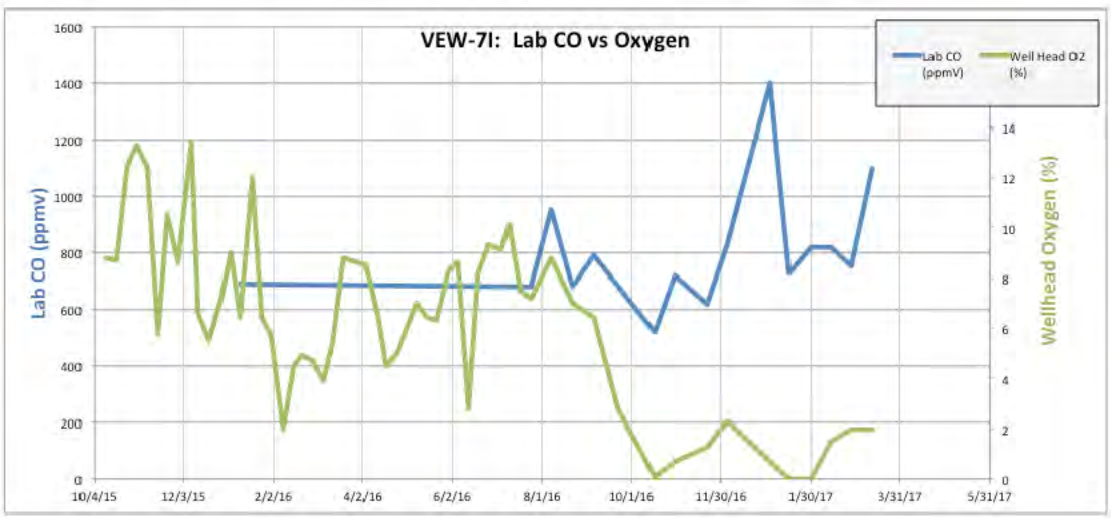


Figure 6.4. *Lab CO and oxygen concentrations in the intermediate zone, Oct. 2015 to March 2017.*

Key Points Specific to Carbon Monoxide

- The highest laboratory analyzed CO measured in the soil gas probes was at location GI6-32 at 930 ppmv. The next highest was GI6-29 at 780 ppmv. Jafari et al. (2017a) use a 1500 ppmv CO threshold as one of four metrics to identify smoldering combustion. Other researchers caution not to use CO as a sole indicator of combustion.

  The CO concentrations in the soil gas sampling points do not indicate combustion in Zone A. While not definitive alone, CO vs. temperature, oxygen, and CO/CO_2 ratios also support the conclusion that combustion is not occurring in Zone A.

- The CO concentrations in VEW-6I and VEW-7I have increased in 2016/2017 to a maximum of 1400 ppmv. This increase is correlated to the decrease of oxygen to very low concentrations (<2%). An increase in CO from non-combustion biological process is expected when an aerobic system is converted to a deeply anaerobic system (Haarstad et al., 2006) and does not indicate combustion.

- Introducing air, resuming purging, or operating VEW-6I and VEW-7I at low levels will likely reduce CO levels, although it may take several weeks or longer.

7.0 CARBON DIOXIDE / OXYGEN RATIO COMPARISON

7.1 Key Principles

Underground combustion of liquids and gases is not self-sustaining in soils containing those contaminants in the pore space. However, solid continuous combustible material, such as municipal solid waste (MSW), can support sustained combustion under the right conditions. An analysis of the relationship of carbon dioxide (CO_2) to oxygen (O_2) was conducted as a line of evidence to evaluate whether the underground oxidation reactions that are consuming oxygen and releasing carbon dioxide, are originating from mixed debris or from organic compounds that may be present in varying concentrations in the soil or debris fill (Table 7.1, Figure 7.1).

Oxidation is a process where oxygen is consumed in a reaction, either by **combustion**, **biodegradation** or more rarely by chemical decomposition (e.g., **pyrolysis**, which occurs at relatively high temperatures, e.g., >390 ºF for wood). The method described in this section assumes relatively complete oxidation to CO_2 with no minor byproducts being produced or accumulated (such as carbon monoxide for combustion or bacteria biomass for biodegradation). Note that combustion can be further subdivided in flaming combustion, or more commonly for municipal landfills, smoldering combustion.

If the results show that the mixed debris is being oxidized, then it is **possible** but not confirmed that combustion is occurring because the mixed debris could instead be biodegrading at a relatively rapid rate. (Section 8.2, however, suggests the mixed waste contains little combustible material).

If the results show that the organic compounds are being oxidized, then it is **unlikely** that combustion is occurring because underground combustion of liquids and gases is not self-sustaining in soils containing contaminants in the pore space.

The method assumes that if no combustion takes place, then the oxygen concentration will be about 21% and the CO_2 concentration will be about 0.03% (atmospheric conditions). This is represented as the far lower right starting point for all the oxidation lines shown on Figure 7.1. If enough oxidation occurs to consume all the oxygen, the amount of CO_2 that is generated depends on the material. As shown in Table 7.1 and Appendix E, if completely oxidation converts the mixed debris to CO_2, then the resulting gas mixture would be ~0% O_2 and between 19-21% CO_2. However, if oxidation converts organic compounds to CO_2, then the resulting gas mixture would be in the 10.5–16% CO_2 range. This is because the molecular formula of components comprising mixed debris is different from that of the organic compounds (see Appendix E). The method does have some uncertainty, and should be given less weight than other combustion metrics such as smoke and temperature.

CO_2 and O_2 concentrations in the soil gas at the 48 soil gas probes at the nine locations (see Figure 3.1 were analyzed (Table 7.2). The data were graphed and compared to standard combustion/biodegradation lines for the two classes of materials as shown in Figure 7.1.

Table 7.1. *Interpretation of CO_2 and O_2 data plotted in Figure 7.2.*

Potential Reactant	Represent-ative Compound	Can Support Self-Sustaining Combustion?	Slope of CO_2/O_2 Stoichiometry Line When Combusted or Biodegraded (see Appendix E)	
Carbon-aceous Waste (e.g., Mixed debris)	Wood, Paper, MSW	**Yes.** For example, municipal landfill fires do occur because of continuous nature of MSW.	6 ÷ 6.5 = 0.92 6 ÷ 6 = 1.0 31 ÷ 34 = 0.91	**0.9 to 1.0**
Organic compounds*	Toluene 2-Butanone Methane**	**No** - if the contaminants are present in porous media such as soil. For example, thermal remediation projects do not consider underground fires a concern if the waste material is in soils.	7 ÷ 9 = 0.78 4 ÷ 5.5 = 0.73 1 ÷ 2 = 0.5	**0.5 to 0.78**

** The most common organic compounds in Zone A are aromatics (such as toluene) and ketones (such as 2-butanone); as such, their mass dominates in this analysis.*

*** Methane included because it can only be produced by biodegradation, not combustion.*

7.2 CO_2/O_2 Results

As shown on Figure 7.1 and Table 10-1, almost all the locations with significant oxygen depletion (< 15% oxygen remaining) had a CO_2/O_2 signature of chemical oxidation rather than oxidation of mixed debris. This indicates that most of the oxidation reactions removing oxygen from the soil gas in Zone A are due to oxidation of the chemical contaminants, most likely aerobic biodegradation of the VOCs like toluene and 2-butanone and methane.

The only exception was location GI4, were oxygen levels at several depths were very low but with CO_2/O_2 signatures that represented oxidation of carbonaceous waste such as paper, wood, and MSW characteristic of the mixed debris. At this location, the VOCs in the soil gas were relatively low < ~1000 ppmv (Appendix F) so chemical oxidation was a smaller part of the over oxidation reactions. GI9 showed a combination of mixed debris and chemical oxidation.

The other locations showing mixed debris being the dominant oxidation reaction (TC8, TC9) had very low oxygen depletion and overall are not contributing a large fraction of the oxygen demand at the site.

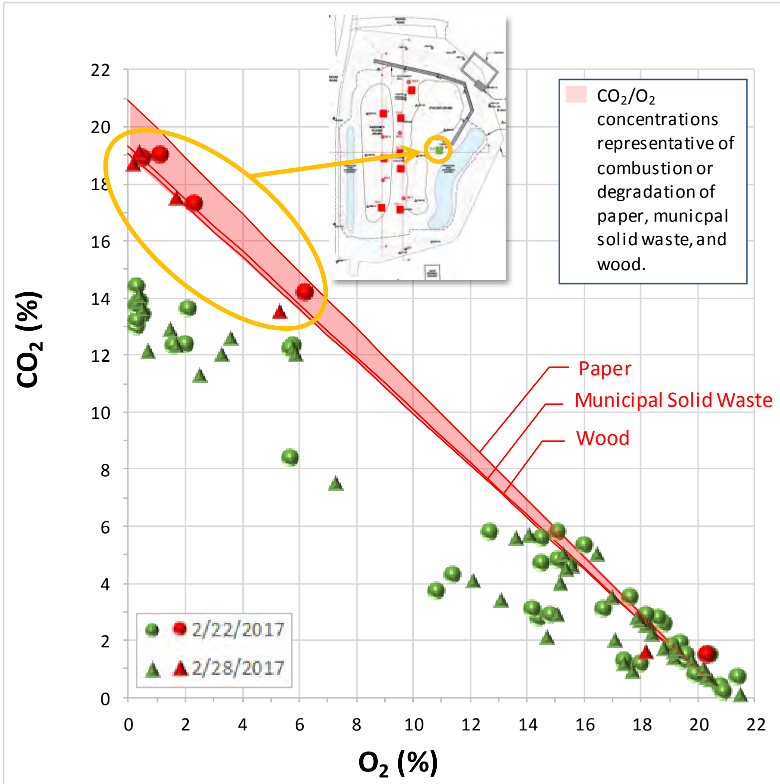
In addition, 7 of the 15 soil gas probes along the centerline of Zone A (cross section C-C' as shown in Figure 3.1; also see the tan shading in Table ES-2) have oxygen concentrations below the 3% level which has been cited as the minimum threshold that can support smoldering combustion (e.g., U.S. Navy, 1998) and well below the 10-14% level that can support flammable combustion. This supports the conclusion that large-scale combustion is not occurring in Zone A.

Key Points Specific to Carbon Dioxide/Oxygen Ratio
• Overall the Zone A CO_2/O_2 data indicate that most areas with significant oxygen depletion have the gas signature of organic chemicals that are being oxidized, not mixed debris. • Because underground combustion of liquids and gases is not self-sustaining in soils, these results support the conclusion that there is no underground combustion occurring in Zone A.

Table 7.2. *Soil Gas Sampling Data*.

Sampling Location	Sampling Depth (ft bgs)	Sampling Date: 22-Feb-17		Sampling Date: 28-Feb-17	
		CO_2 (%)	O_2 (%)	CO_2 (%)	O_2 (%)
GI1	7	0.2	20.9	0.1	21.5
GI1	14	3.1	16.7	1.7	18.8
GI1	24	5.6	14.5	5	15.3
GI1	29	12.3	5.8	12.2	5.8
GI1	35	12.2	5.7	12	5.9
GI2	8	5.8	15.1	5.7	14.1
GI2	16	13.6	2.1	12.6	3.6
GI2	27	12.4	2	12	3.3
GI2	32	4.3	11.4	4.1	12.1
GI2	36	1.3	17.4	1.2	17.4
GI3	8	0.4	20.8	2.5	18.3
GI3	16	14.4	0.3	14.1	0.4
GI3	25	13.7	0.3	12.9	1.5
GI3	30	2.8	14.4	2	17.1
GI3	37	3.7	10.8	2.1	14.7
GI4	9	1.5	20.3	1.6	18.2
GI4	14	14.2	6.2	13.5	5.3
GI4	19	17.3	2.3	17.5	1.7
GI4	24	19	1.1	19.1	0.4
GI4	30	18.9	0.5	18.7	0.2
GI5	7	0.8	19.9	0.6	20.5
GI5	12	4.6	15.5	4.6	15.6
GI5	21	8.4	5.7	7.5	7.3
GI5	28	13	0.3	12.1	0.7
GI5	33	13.2	0.3	11.3	2.5
GI6	12	1.3	19.5	1.4	19.2
GI6	22	13.9	0.4	14.1	0.4
GI6	25	13.5	0.4	13.9	0.3
Sampling Location	Sampling Depth (ft bgs)	Sampling Date: 22-Feb-17		Sampling Date: 28-Feb-17	
		CO_2 (%)	O_2 (%)	CO_2 (%)	O_2 (%)
GI6	29	12.3	1.6	12.3	1.7
GI6	36	13.4	0.5	13.6	0.5
GI7	8	1.5	20.4	1.3	19.8
GI7	17	3.5	17.6	3.5	17
GI7	23	4.8	15.1	4.5	15.4
GI7	26	2.9	14.8	2.9	15.1
GI7	29	5.8	12.7	5.6	13.6
GI7	33	3.1	14.2	3.4	13.1
GI8	13	0.7	21.4	0.7	20.3
GI8	17	2.6	18.8	2.5	18.2
GI8	26	1.9	19.4	1.6	19.2
GI8	29	2.8	18.6	2.2	18.4
GI8	32	1.2	18	0.9	17.7
GI8	37	4.7	14.5	4	15.2
GI9	19	5.3	16	5	16.5
GI9	25	1.5	19.6	1	20.2
GI9	29	1.8	19.1	1.7	19.3
GI9	34	2.7	18.1	2.7	18
GI9	39	2.9	18.2	2.8	17.9

CO_2 = carbon dioxide; ft bgs = feet below ground surface; O_2 = oxygen.



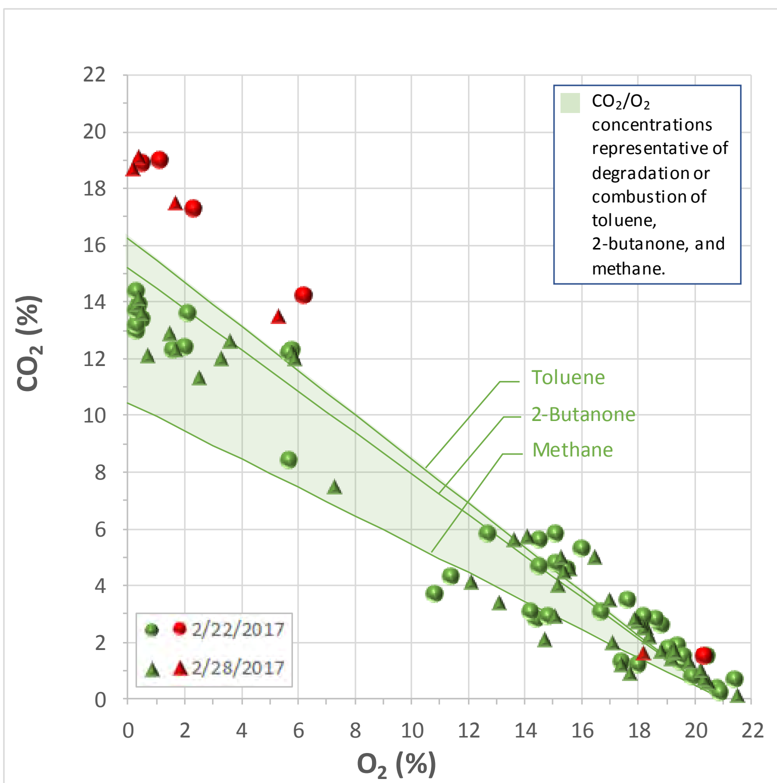


Figure 7.1. *Comparison of Zone A soil gas data with degradation/combustion regression lines. Red dots are from Location TC4, green dots are all other locations.* ***Top Panel:*** *Comparison with MSW, paper, and wood.* ***Bottom Panel:*** *Comparison with toluene, 2-butanone, and methane.*

8.0 CHARACTERISTICS OF "MIXED DEBRIS" AND TVS ANALYSIS

The following sub-sections present the methods used to determine the relative presence and content of the mixed debris encountered, the process to collect the samples for TVS analysis, and the key findings for comparisons between the many logs available for analysis, and each of the large diameter borings.

8.1 Methods

During the drilling process described in Section 4, recovered materials were inspected by SCS personnel. Recovered materials were classified using a modified version of the Unified Soil Classification System (USCS). A key to the modified USCS used by SCS is provided in Appendix C. Modification to the USCS was required to include mixtures of the encountered soils and refuse, referred to as mixed debris, that are typical within landfill environments.

Recovered materials from the borings were logged as described in the Work Plan. Following recovery of the materials by the Driller the follow events occurred (in order):

a. The soil temperature was measured using an IR thermometer.
b. The recovery was photographed. When the core barrel tooling was used, the process described in Section 4.1 was used to dislodge the bottom section of recovery for documentation.
c. The Driller's assistant spread the sample out within the containment area for SCS personnel to classify and document the recovery.
d. Samples of the mixed debris encountered were collected as directed by SCS personnel, if desired or as conditions warranted.
e. The recovered materials were containerized for disposal or stockpiled for backfill of the boring as directed by SCS.

Where refuse was encountered, the composition of the refuse (e.g. wood, metal, plastics, and textiles) was documented, as well as the relative percent composition (by volume) with respect to the remainder of the section of the recovery being logged. At the discretion of SCS personnel two to six bulk bag samples were collected from each boring within the mixed debris layer(s). At the end of each day, up to three samples were collected and field preserved for each boring from within the layer(s) of mixed debris encountered. Samples were field preserved in 8-ounce soil jars and put on ice, and kept at a temperature below 6.0°C (42.8°F) consistent with USEPA method SM 2540 for total, fixed, and volatile solids in water, solids, and biosolids. Locations of the samples collected are presented on the boring logs in Appendix C. A summary table of the collected samples is presented below (Table 8.1).

Table 8.1: *TVS sample collection summary*

Well Designation	BA-1	BA-2	BA-3	BA-4	BA-5	BA-6
Sample No. 1 Depth (ft)[(1)]	20	26.3	23	26	17	28.5
Sample No. 2 Depth (ft)[(1)]	22	28	26	28.5	23.5	32
Sample No. 3 Depth (ft)[(1)]	30	30	29	30	30	NA

Notes:
1. All depths recorded as reported by the Driller, unless noted otherwise.
2. NA = Not Applicable. No sample collected.

At the discretion of SCS personnel, a third sample was not collected from boring BA-6 as the subsurface conditions did not warrant an additional sample due to the lack of sufficient mixed debris. The lens of mixed debris encountered was relatively thin with little variation, as opposed to what was observed in the other borings.

Samples collected by SCS were relinquished to Environmental Partners Inc. (EPI) personnel on the final day of drilling, February 16, 2017, for submittal to Analytical Resources, Incorporated (ARI) for analysis. Results from the sample analysis are shown on the boring logs in Appendix C.

8.2. Total Volatile Solids Results

Results from the sample analysis are shown on the boring logs (Appendix C.) at the location where the samples were obtained. The results of the TVS analyses prepared by ARI are also presented in Appendix C. A summary table of the laboratory results for TVS is presented below.

Table 8.2: *TVS Analytical Results Summary (percent by weight)*

Well Designation		BA-1	BA-2	BA-3	BA-4	BA-5	BA-6
Sample No. 1	% by weight	21.1	8.07	8.08	3.00	9.63	13.3
	depth	20 ft	26.3 ft	23 ft	25.5 ft	17 ft	28.5 ft
Sample No. 2	% by weight	6.90	22.7	20.2	16.6	4.88	14.4
	depth	22 ft	28 ft	26 ft	28 ft	23.5 ft	32 ft
Sample No. 3	% by weight	5.22	28.5	8.17	6.53	1.56	NA
	depth	30 ft	30 ft	29 ft	29.5 ft	30 ft	--
Average (%)	--	11.1	19.8	12.2	8.71	5.36	13.9

Notes:
1. NA = Not Applicable. No sample collected.

The values for TVS presented represent the percentage of the sample that is unburnt or that is unspent organic content within the sample collected. Organic content within the sample can be from buried refuse within the sample or from the organic content of the disposed soils. The TVS value can be correlated to the volume of material that can support combustion within the sample.

Using the results of the TVS analyses, the volume of volatile material (susceptible combustion) within each boring was determined. The TVS result obtained was applied to the range of mixed debris material associated with that sample. For example, in BA-1, the upper TVS sample was obtained at 20 feet below ground surface, the second sample was obtained at 22 feet below ground surface, and the third one was obtained at a depth of 30 feet below ground surface. The range for BA-1 20' would be from the depth where the mixed debris was first encountered (17 feet) to the midpoint between samples BA-1 20' and BA-1 22', or 21 feet below ground surface. Using the same rationale, the range for BA-1 22' was determined to be from the midpoint between samples BA-1 20' and BA-1 22', to the midpoint between BA-1 22' and BA-1 30', or from 21 feet to 26 feet below ground surface and the range for BA-1 30" was from 26 feet to the bottom of the mixed debris layer (37 feet below ground surface). The volume of the mixed debris material within the boring for each pass of the boring tooling is determined and is multiplied by the percentage of refuse and wood debris content, as documented in the boring logs, to determine volume of mixed debris in each section of the boring. The TVS analytical result is applied to the volume of mixed debris to determine volume the volatile material within the layer of mixed debris. Once the volume for each layer of mixed debris is determined, a total volume of volatile material is determined for the length of the boring in which mixed debris was encountered. This method was applied to each of the large diameter boring to determine the volume of TVS. Using this analysis, it was determined that the mixed debris layer, as observed in the large diameter borings, contains an average of about 11.4 percent TVS. In addition, the average TVS content of the entire depth of each boring combined is 0.8 percent. A summary of the TVS content in the borings is presented in Table 8.3. On average, MSW has an average TVS content of 50 percent. Compared to MSW, the mixed debris layer is significantly lower (50% vs 11.4%). Over the entire thickness of the combined borings compared to MSW, the TVS content within the boring is substantially lower (50% vs 0.8%). Tables of the TVS content calculation for each of the large diameter borings is included in Appendix C.

Table 8.3: *TVS Content Summary of Boring*

Boring	BA-1	BA-2	BA-3	BA-4	BA-5	BA-6	Total	Site Average
Total Depth (ft)	38.0	35.0	36.0	35.0	34.0	36.0	214.0	35.7
Total Volume of Boring (ft^3)	119.4	110.0	113.1	110.0	106.8	113.1	672.3	112.1
Total Volume of Mixed Debris (ft^3)	11.7	1.4	13.2	0.5	15.0	7.5	49.3	8.2
Total Volume of TVS (ft^3)	1.1	0.3	1.9	0.0	1.0	1.0	5.2	0.9
Volume of Boring as Mixed Debris (%)	9.8	1.3	11.7	0.4	14.1	6.6	7.3	7.3
Volume of Mixed Debris as TVS (%)	9.3	19.2	14.1	6.0	6.6	13.1	10.6	11.4
Volume of Boring as TVS (%)	0.9	0.3	1.6	0.0	0.9	0.9	0.8	0.8

8.3 Continuity of the Mixed Debris

The degree of continuity of the mixed debris observed in Zone A is also a critical factor in assessing the potential for combustion:

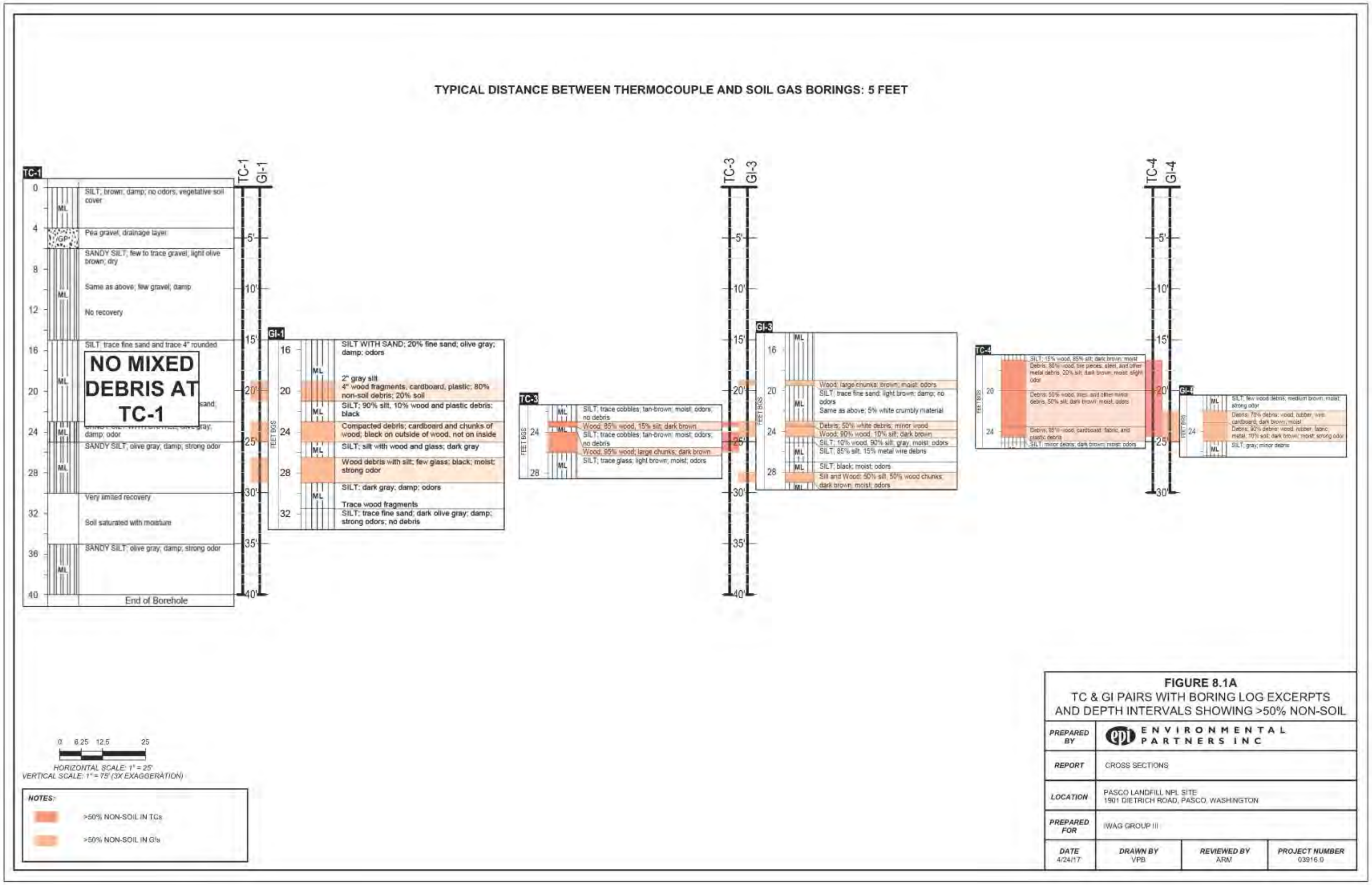
- If there are thick, continuous layers of combustible mixed debris then the potential for combustion is higher;
- If the mixed debris is in thinner, discontinuous layers then the potential for subsurface combustion is greatly reduced.

One method to evaluate the mixed debris layer is based on the first observation that mixed debris was variably present in seven of the nine borings (Figures 3.2a, 3.2b, and 3.2c), and it did not appear to represent homogenous, extensive, or contiguous layers or particularly large masses of debris. This method offers an initial large-scale comparison over a 40 to 60 foot horizontal distance. Overall, the mixed debris appeared sporadically (i.e., without much of a pattern) in only seven of the nine locations.

A short-scale comparison over a 5-foot horizontal distance provides a slightly better perspective. By first comparing the presence of mixed debris shown in the thermocouple borings vs. the soil gas borings, a small-scale comparison over five horizontal feet can be made (Figures 8.1a, b, c, and d). Several of many possible examples follow. A visual inspection of the logs shows the mixed debris in GC1 is not present 5 feet away in TC1 (Figure 8.1a). The relatively thick layer in TC-4 is much thinner only 5 feet away in GI4 (Figure 8.1a). And the three thin layers of mixed debris in GI6 do not correlate vertically to a thicker zone of mixed debris 5 feet away in TI4. Overall these and other comparisons support the conclusion that the mixed debris is generally in thin and somewhat discontinuous lenses that would not support or propagate sustained combustion if it should occur in the subsurface.

Key Points Specific to the Occurrence of Mixed Debris

- Results of the TVS analysis from the large diameter borings indicate that a significant portion of the fill within Zone A of the landfill is not volatile. When viewed in conjunction with the prepared boring logs, the lenses of mixed debris encountered were separated by layers of silty sand and/or sandy silts with little to no organic content.
- Samples collected from the borings where a significant portion of the recovery was described as refuse or mixed debris (<30% by volume), did not have a TVS result proportionate to that of the recovered materials described. The lower TVS result for the mixed debris (11.4 %) can be attributed to the refuse and mixed debris recovered being decomposed and no longer combustible.
- The mixed debris occurs in generally thin and discontinuous lenses, even over short distances making sustained combustion or the propagation of unlikely.



TYPICAL DISTANCE BETWEEN THERMOCOUPLE AND SOIL GAS BORINGS: 5 FEET
TC-1
GI-1
TC-3
GI-3
TC-4
GI-4
NO MIXED DEBRIS AT TC-1
End of Borehole
HORIZONTAL SCALE: 1" = 25'
VERTICAL SCALE: 1" = 75' (3X EXAGGERATION)
NOTES:
>50% NON-SOIL IN TCs
>50% NON-SOIL IN GIs
FIGURE 8.1A
TC & GI PAIRS WITH BORING LOG EXCERPTS AND DEPTH INTERVALS SHOWING >50% NON-SOIL
PREPARED BY
ENVIRONMENTAL PARTNERS INC
REPORT
CROSS SECTIONS
LOCATION
PASCO LANDFILL NPL SITE
1901 DIETRICH ROAD, PASCO, WASHINGTON
PREPARED FOR
IWAG GROUP III
DATE
4/24/17
DRAWN BY
VPB
REVIEWED BY
ARM
PROJECT NUMBER
03916.0

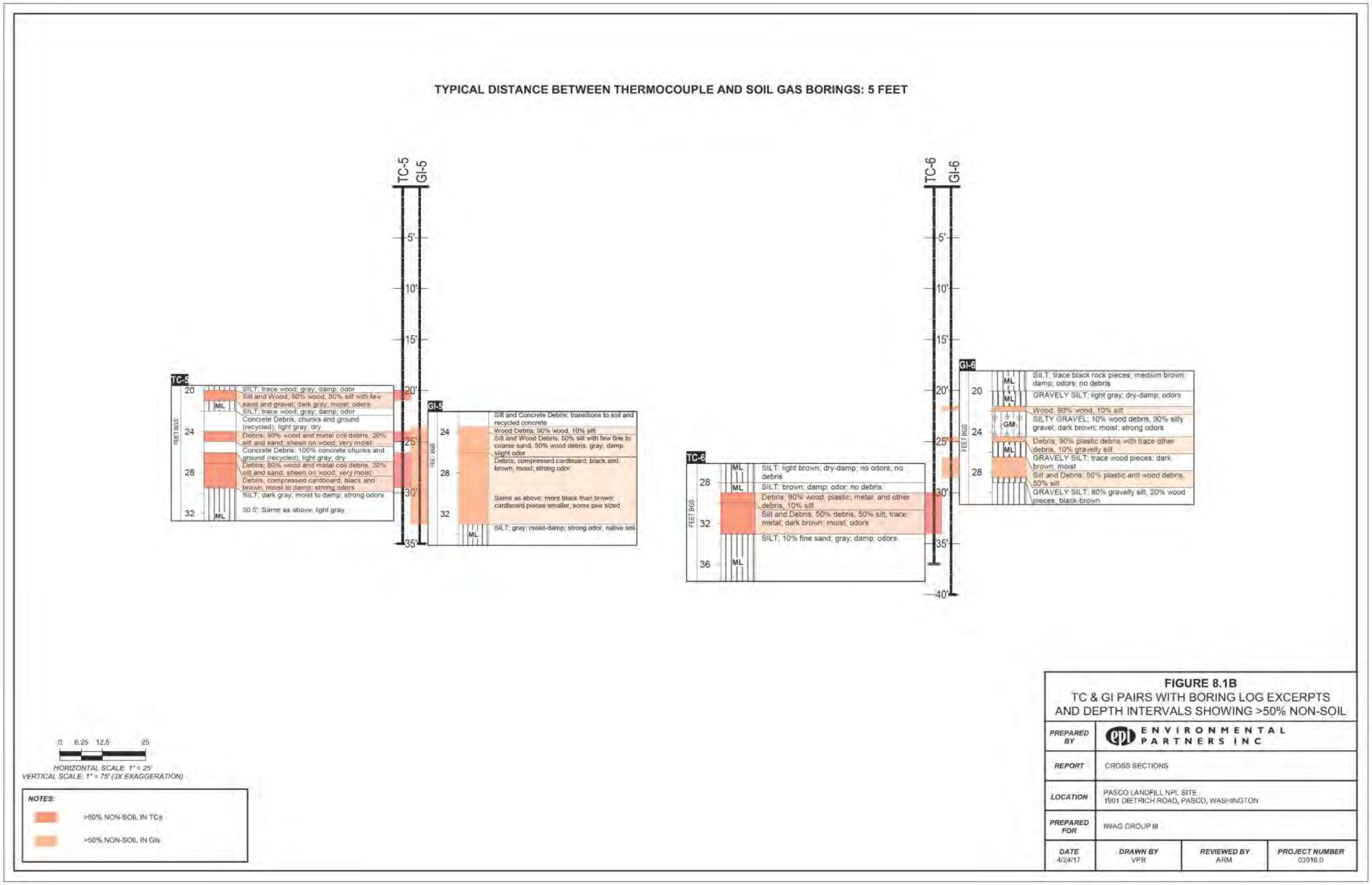
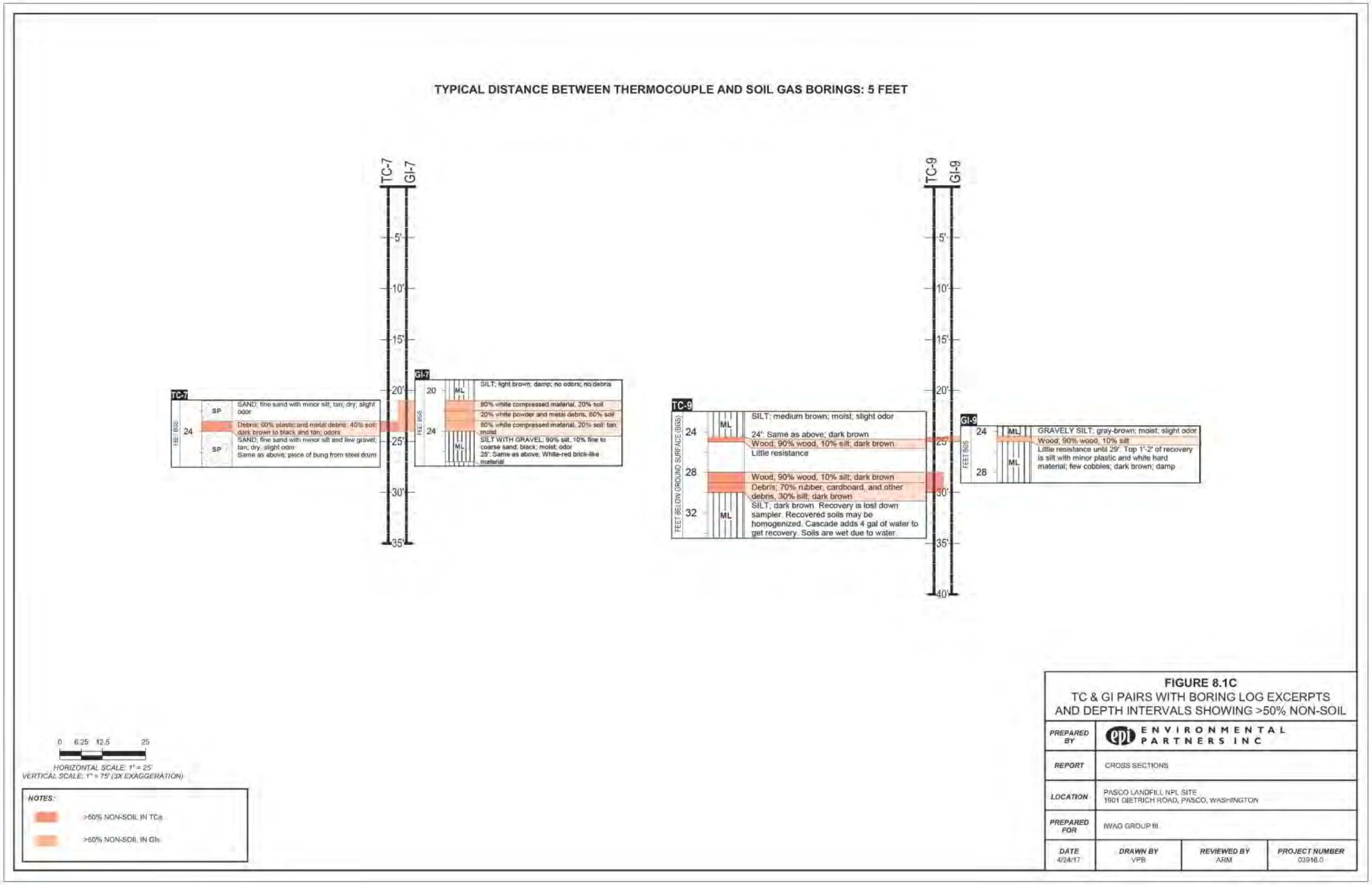
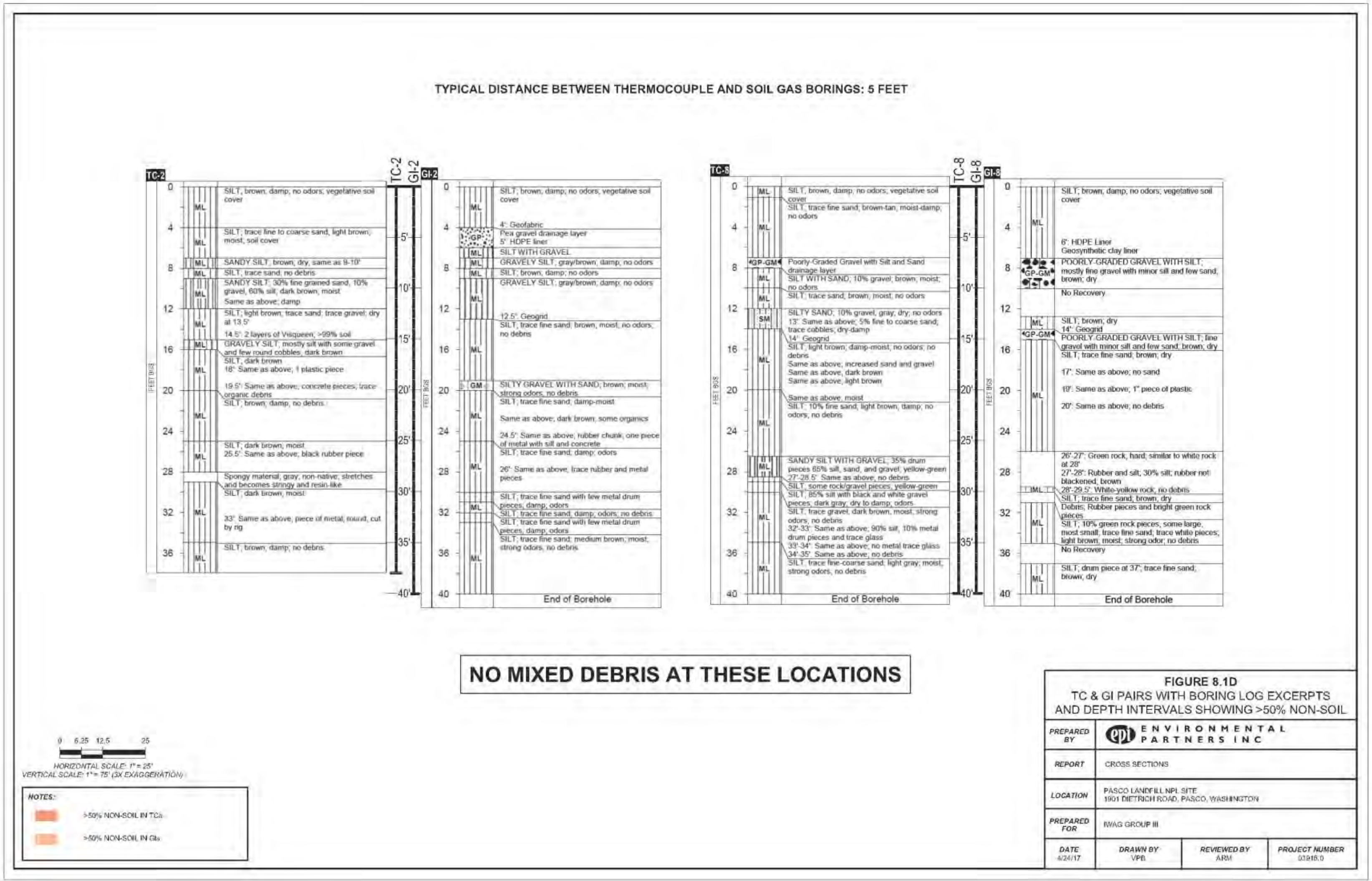


FIGURE 8.1B
TC & GI PAIRS WITH BORING LOG EXCERPTS AND DEPTH INTERVALS SHOWING >50% NON-SOIL


TYPICAL DISTANCE BETWEEN THERMOCOUPLE AND SOIL GAS BORINGS: 5 FEET
TC-7
GI-7
5'
10'
15'
20'
25'
30'
35'
FEET BGS
24
SP
SAND; fine sand with minor silt, tan; dry; slight odor
Debris; 60% plastic and metal debris, 40% soil; dark brown to black and tan; odors
SAND; fine sand with minor silt and few gravel; tan; dry; slight odor
Same as above; piece of bung from steel drum
20
ML
SILT; light brown; damp; no odors; no debris
80% white compressed material, 20% soil
20% white powder and metal debris, 80% soil
80% white compressed material, 20% soil; tan; moist
SILT WITH GRAVEL; 90% silt, 10% fine to coarse sand; black; moist; odor
25': Same as above; White-red brick-like material
TC-9
GI-9
40'
FEET BELOW GROUND SURFACE (BGS)
28
32
SILT; medium brown; moist; slight odor
24': Same as above; dark brown
Wood; 90% wood, 10% silt; dark brown
Little resistance
Wood; 90% wood, 10% silt; dark brown
Debris; 70% rubber, cardboard, and other debris, 30% silt; dark brown
SILT; dark brown. Recovery is lost down sampler. Recovered soils may be homogenized. Cascade adds 4 gal of water to get recovery. Soils are wet due to water.
GRAVELY SILT; gray-brown; moist; slight odor
Wood; 90% wood, 10% silt
Little resistance until 29'. Top 1'-2' of recovery is silt with minor plastic and white hard material; few cobbles; dark brown; damp
0 6.25 12.5 25
HORIZONTAL SCALE: 1" = 25'
VERTICAL SCALE: 1" = 75' (3X EXAGGERATION)
NOTES:
>50% NON-SOIL IN TCs
>50% NON-SOIL IN GIs
FIGURE 8.1C
TC & GI PAIRS WITH BORING LOG EXCERPTS AND DEPTH INTERVALS SHOWING >50% NON-SOIL
PREPARED BY
ENVIRONMENTAL PARTNERS INC
REPORT
CROSS SECTIONS
LOCATION
PASCO LANDFILL NPL SITE
1901 DIETRICH ROAD, PASCO, WASHINGTON
PREPARED FOR
IWAG GROUP III
DATE
4/24/17
DRAWN BY
VPB
REVIEWED BY
ARM
PROJECT NUMBER
03916.0


TYPICAL DISTANCE BETWEEN THERMOCOUPLE AND SOIL GAS BORINGS: 5 FEET
TC-2
GI-2
TC-8
GI-8
End of Borehole
NO MIXED DEBRIS AT THESE LOCATIONS
HORIZONTAL SCALE: 1" = 25'
VERTICAL SCALE: 1" = 75' (3X EXAGGERATION)
NOTES:
>50% NON-SOIL IN TCs
>50% NON-SOIL IN GIs
FIGURE 8.1D
TC & GI PAIRS WITH BORING LOG EXCERPTS
AND DEPTH INTERVALS SHOWING >50% NON-SOIL
PREPARED BY
ENVIRONMENTAL PARTNERS INC
REPORT
CROSS SECTIONS
LOCATION
PASCO LANDFILL NPL SITE
1901 DIETRICH ROAD, PASCO, WASHINGTON
PREPARED FOR
IWAG GROUP III
DATE
4/24/17
DRAWN BY
VPB
REVIEWED BY
ARM
PROJECT NUMBER
03918.0

9.0 GAS AUTOIGNITION TEMPERATURE

The Work Plan states: "*[t]he autoignition temperature of the gas mixture in the subsurface at Zone A is a valuable parameter to help gauge the overall risk of an autoignition event.*"

A two-step approach for collecting the 3-liter gas sample required for autoignition testing is being used to select the location of the gas sample. The goal of the two step approach is to find a location that represents a relatively high probability for low temperature autoignition at the site.

> **Step 1:** Review soil gas data to determine locations for more detailed VOC testing. Select several locations based on high hydrocarbon concentrations (based on PID), high Lower Explosive Limit (LEL) data, and relatively high oxygen levels that will support potential combustion.
>
> **Step 2:** After analyzing the VOC data, select the location for autoignition testing. The presence of low-autoignition constituents such as carbon disulfide will be considered in the selection process.

Step 1 and Step 2 has been completed with the results shown in Table 9.1. Using these data location **GI2-32** have been selected for providing the gas sample for autoignition testing.

Table 9.1. *Locations for Step 2 VOC sampling to select location for autoignition testing. Note PID and Total VOCs reported in different units. GI2-32 has been selected for the autoignition sampling.*

Location	O_2 (%)	PID (ppmV)	LEL (%)	Total VOCs (µg/L)	Carbon Disulfide (µg/L)
GI2-32	10.3	>9,999	100	18,474	0.36
GI1-35	6.1	>9,999	100	18,413	1.4
GI3-25	0.3	5,153	100	17,452	ND
GI2-27	1.8	9,999	56	14,118	0.3
GI5-28	0.2	4,794	72	11,907	0.46
GI8-37	14.7	4,894	20	7,868	0.35
GI6-29	0.9	3,079	20	6,869	1.4
GI4-30	0.2	768	60	3,349	ND

Key Points Specific to Autoignition Testing

- Autoignition testing on gas collected from Zone A will be conducted to confirm that autoignition is not an issue of concern.
- The location selection process for collecting the autoignition sample has been completed. The actual sample collection and analysis will happen in April/May 2017.

10.0 CONCLUSIONS AND RECOMMENDATIONS

10.1 Results

Seven lines of evidence were independently developed to evaluate potential for subsurface combustion in Zone A: smoke, in-situ soil temperatures, carbon monoxide, characteristics of the mixed debris, Total Volatile Solids analysis of the mixed debris, carbon dioxide/oxygen relationship, and autoignition testing. All but the autoignition test have been completed.

Table 10.1 provides a summary of the combustion lines of evidence data generated by the testing program by monitoring location.

The data show these results:

- During the drilling process smoke was not observed in any of the borings. No signs of ongoing subsurface combustion were identified, including soil core temperatures in excess of 170°F.
- Overall, the maximum temperatures seen at in the 46 operational thermocouples in Zone A were 159 ºF during the main test period (and 160 ºF during a subsequent six-day test period). These temperatures are not indicative of current combustion in Zone A.
- The CO concentrations in the 47 soil gas sampling points showed a maximum of 930 ppmv and do not indicate current combustion in Zone A.
- The CO concentrations in VEW-6I and VEW-7I increased in 2016/2017 and realized a maximum of 1400 ppmv. This increase is correlated with the decrease in oxygen levels to very low concentrations (<2% oxygen) (attributable to the cessation of SVE purging of the intermediate wells). An increase in CO from non-combustion biological process is expected when an aerobic system is converted to a deeply anaerobic system (Haarstad et al., 2006) and can explain why CO is increasing in these areas of Zone A.
- Overall, the Zone A CO_2/O_2 data indicate that it is primarily organic compounds that are being oxidized in most of Zone A, and not the mixed debris through combustion or biodegradation. Because underground combustion of liquids and gases is not self-sustaining (if it could occur at all) in soils containing contaminants in the pore space, these results support the conclusion that there is no underground combustion occurring in Zone A. In a similar manner, combustion is not likely to occur in Zone A in the future.
- The lenses of mixed debris in Zone A are separated by layers of silty sand and/or sandy silt with little to no organic content and are not continuous across the site or even relatively short distances. Results of the TVS analysis from the large diameter borings indicate that a significant portion of the fill within Zone A of the landfill is not volatile, and therefore the combustion potential is relatively low.

***Table 10-1.** Summary of lines of evidence data for key locations in Zone A.*

Cross-Section	Location	1. Visual Observation of Smoke	2. Maximum *In situ* Soil Temperature (°F)	3. Average Lab Carbon Monoxide Concentration ** (ppmv)	4. Average PID (ppmv)	4. Average Oxygen (%)	4. Material Being Oxidized Based on Carbon Dioxide/Oxygen Relationship	5. Characteristics/Thickness of Mixed Debris (MD) Layer. TC: Thermocouple Boring; GC: Gas Concentration Boring located ~ 5 feet away. TC Borings	Overlap	GC Borings	6. Total Volatile Solids (TVS) in Mixed Debris / Entire Boring	Combustion Indicated?
C	TC/GI1-24	None	157	295	1,725	15	Combination				BA-1	
C	TC/GI1-29	None	154	445	4,741	6	Combination	No mixed debris	0'	6.5' (3 layers)	9.3% / 0.9%	No
C	TC/GI1-35	None	148	480	5,112	6	Combination					
C	TC/GI2-27	None	154	295	**7,481**	3	Chemicals					
C	TC/GI2-32	None	152	280	6,174	12	Chemicals	No mixed debris	0'	No mixed debris		No
C	TC/GI2-36	None	146	200	4,512	17	Chemicals					
C, B	TC/GI3-25	None	**159***	280	4,558	1	Chemicals					
C, B	TC/GI3-30	None	157	205	4,504	16	Chemicals	2.5' (1 layer)	1'	3' (3 layers)		No
C, B	TC/GI3-37	None	147	295	3,756	13	Chemicals				BA-3	
C	TC/GI5-21	None	143	295	3,479	7	Chemicals				14.1% / 1.6%	
C	TC/GI5-28	None	150	305	4,474	1	Chemicals	5.5' (3 layers)	4.5'	9.5' (1 layer)		No
C	TC/GI5-33	None	151	280	4,585	1	Chemicals					
C	TC/GI6-25	None	150	160	3,357	0.4	Chemicals				BA-6	
C	TC/GI6-29	None	153	**765****	3,372	2	Chemicals	4 (1 layer)	0'	3' (3 layers)	13.1% / 0.9%	No
C	TC/GI6-36	None	143	41	3,719	1	Chemicals					
B	TC/GI4-19	None	123	*<100 (meter)*	*1,063*	2	Mixed Debris				BA-5	
B	TC/GI4-24	None	125	*<100 (meter)*	*745*	1	Mixed Debris	7.5' (1 layer)	1	3' (1 layer)	6.6% / 0.9%	No
B	TC/GI4-30	None	124	*<100 (meter)*	*892*	0.4	Mixed Debris					
A	TC/GI7-23	None	123	*<100 (meter)*	*804*	15	Combination					
A	TC/GI7-26	None	129	120	1,507	15	Chemicals					
A	TC/GI7-29	None	132	320	2,997	13	Chemicals	1' (1 layer)	1'	3' (1 layer)	BA-2	No
A	TC/GI7-33	None	135	285	2,266	14	Chemicals				19.2% / 0.3%	
A, B	TC/GI8-26	None	139	78	1,427	19	Mixed Debris					
A, B	TC/GI8-29	None	141	190	3,668	19	Mixed Debris	No mixed debris	0'	No mixed debris	BA-4;	No
A, B	TC/GI8-32	None	141	300	3,530	18	Chemicals				6.0% / 0%	
A, B	TC/GI8-37	None	137	385	4,173	15	Chemicals					
A	TC/GI9-25	None	119	118	616	20	Mixed Debris					
A	TC/GI9-29	None	124	*<100 (meter)*	*641*	19	Mixed Debris	2.5' (2 layers)	0.5'	0.5' (1 layer)		No
A	TC/GI9-34	None	129	*<100 (meter)*	*797*	18	Mixed Debris					
A	TC/GI9-39	None	126	*<100 (meter)*	*879*	18	Mixed Debris					

* 160 °F measured during subsequent Six Day test   ** 930 ppmv measured in Sample Event 1 at GI2-32.

10.2 Conclusion

In summary, extensive Zone A data conclusively demonstrate that combustion has not occurred since startup of the expanded SVE system, is not occurring presently, and is not expected to occur in the future. The parameters and their relationships supporting this evaluation are well understood, as are the nature and characteristics of Zone A. Consequently, the SVE system can be operated in more intensive manner, if implemented in a controlled, data-driven manner as discussed below.

10.3 Recommendations

Moving forward, the IWAG will complete the autoignition testing program for Zone A soil gas, as the last line of field evidence in this evaluation. It should be noted, however, that the composition and condition of the soil gas measured in Zone A do not suggest that autoignition of the gas is a concern at Zone A.

In addition, we recommend the following be applied as part of the on-going operation of the Zone A SVE system to monitor and assess critical parameters informing the conceptual site model.

- Continued monitoring temperature, particularly of the thermocouple locations that had small (≤ 5 ºF) increases in temperature during the testing program, with the recent re-programming of the dataloggers to measure temperature from Type T thermocouples from this point forward. Investigative work should be conducted to determine if the one inoperative thermocouple (TC2-16) can be brought back in service or otherwise be replaced if necessary.
- Track the shallow versus deep temperature thermocouple data to discern temperature fluctuations due to seasonal heating and significant barometric effects.
- Apply current landfill research that cautions against relying on single lines of evidence, particularly carbon monoxide alone, to assess subsurface combustion:
  - Barlaz et al. (2016) states "*[n]onetheless, concluding that a landfill is "on fire" based on elevated temperatures and elevated CO concentrations can be erroneous" and "Consequently, ETLFs often exhibit elevated temperatures and elevated CO concentrations, even though a landfill fire (combustion) is not present*."
  - Jafari et al. (2017a) advocated using these three criteria together for finding a "smoldering front": CO >1500 ppmv, and ratio of CH_4 to CO_2 less than 0.2; and in-situ waste temperatures >80 °C (176 °F). They concluded temperature was the most of these accurate metrics. Finally, they stressed that the "tail" of a smoldering front can be identified by high settlement rates (> 3% per year).
- Resume operation of the intermediate zone SVE wells after installation of the new RTO and upgraded monitoring and control system in a staged manner and carefully evaluate how soil gas concentrations and in-situ temperatures respond. Incorporate soil gas and vapor temperature data into the operational decisions for the SVE system to determine and calibrate the response of the Zone A system under different flowrate conditions.
- The consultant team has a high degree of confidence in our conclusions from the combustion study and believes data collection for implementation of the recommendations can be performed in the current periodic manner using discrete sample events. However, IWAG has advised they will evaluate and implement, if feasible, enhanced data collection methods with extraction from the intermediate wells to provide Ecology with additional assurances that operation of these wells would not result in combustion. One enhancement could be to implement continuous temperature monitoring of the in-situ soil thermocouples

and vapor from the intermediate wells with the data used as control parameters by the SVE process control system so as to rapidly identify any significant changes in the subsurface. The temperature monitoring data could be compared with other parameters relied upon in the recent landfill combustion literature to evaluate the conditions under which potential combustion could occur.

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April 24, 2017

ZONE A COMBUSTION EVALUATION REPORT
PASCO SANITARY LANDFILL

Pasco Sanitary Landfill
Pasco, WA

Appendices

Appendix A: Field Program Activities

Appendix B: Thermocouple and Soil Gas Probe Installation

Appendix C: Bucket Auger Boring Logs and Photographs

Appendix D: Temperature Data

Appendix E: Carbon Dioxide – Oxygen Ratios Stoichiometry

Appendix F: Soil Gas Analytical Data

Appendix G: Autoignition Test VOC Data

April 24, 2017

ZONE A COMBUSTION EVALUATION REPORT
PASCO SANITARY LANDFILL

Pasco Sanitary Landfill
Pasco, WA

Appendices

Appendix A: Field Program Activities

APPENDIX A. FIELD PROGRAM ACTIVITES

A.1 Field Program

The field program consisted of two separate activities. First, nine temperature/gas ("T/G") monitoring stations were installed into Zone A. Five were located between the randomly placed drums and stacked drums areas, three were located inside the randomly placed drum area, and one was placed outside of the eastern boundary of the stacked drum area. Second, six large-diameter bucket auger borings were advanced adjacent to the thermocouple (TC) / soil gas probe (GI) monitoring stations. Samples were collected from the mixed debris unit.

A.2 Temperature and Soil Gas (T/G) Monitoring Locations

Nine TC/GI monitoring locations were installed in Zone A and completed within the upper portion of the Touchet Beds (Figure A.1). Each location consisted of a co-located thermocouple array and a soil gas probe monitoring array. The thermocouple and soil gas probe arrays were installed in adjacent but separate boreholes. All TC and GI boreholes were drilled using rotosonic drilling methods.

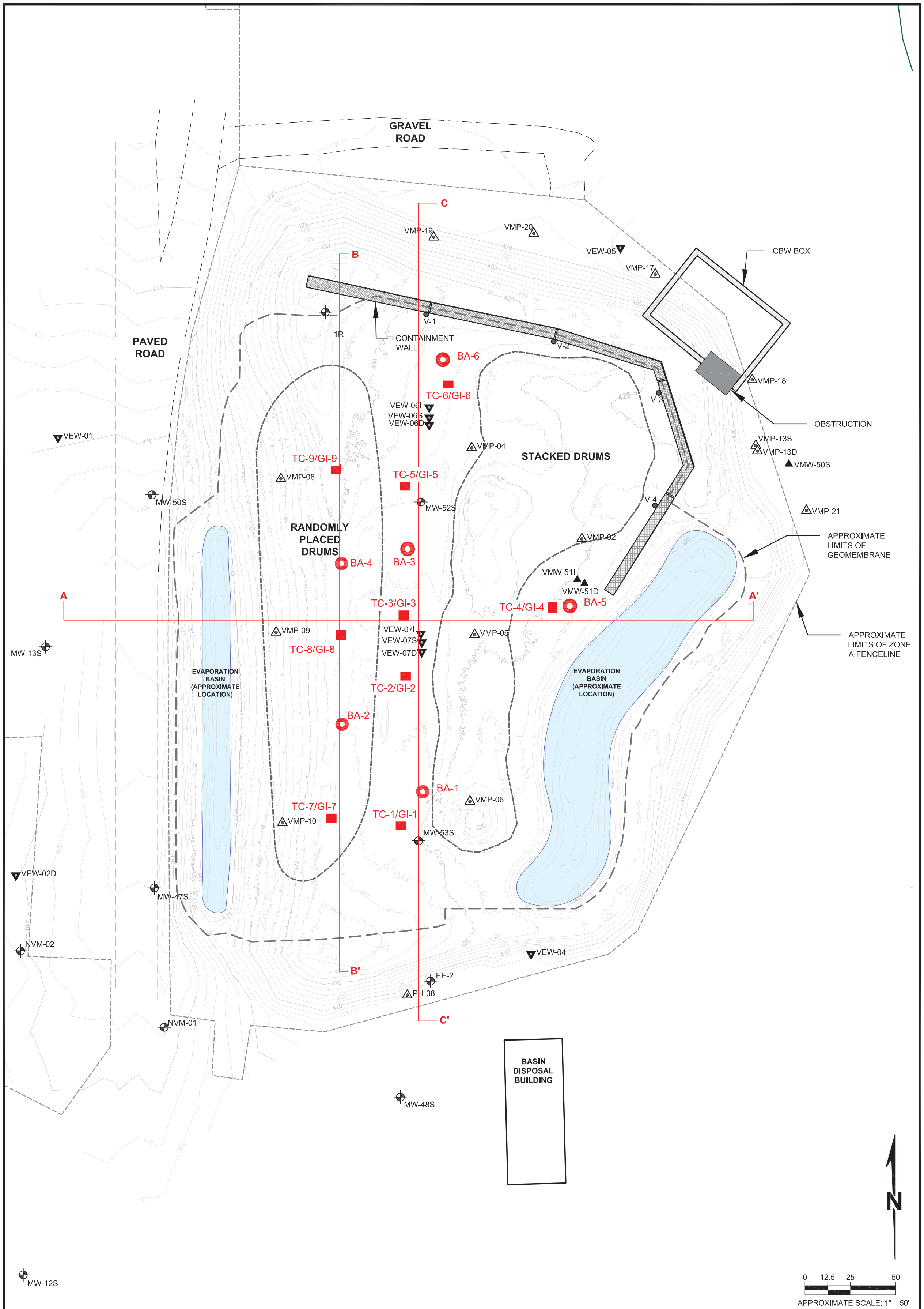
Installation depths for individual thermocouple and gas probes in areas within the randomly disposed drum area were generally based on the following criteria:

- Engineered fill at the original Visqueen elevation.
- Elevation corresponding to the original middle elevation of the randomly placed drum layer.
- Middle of the compacted/burned waste (if present, or if not present one near the bottom of the randomly placed drums).
- Middle of the mixed debris unit (if present).

Installation depths were discussed amongst IWAG representatives and selected if the features above were encountered, or based on other factors that may assist with data collection objectives.

Target depths for individual thermocouple and gas probes in areas outside of the randomly disposed drum area were generally determined based on the following criteria:

- Middle of the engineered fill layer of the 2002 cap.
- Engineered fill at the original Visqueen elevation.
- Elevation corresponding to the original middle elevation of the stacked drum layer.
- Middle of the mixed debris unit (if present).
- Approximately three feet into the native upper Touchet Beds.



NOTES

EB-1	EXPLORATORY BORING LOCATION
MW-53S	MONITORING WELL LOCATION
VMP-17	VACUUM MONITORING PROBE LOCATION
TC-1/GI-1	THERMOCOUPLE AND GAS MONITORING LOCATIONS
BA-1	BUCKET-AUGER BORINGS
A — A'	CROSS SECTION LOCATION

ENVIRONMENTAL PARTNERS INC

PROPOSED THERMOCOUPLE/GAS MONITORING AND BUCKET-AUGER BORING LOCATIONS

PROJECT	03916.0
PREPARED FOR	IWAG GROUP III PASCO LANDFILL
LOCATION	1901 DIETRICH ROAD PASCO, WASHINGTON

FIGURE	DRAWN BY	REVIEWED BY	DATE
3.1	VPB	ARM	4/19/17

The minimum vertical offset between individual thermocouples and gas probes is generally within 6 feet of each other. The boring for the soil gas probe was completed following installation of the thermocouple array. Gas probes were placed at or very near the same depths below the surface as the thermocouples.

Each of the thermocouple and soil gas probe arrays had five or six thermocouples or probes attached to a data logging device at the surface. Photos of typical thermocouple and soil gas probe installations can be found in Appendix B. The thermocouple arrays are similar in design and construction to the thermocouple arrays previously installed at the Site for monitoring subsurface temperatures in the Balefill Area, except installed using rotosonic techniques.

A.3 Drilling Locations and Preparation

The TC and GI locations were selected using geophysical data and bore log information from nearby wells. TC and GI locations are presented on Figure A.1. Borings for the TC and GI arrays were drilled using a rotosonic drill rig.

A chase truck and other support equipment were staged on the north side of Zone A. Necessary support equipment was transported to the drilling location using a skid loader. Separate exclusion zones were erected around each drill location to prevent unauthorized personnel from entering the drill areas.

Soil logging/data collection descriptions and the health and safety monitoring stations were set up up-wind or cross-wind from the drilling location based on conditions at the specific drilling location. Worker exposure monitoring described in the Health and Safety Plan (HASP) was implemented prior to and during drilling. Upgrading worker protection to Level C PPE was never required due to encountering exposure risks or personal air monitoring results.

A.4 Drilling Methods

Drilling was performed using a limited access, low ground pressure, track mounted drill rig. Drilling began at the ground surface and proceeded through the layers of the existing landfill cover system: woven geotextile, drainage layer, geomembrane, geosynthetic clay liner, geogrid, and engineered fill. The rig utilized a 6-inch inside diameter drill casing. The upper five feet of cover system were held in place by advancing a 10-inch diameter outer steel sleeve into the borehole. This casing stabilized the uppermost five feet and prevented the drainage layer from sliding back into the borehole.

Drilling proceeded in 5-foot intervals. Following each 5-foot interval or when the final target destination was reached, drilling was stopped and the casing removed from the borehole. Drill cuttings from each continuous 5-foot interval were placed in a 5-foot long clear polyethylene plastic bag. The bag was immediately placed into a plywood corebox labeled with the boring designation, sample interval, and orientation.

At the terminal depth of drilling, the boring was checked for total depth using a weighted tape measure dropped inside the casing. Following confirmation of the terminal depth, either a thermocouple array or soil gas monitoring array was constructed alongside the boring awaiting installation. Construction of these arrays is discussed below.

The retained soil samples were logged and inspected as described below.

When it was not possible to complete a boring within a working day, the uncased portion of the boring was sealed with bentonite. During advancement of drilling prior to reaching the terminal depth, the bottom foot of the borehole was sealed with bentonite and hydrated. Reasons for not completing a borehole included inclement weather and lack of daylight.

A.5 Soil Logging and Observations

The bagged and continuous soil cores were placed in prefabricated plywood coreboxes labeled with borehole number and depths. Each core was inspected, field screened, and logged.

At each location, the boring for the thermocouple array was drilled first, and continuously logged to determine the target depth for the thermocouples and soil gas probes. Logging consisted of describing soil conditions using the Unified Soil Classification System (ASTM D2488 with visual-manual procedures) in addition to descriptions of non-soil debris. Non-soil materials were described by their apparent colors, compositions and relative abundances in the soil matrices. In some cases, recovery of soils and/or debris was prohibitive, particularly in dry, fine materials.

The soil conditions were screened using a thermocouple to assess the temperature, and a photoionization detector (PID) to assess the presence of VOCs. Logging and photography of the soil cores required that the core bags be cut open to allow inspection. PID measurements, soil descriptions, and other noteworthy observations were recorded on the boring logs.

As 5-foot soil-core intervals were extracted, the contents were removed from the borehole, and transferred to plastic liners. Snow was often used to cool the contents of the drilling barrel prior to transferring into the liners, due to the added temperatures of the rotosonic drilling method. Liners with the soil and debris contents were directly transferred to wooden core-boxes for each 5-foot core, awaiting field measurements and soil logging descriptions. Temperatures were immediately collected approximately every foot of the soil cores by inserting a direct-reading Type K thermocouple and handheld temperature monitoring device into the center of the soil core and allowing the temperature(s) to stabilize. Internal temperatures and corresponding depths were recorded on the boring logs. Soils were insulated as practicable between the time of their removal and temperature data collection to prevent thermal cooling of the soils prior to data collection.

Temperature readings from the Type K thermocouple were several degrees higher than temperature readings from the handheld Infrared (IR) thermometer. In order to provide a more conservative portrait of subsurface temperatures, the thermocouple was used to collect soil core temperatures during drilling.

PID measurements were collected after temperature measurements, and before the core bags were cut for visual inspection. The core bags were generally punctured at five locations (at 1-foot intervals) and the inlet tube to the PID was inserted into the headspace between the bag and the soil core. For health and safety reasons, olfactory observations of the soils were not permitted.

Logging and photography of the soil cores were performed after temperature and PID screening. The core bag was cut open to allow for visual inspection. Soil types were logged using the Unified Soil Classification System (ASTM 2488D) by a Washington State Professional Engineer. The relative abundance of each natural soil material such as silt, sand, and gravel was noted as well as the apparent visual percentage of non-natural waste for each soil type. Waste types were inspected and described. Photographs of each soil core were collected following soil logging activities. Additional photographs of items of particular interest were also taken.

After inspection, the core boxes were taped closed, stacked on a pallet, and covered with plastic. The stored cores will remain onsite until disposal and managed as IDW as described below.

The boring logs are provided in Attachment B. Geologic cross sections showing data generated from this project are shown in Figures 3a, 3b, and 3c (see main report). These cross sections include key excerpts of the boring logs from zones that contain mixed debris.

A.6 Thermocouple Array Installation

Thermocouple Field Program

A total of nine thermocouple arrays were installed in the locations indicated on Figure A.1. Prior to installation, the drilling cores were inspected to determine the depths at which the thermocouples would be installed. The thermocouple installation depths were determined based on comparing the pre-determined Target Zones presented above with relative soil temperatures and compositions in the soil cores. If a previously described “burned debris” or “mixed garbage and debris” layer was not encountered, depths were generally selected where potentially combustible materials existed in the soils at a greater content. Thermocouple installation depths are presented in Table A.1.

The thermocouple array was constructed above ground upon completion of the boring. A ½-inch diameter rod of CPVC was constructed adjacent to the hole. At each selected elevation, a single T-type thermocouple with a stainless steel sheath was connected to the outside of the rod. The stainless steel sheaths from each thermocouple were rolled alongside the rod to prevent coiling, and were connected to the rod using duct tape; see Photo 1.

The assembled thermocouple array was then lowered into the casing. After setting the thermocouple array into the casing, bentonite was placed to a depth of 6-inches below the bottommost thermocouple. After bentonite, 12-inches of sand pack consisting of #10/20 clean washed Colorado Silica Sand was placed into the casing, covering 6-inches below the thermocouple to 6-inches above the thermocouple. The surrounding casing was lifted as sand was placed in order to ensure the sandpack covered the thermocouple. Bentonite chips were then placed above the sand to a depth of 6-inches below the next thermocouple. The bentonite chips were hydrated by pouring about 5-gallons of tap water down the boring. The rotosonic well casing continued to be removed as alternating sand and bentonite were placed up to the geomembrane. Appendix B shows a typical completed thermocouple array.

Concrete was placed between one foot above the geomembrane and the ground surface. The 10-inch steel sleeve remained in the ground and extends above ground surface outside of the well monument. After drilling was completed, each thermocouple and gas probe array was excavated to expose the geomembrane and surrounding area to allow for sealing of the boot as indicated on Appendix B. The 10-inch diameter steel sleeve was used to accommodate a proper seal with the geomembrane. The sleeve extends approximately above the geomembrane into the concrete seal. The inside of the sleeve was filled with bentonite and hydrated to form an airtight seal between the sleeve and the thermocouple leads. The thermocouple array seal and surface seals were completed with bentonite inside the top of the thermocouple sleeve to provide a seal around the thermocouple bundle. Concrete was added around the outside of the sleeve to support the well monument. Wells were completed under the supervision of a licensed well driller and in accordance with Minimum Standards for Maintenance and Construction of Wells (Washington Administrative Code [WAC] 173-160).

Prior to boot installation, the mating surface between the boot and existing geomembrane was thoroughly cleaned. The boot was temporarily sealed with butyl tape. After placement of all boots, the boots were welded into place by Northwest Linings, by persons certified in geomembrane welding.

After boot sealing was completed, the area surrounding the thermocouples was backfilled and a monument was installed. The annulus between the well casing and the monument was sealed with cement grout and the area around the base of the monument was backfilled with concrete.

A 1-inch diameter hole was drilled through the side of the well monuments at each TC location to allow the thermocouple lead wires to pass out of the monument into a control box fastened atop the well monument. The control box contains the data loggers that store temperature data. The wires passing from the monument to the control box are covered with corrugated plastic cord covers to prevent damage to the leads. Data loggers collect and store information in 1-hour intervals.

Cross sections showing in-situ temperature data generated from this project are shown in Figures 4a, 4b, and 4c (see main report).

Troubleshooting Actions

Data from three different thermocouple depths (TC2-16, TC2-27, and TC6-29) resulted in very high variability and diurnal temperature variations during the Jan-25 to Mar-2, 2017 timeframe. Upon further investigation, it was discovered that Type K extensions were attached to the subsurface Type T thermocouples in order to allow for adequate length during the field installation. Discussions with the thermocouple vendor (TC Direct) indicated that having two dissimilar thermocouple types connected for extension purposes can create an additional “measurement point” at the point of the extension connection. As such, the recorded temperatures during the time period were likely of surface temperatures. The extensions at TC-27 and TC6-29 were removed prior to the six-day validation test described below. The extension at TC2-16 was buried deep and could not be removed at this location. As such, collected data was considered invalid at this depth.

Additionally, on March 28, it was discovered that the data loggers had not been programmed to read the Type T thermocouples installed for the Zone A investigation, but were still programmed to read Type K thermocouples that were used in the Balefill investigation. The data logger vendor provided an approximate correction factor which indicated the current programming only resulted in a small (1/42 or 2.4%) error in the temperature collected to date. However, because: 1) the vendor said the correction was approximate, 2) it was important to have confidence in the temperature data collected to date, and 3) the tight Zone A report schedule, the team felt it was a high priority to confirm the magnitude of the error was indeed small, consistent with the vendor information.

A six-day validation test was then performed. The validation test consisted of taking hourly data from all locations and depths for three days: i) without Type K extensions at any location except TC2-16; and with ii) data loggers programmed to read the original Type K thermocouples as done during the January 25 – March 2, 2017 time period. After the first three-day period, all data loggers were reprogrammed to read Type T thermocouples and an additional three days of hourly data were collected for comparison. The results of the six-day test confirm the error was small (0.8%). As such, data collected to date was not corrected.

Finally, temporary and artificial temperature increases ("spikes") occurred after plugging data loggers into the thermocouples each data collection sampling date. This artifact of initially plugging thermocouples into data loggers was confirmed by the data logger vendor. As such, data from these spikes were disregarded in summary statistics shown below, but were maintained in the time series figures, along with the dates that data was downloaded.

A.7 Soil Gas Probe Array Installation

A total of nine soil gas probe arrays were installed at the locations indicated on Figure A.1, adjacent to and at the same depth as a corresponding thermocouple. Appendix B shows a typical completed soil gas probe array.

Each probe consists of a 3-inch long stainless steel screen or "implant" (see Appendix B for details). To ensure a tight seal between the tubing and the screen, each probe was connected to the ¼-inch diameter Teflon tubing with stainless steel ferrules and compression fittings.

The soil gas probe arrays were constructed in a process similar to the thermocouple arrays: using a ½-inch diameter CPVC rod with a single soil gas probe with tubing duct taped to the outside of the rod at each selected elevation (Photo 2).

The completed soil gas probe array was then lowered into the hole, and the hole backfilled in a process similar to the thermocouple array by alternating 1-foot think layers of sand pack around the screens and hydrated bentonite chips above. The 10-inch steel casing remained in the borehole, and the uppermost 2-feet of the borehole were filled with cement. At the surface, the ¼-inch diameter Teflon tubing from each soil gas probe was completed with a spring-activated quick-connect type compression port to allow for discrete sampling events. The quick-connect fittings are housed within the well monument.

The geomembrane booting and patching procedures were the same as for the thermocouple array patching.

Cross sections showing in-situ soil gas data generated from this project are shown in Figures 5a, 5b, and 5c (see main report).

A.8 Surveying

After the monuments were completed, all thermocouple and soil gas probe arrays were surveyed for horizontal and vertical coordinates. The top of each well monument rim and horizontal positions were surveyed to the nearest 0.01-foot. Surveyed points were marked on the monument. All locations were surveyed by a Washington-licensed land surveyor, referenced to semi-permanent monuments already onsite, and tied to the State Plane Coordinate System (NAD 1983-91) and NAVD88.

A.9 Rotosonic Soil Cores and IDW Management

The soil cores generated during the rotosonic drilling are stored onsite in sealed wooden coreboxes labeled with the drilling date, borehole name, and depths to allow for possible further investigation. The cores are currently stored in a temporarily fenced-off region immediately north of Zone A, and will be stored there until completion of final reporting.

A.10 Bucket Auger Investigation

SCS Engineers (SCS) personnel were onsite between February 13 and February 16, 2017, to observe and log the material recovered from six large diameter bucket auger borings. The borings were advanced by Donald B. Murphy Contractors (DBM), Inc. (Driller) using an IMT AF180 drill rig with a 5-foot long 24-inch diameter core barrel auger and 5-foot long 24-inch diameter open flight auger tooling. Recovered materials were brought to the surface where they were documented and inspected by SCS for the following:

- Depth of the recovery, and the corresponding pass number, as reported by the Driller.
- Material characteristics and descriptions of encountered soils, geosynthetics, and encountered debris were recorded to the extent possible. The visual material characteristics recorded included, but were not limited to:
  - Color(s) of the encountered material(s),
  - Moisture content,
  - Presence of ash or combusted material, and
  - Estimation of each materials percentage in the recovery (by volume).
- Temperature, as recorded by a handheld infrared (IR) thermometer.
- Presence of smoke and/or steam (if present).
- Presence of encountered liquids.
- Driller's notes and comments regarding the progress of the boring, and descriptions of the work performed by the Driller were also recorded as appropriate.

Odor was listed in the Work Plan (IWAG, 2016.) as a characteristic that would be documented during the advancement of the large diameter borings. Once the borings penetrated the geomembrane of the Zone A final cover system, odors readily escaped from the borings. Because of the proximity of the spoils piles to the borings, it was not possible to distinguish between the odors related to material being logged and the odors from the borings.

Each of the six borings were advanced until reaching the native Touchet soil bed that underlies Zone A as described in the Work Plan. Total depths of the borings ranged between 34 and 38 feet below ground surface (ft bgs) as reported by the Driller. Boring logs are included as Appendix C.

For each interval logged, the recovered materials were brought to the surface on or within the tooling being used to advance the boring, open flight auger or core barrel auger, respectively. The Driller elected to use different tooling depending on the subsurface conditions encountered. The open flight auger was primarily used where non-cohesive or loose soils and/or materials were encountered. The core barrel was used when advancing through cohesive soils and/or materials or where compaction of the recovered materials could be achieved. Regardless of the tooling used, the recovery brought to the surface represented disturbed samples, with a portion of the recovery often being slough. Slough is commonly defined as materials that have crumbled and fallen away from the sides of the boring and accumulate at the bottom between passes of the tooling. Recovered slough in the large diameter borings were typically the result of loose material and/or soils, or where removal of the tooling caused a disturbance to the bore hole.

Each portion of recovery consisted of a 3 to 5-foot thick section of materials, recovered by advancing the boring 0.5 to 2 feet, as reported by the driller. The upper portion of the recovery typically consisted of slough from the previous pass that had accumulated within the boring. Depending on the boring, cohesiveness of the soils and/or materials, tooling used, and operation of the drill rig, the amount of slough encountered was typically responsible for the upper 2 to 3 feet of the recovery. The remaining portion of the recovered materials was then representative of the interval being drilled through.

Encountered slough was accounted for by SCS personnel when preparing the logs by only recording the bottom portion of the recovery, below the thickness of slough. With the open flight auger, the logs were prepared by having the Driller's personnel remove recovered materials from the bottom flights of the auger, below the slough, for inspection and documentation. The bottom section of the materials recovered by the core barrel was removed for inspection by having the Driller agitate the tooling, dislodging the bottom section of the recovery.

Where the Driller was not able to advance the depth of the boring from the previous pass, due to the amount of slough encountered, additional cleanup passes were required to remove the slough. Cleanup of the encountered slough consisted of one to six additional passes of the tooling in the boring. The number and locations of the cleanup passes that were required in borings BA-1, BA-2, BA-4, and BA-5 are noted on the boring logs included in Appendix C. Additional cleanup passes to advance the boring were not required in borings BA-3 and BA-6.

Following recovery, the materials were documented for the items outlined above and as described in the Work Plan and any desired samples collected. During the drilling process, two to six bulk bag samples of the recovered materials were collected where mixed debris was encountered. Each bulk bag was labeled with the boring number, depth at which the sample was obtained, and the date and time of collection. At the end of each day, SCS personnel reviewed the field boring log(s) and selected up to three samples from the boring(s) to be field-preserved and sent to the laboratory for TVS analysis. After collecting and preserving the samples for TVS analysis, the bulk bag samples that had been collected were placed in water tight 5-gallon plastic containers. These containers were labeled for each boring and set aside with the soil cutting drums for disposal at the end of the project. Additional information regarding the sampling procedures and results are discussed in Section 8. Each recovery (pass of the bucket auger tooling) was photographed as part of the documentation for each boring. A photographic log of the recovered materials from each boring is included as Appendix C.

Following documentation, the recovered materials were disposed of as described in the Work Plan. Recovered soils from above the layer(s) of mixed debris, generally above the Visqueen layer, were stockpiled separately and used for backfilling the boring as described in Section 4.2. In the borings where the Visqueen was not observed, the recovered materials and soils that had the potential to contain mixed debris were containerized in 55-gallon drums. Each drum was labeled with the boring number and recovery interval and stockpiled for disposal within the fenced compound near the site entrance.

A.11 Bucket Auger Boring Logs

Complete boring logs for each boring can be found in Appendix C. A summary of the observations and measurements made at each boring can be found in Table A.1 below.

Table A.1: Summary of Boring Completion

Well Designation	BA-1	BA-2[1]	BA-3	BA-4	BA-5	BA-6
Date and Time Boring Started	2/14/2017 12:40PM	2/13/2017 11:00AM	2/15/2017 07:35AM	2/14/2017 07:40AM	2/15/2017 11:40AM	2/16/2017 07:30AM
Date and Time Backfill Completed	2/14/2017 04:45PM	2/14/2014 10:19AM	2/15/2017 11:20AM	2/14/2017 12:20PM	2/15/2017 02:25PM	2/16/2017 09:45AM
Total Depth of Boring (ft-bgs)[2]	38	35	36	36	34	36
Depth to Visqueen (ft-bgs)[2][3]	14	NA	15	18.5	NA	18
Minimum Observed Temperature (°F)[4]	82.5	48.0	39.0	83.0	78.5	88.0
Maximum Observed Temperature (°F)[4]	117.0	100.0	107.1	128.0	118.0	121.5
Average Observed Temperature (°F)[5]	102.1	79.9	84.1	97.0	99.2	104.0
Average Ambient Temperature During Boring (°F)[6]	26	29	30	26	30	38

Notes:

1. Backfill of BA-2 completed to the depth of encountered geomembrane the same day as boring. Final backfill to surface completed the following day.
2. All depths recorded as reported by the Driller, unless noted otherwise.
3. Depth the Visqueen noted if observed. NA = Not Applicable.
4. Recorded by SCS using a hand-held IR thermometer following recovery of materials.
5. Average of all temperatures recorded in the boring.
6. As recorded by local weather station KPSC, approximately 3.1 miles away from the site.

BA-1: Recovered soils above the encountered layer of Visqueen were characteristic of silty sands and sandy gravels. Layers of geotextile, geomembrane, and geogrid were encountered above the layer of Visqueen. Soils below the Visqueen layer were characteristic of low plasticity sandy silts and silty sands. Decomposed refuse was observed in lenses mixed in various proportions with the adjacent soils. Backfill of the boring was completed with well graded 3/4-inch crushed rock, two 3-foot-thick hydrated bentonite chip seals, and clean soil removed from the section of the boring above the Visqueen layer. Three samples were collected for TVS analysis from the layers of soil mixed with decomposed refuse (commonly referred to as the mixed debris layer).

BA-2: A Visqueen layer was not observed in this boring. A single layer of geotextile and two layers of geomembrane were observed as shown in the boring log. Recovered soils were characteristic of low plasticity silts, silty sands, and silty sandy gravels. Decomposed refuse was observed primarily in mixtures with silt. Backfill of the boring was completed with well graded 3/4-inch crushed rock, a 3-foot thick hydrated bentonite chip lower seal, a 5.5-foot thick hydrated bentonite chip upper seal, and clean soils removed from the boring above the encountered refuse. Three samples were collected for TVS analysis within the mixed debris layer.

BA-3: Recovered soils above the encountered layer of Visqueen were characteristic of silty sand with lenses of sandy gravel. Layers of geotextile, geomembrane, and geonet were encountered above the layer of Visqueen. Soils below the Visqueen layer were characteristic of silty sands and low plasticity silts. Decomposed refuse was observed in lenses mixed in various proportions with the adjacent soils. Backfill of the boring was completed with well graded 3/4-inch crushed rock, a 3.5-foot thick hydrated bentonite chip lower seal, a 3-foot thick hydrated bentonite chip upper seal, and clean soil removed from the section of the boring above the Visqueen layer. Three samples were collected for TVS analysis within the mixed debris layer.

BA-4: Recovered soils above the encountered layer of Visqueen were characteristic of low plasticity silts with lenses of well graded sand, silty gravel, and silty sand. Layers of geotextile, geomembrane, and geogrid were observed above the Visqueen layer. Soils encountered below the Visqueen layer were characteristic of silty sand and sandy silt. Decomposed refuse was observed in lenses mixed in various proportions with the adjacent soils. Backfill of the boring was completed with well graded 3/4-inch crushed rock, a 4-foot thick hydrated bentonite chip lower seal, a 5.5-foot thick hydrated bentonite chip upper seal, and clean soil removed from the section of the boring above the Visqueen layer. Three samples were collected for TVS analysis within the mixed debris layer.

BA-5: A Visqueen layer was not observed in this boring. Two layers of geotextile and two layers of geomembrane were observed in the boring. Recovered soils were characteristic of silty sand, poorly graded gravel, and low plasticity silt. Decomposed refuse was observed in lenses mixed in various proportions with the adjacent soils. Backfill of the boring was completed with well graded 3/4-inch crushed rock, two 3-foot thick hydrated bentonite chip seals, and clean soils removed from the boring above the encountered refuse. Three samples were collected for TVS analysis within the mixed debris layer.

BA-6: Recovered soils above the Visqueen layer were characteristic of silty sand and poorly graded gravel. Three layers of geotextile and a layer of geonet were encountered above the Visqueen layer. Soils encountered below the Visqueen layer were characteristic of silty sand and sandy silt. Decomposed refuse was observed in lenses mixed in various proportions with the adjacent soils. Backfill of the boring was completed with well graded 3/4-inch crushed rock, two 3-foot thick hydrated bentonite chip seals, and clean soil removed from the section of the boring above the Visqueen layer. Two samples were collected for TVS analysis within the mixed debris layer.

REFERENCES

IWAG Group III, 2016. Revised Detailed Work Plan to Evaluate Potential Combustion in Zone A (Work Plan). In association and consultation with GSI Environmental, SCS Consultants, Anchor QEA, and Environmental Partners Inc.

April 24, 2017

ZONE A COMBUSTION EVALUATION REPORT
PASCO SANITARY LANDFILL

Pasco Sanitary Landfill
Pasco, WA

Appendices

Appendix B: Thermocouple and Soil Gas Probe Installation

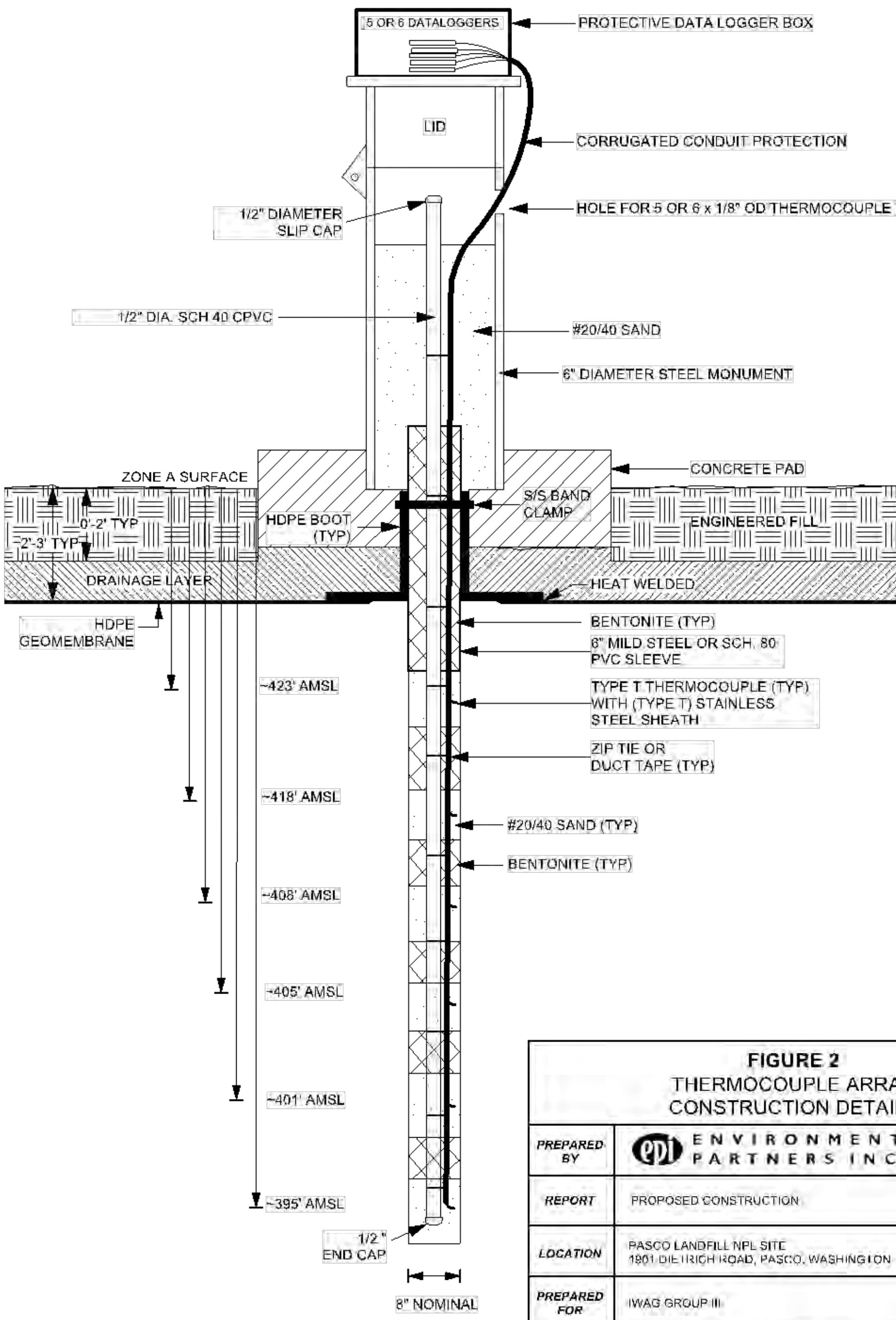


FIGURE 2 THERMOCOUPLE ARRAY CONSTRUCTION DETAILS	
PREPARED BY	ENVIRONMENTAL PARTNERS INC
REPORT	PROPOSED CONSTRUCTION
LOCATION	PASCO LANDFILL NPL SITE 1901 DIETRICH ROAD, PASCO, WASHINGTON
PREPARED FOR	IWAG GROUP III

DATE	DRAWN BY	REVIEWED BY	PROJECT NUMBER
10/26/16	VPB	ARM	03915.0

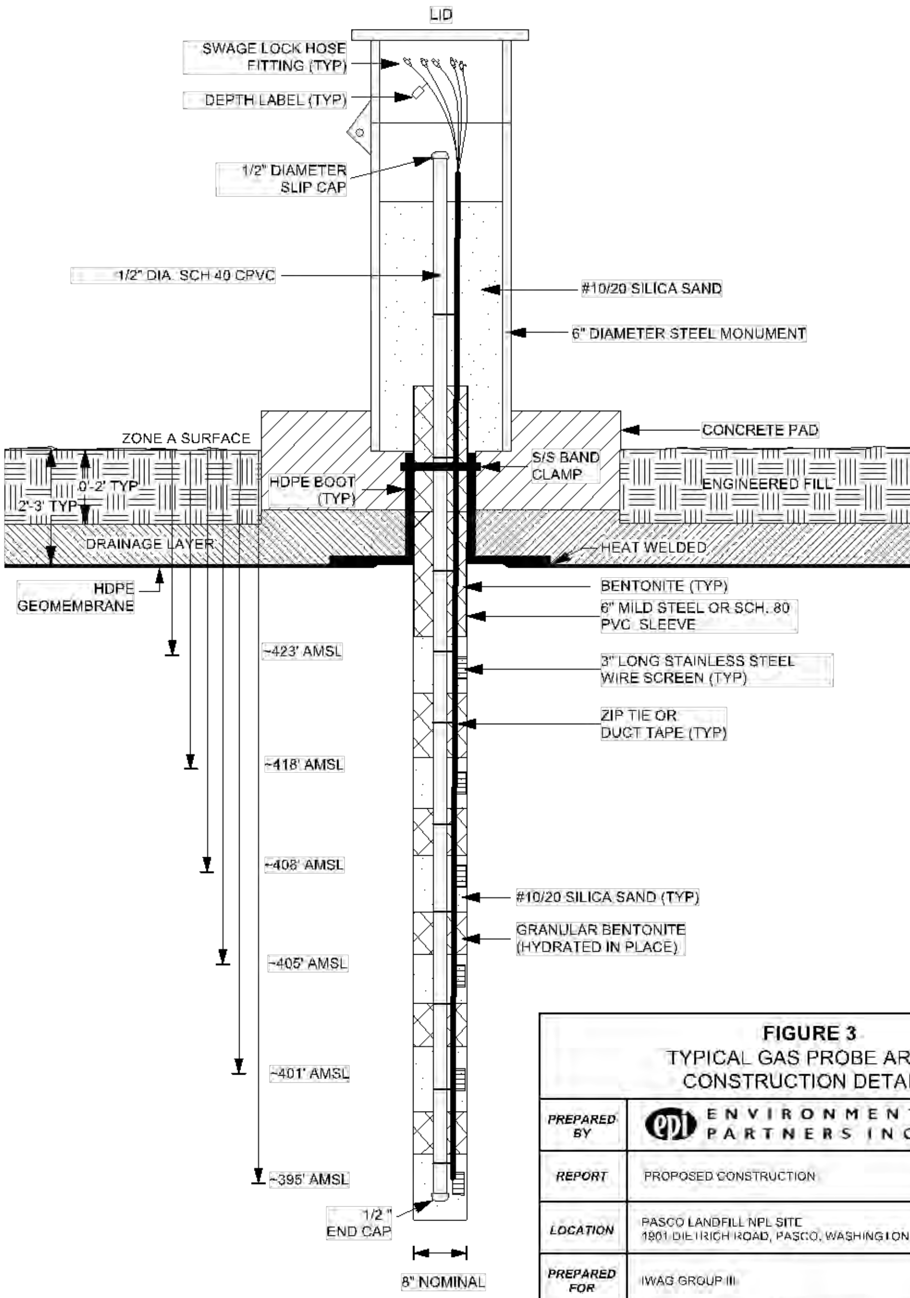


FIGURE 3 TYPICAL GAS PROBE ARRAY CONSTRUCTION DETAILS			
PREPARED BY	EPI ENVIRONMENTAL PARTNERS INC		
REPORT	PROPOSED CONSTRUCTION		
LOCATION	PASCO LANDFILL NPL SITE 1901 DIETRICH ROAD, PASCO, WASHINGTON		
PREPARED FOR	IWAG GROUP III		
DATE 10/26/16	DRAWN BY VPB	REVIEWED BY ARM	PROJECT NUMBER 03915.0

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PRICE: 44.95

3" Stainless Steel Implant w/ 1/8" Swagelok Fitting Description

These implants are constructed of double woven stainless steel wire screen. With the Swagelok fitting, the implant will accept 1/8" OD tubing sizes. The solid end allows for either an anchor point or open-hole placement.

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Optional Steel Anchor Point for 3", 6", 12" Vapor Implants   **Qty:**

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ENVIRONMENTAL PARTNERS INC

BORING ID: GI-1 DRAFT

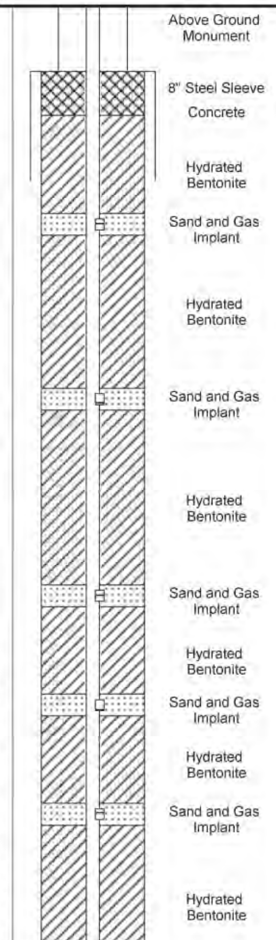
SITE ADDRESS: **1901 Dietrich Rd, Pasco, Wa**	CLIENT: **IWAG Group III**	CASING MATERIAL AND SIZE: **3" gas impants**
DRILLING CONTRACTOR: **Cascade Drilling LP**	PROJECT #: **03916**	SCREEN SIZE: **N/A**
DRILLING EQUIPMENT: **Limited Access Rig**	DATE: **1/5/17**	SCREEN INTERVAL: **N/A**
DRILLING METHOD: **Roto Sonic**	GROUND SURFACE ELEV. FT AMSL: **425'**	FILTER PACK: **20/40 Sand**
LOGGED BY: **A. Morine** / BOREHOLE SIZE: **6"**	TOTAL DEPTH: **40' bgs**	FILTER PACK INTERVAL: **N/A**

Description: USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other

USCS	Description	Interval & % Recovery
	Above Ground Monument	
ML	SILT; brown; damp; no odors; vegetative soil cover	100
GP	Pea gravel 4': Geomembrane	
ML	SANDY SILT; trace gravel; light olive brown; dry	
SM	SILTY SAND WITH GRAVEL; few cobbles; light gray; damp; odors	100
ML	SILT WITH GRAVEL; 20% gravel, 25% sand; olive gray; damp; odors 12': Geogrid	
ML	SILT; 5%-10% fine sand; olive gray; damp; odors	100
ML	SILT WITH SAND; 20% fine sand; olive gray; damp; odors 2" gray silt 4" wood fragments, cardboard, plastic; 80% non-soil debris; 20% soil	100
ML	SILT; 90% silt, 10% wood and plastic debris; black	80
	Compacted debris; cardboard and chunks of wood; black on outside of wood, not on inside	
ML	SILT; silt with wood and glass; dark gray	
	Wood debris with silt; few glass; black; moist; strong odor	100
ML	SILT; dark gray; damp; odors Trace wood fragments	
ML	SILT; trace fine sand; dark olive gray; damp; strong odors; no debris	100
		100
	End of Borehole	

Depth (feet)	Elevation (ft AMSL)	Temperature F°	PID (ppm)
0	425		
1		33	2.8
2		45	16.4
3		53	6.2
4	421	65	1.7
5		96	1.2
6		81	1.9
7		94	2.8
8	417	107	1.5
9		127	3.2
10			3.4
11		154	48
12	413	176	25
13		158	13.8
14		158	4
15		160	4.5
16	409	155	7.4
17		161	8.8
18		164	29.9
19		171	48
20	405	169	1023
22		170	327
23		179	834
24	401	167	540
25		170	278
26		196	1048
27		195	1141
28	397	177	>3000
29		185	>3000
30		203	1500
31		177	>5000
32	393	185	2500
33		186	5000
34		191	5000
35		194	5000
36	389	195	>5000
37		183	>5000
38		188	>5000
39		196	>5000
40	385	206	>5000

Well Construction



NOTES:

1 of 1

ENVIRONMENTAL PARTNERS INC

BORING ID: TC-2 DRAFT

SITE ADDRESS **1901 Dietrich Rd, Pasco, Wa**	CLIENT: **IWAG Group III**	CASING MATERIAL AND SIZE: **Thermocouple**
DRILLING CONTRACTOR: **Cascade Drilling LP**	PROJECT #: **03916**	SCREEN SIZE: **N/A**
DRILLING EQUIPMENT: **Limited Access Rig**	DATE: **1/16/17 - 1/17/17**	SCREEN INTERVAL: **N/A**
DRILLING METHOD: **Roto Sonic**	GROUND SURFACE ELEV. FT AMSL: **427'**	FILTER PACK: **20/40 Sand**
LOGGED BY: **C. McFadden/A. Morine** — BOREHOLE SIZE: **6"**	TOTAL DEPTH: **38' bgs**	FILTER PACK INTERVAL: **N/A**

Depth (feet)	USCS	Description USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other	Interval & % Recovery	Elevation (ft AMSL)
		Above Ground Monument		
0	ML	SILT; brown; damp; no odors; vegetative soil cover	100	427
4	ML	SILT; trace fine to coarse sand; light brown; moist; soil cover		423
	ML	SANDY SILT; brown; dry; same as 9-10'	75	
8	ML	SILT; trace sand; no debris		419
	ML	SANDY SILT; 30% fine grained sand, 10% gravel, 60% silt; dark brown; moist Same as above; damp		
12	ML	SILT; light brown; trace sand; trace gravel; dry at 13.5' 14.5': 2 layers of Visqueen; >99% soil	100	415
16	ML	GRAVELY SILT; mostly silt with some gravel and few round cobbles; dark brown		411
	ML	SILT; dark brown 18': Same as above; 1 plastic piece 19.5': Same as above; concrete pieces; trace organic debris	100	
20	ML	SILT; brown; damp; no debris	100	407
24				403
	ML	SILT; dark brown; moist 25.5': Same as above; black rubber piece		
28		Spongy material; gray; non-native; stretches and becomes stringy and resin-like	100	399
	ML	SILT; dark brown; moist		
32		33': Same as above; piece of metal; round; cut by rig	100	395
36	ML	SILT; brown; damp; no debris	100	391
		End of Borehole		
40				387

Temperature F°	PID (ppm)
103	12.7
101	14.3
108	15
147	17
139	10
140	16
124	17
107	
135	31
160	28
170	37
174	63
180	79
188	92
187	145
200	37
197	39
182	66
163	
154	79
188	16
189	81
190	82
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203	97
	85
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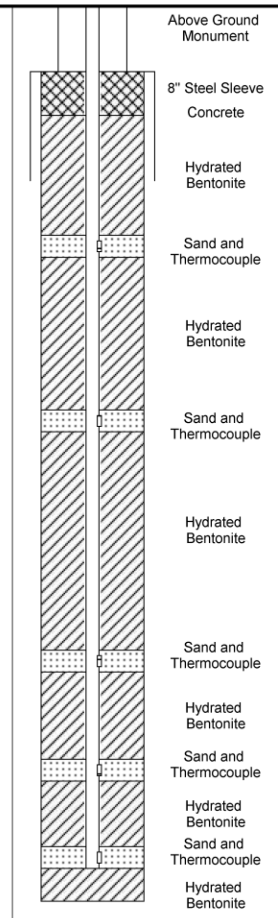
185	
183	
178	
174	
182	2500
192	
167	

Well Construction



NOTES:

1 of 1

ENVIRONMENTAL PARTNERS INC

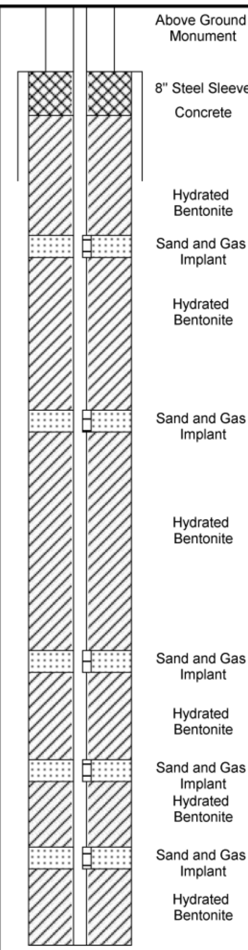
BORING ID: GI-2 DRAFT

SITE ADDRESS: **1901 Dietrich Rd, Pasco, Wa**	CLIENT: **IWAG Group III**	CASING MATERIAL AND SIZE: **3" gas impants**
DRILLING CONTRACTOR: **Cascade Drilling LP**	PROJECT #: **03916**	SCREEN SIZE: **N/A**
DRILLING EQUIPMENT: **Limited Access Rig**	DATE: **1/17/17**	SCREEN INTERVAL: **N/A**
DRILLING METHOD: **Roto Sonic**	GROUND SURFACE ELEV. FT AMSL: **427'**	FILTER PACK: **20/40 Sand**
LOGGED BY: **A. Morine/C. McFadden**; BOREHOLE SIZE: **6"**	TOTAL DEPTH: **40' bgs**	FILTER PACK INTERVAL: **N/A**

Depth (feet)	USCS	Description (USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other)	Interval & % Recovery
above 0		Above Ground Monument	
0–4	ML	SILT; brown; damp; no odors; vegetative soil cover; 4': Geofabric	100 (0–5)
4–5	GP	Pea gravel drainage layer; 5': HDPE liner	
5–6	ML	SILT WITH GRAVEL	80 (5–10)
6–7	ML	GRAVELY SILT; gray/brown; damp; no odors	
7–8	ML	SILT; brown; damp; no odors	
8–12.5	ML	GRAVELY SILT; gray/brown; damp; no odors; 12.5': Geogrid	100 (10–15)
12.5–19.5	ML	SILT; trace fine sand; brown; moist; no odors; no debris	100 (15–20)
19.5–20.5	GM	SILTY GRAVEL WITH SAND; brown; moist; strong odors; no debris	
20.5–25	ML	SILT; trace fine sand; damp-moist; Same as above; dark brown; some organics; 24.5': Same as above; rubber chunk; one piece of metal with silt and concrete	100 (20–25)
25–30	ML	SILT; trace fine sand; damp; odors; 26': Same as above; trace rubber and metal pieces	100 (25–30)
30–31.5	ML	SILT; trace fine sand with few metal drum pieces; damp; odors	100 (30–35)
31.5–32.5	ML	SILT; trace fine sand; damp; odors; no debris	
32.5–33.5	ML	SILT; trace fine sand with few metal drum pieces; damp; odors	
33.5–40	ML	SILT; trace fine sand; medium brown; moist; strong odors; no debris	20 (35–40)
40		End of Borehole	

Depth (feet)	Elevation (ft AMSL)	Temperature F°	PID (ppm)
0	427		
2		37	2.5
3		46	3.6
4	423	55	2.4
5		93	2.2
6		51	18.8
7		78	13
8	419	103	14.2
9		112	13.2
10		170	15
11		162	123
12	415	152	180
13		156	802
14		166	650
15		186	241
16	411	193	
17		155	
18		157	
19		171	
20	407	198	
21		201	601
22		172	627
23		173	782
24	403	173	737
25		175	761
26		183	1,114
27		160	1,500
28	399	163	3,000
29		160	3,500
30		174	3,800
31		159	780
32	395	157	1,800
33		172	2,200
34		163	2,200
35		163	2,200
36	391	165	2,062
40	387		

Well Construction



NOTES:

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ENVIRONMENTAL PARTNERS INC

BORING ID: TC-3 DRAFT

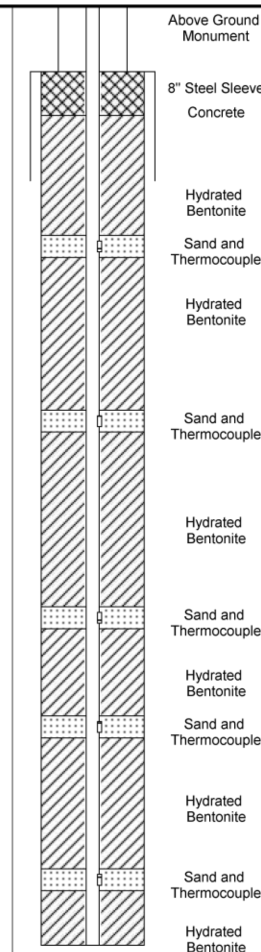
SITE ADDRESS: **1901 Dietrich Rd, Pasco, Wa**	CLIENT: **IWAG Group III**	CASING MATERIAL AND SIZE: **Thermocouple**
DRILLING CONTRACTOR: **Cascade Drilling LP**	PROJECT #: **03916**	SCREEN SIZE: **N/A**
DRILLING EQUIPMENT: **Limited Access Rig**	DATE: **1/18/17**	SCREEN INTERVAL: **N/A**
DRILLING METHOD: **Roto Sonic**	GROUND SURFACE ELEV. FT AMSL: **426'**	FILTER PACK: **20/40 Sand**
LOGGED BY: **A. Morine/C. McFadden**; BOREHOLE SIZE: **6"**	TOTAL DEPTH: **40' bgs**	FILTER PACK INTERVAL: **N/A**

USCS	Description (USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other)
	Above Ground Monument
ML	SILT; brown; damp; no odors; vegetative soil cover
GP	Pea gravel 4': Geomembrane
ML	SILT WITH GRAVEL
ML	SILT; brown; moist; no odor
ML	GRAVELY SILT; brown; moist; no odor 10.5': Geogrid
ML	SILT; 10% fine sand; brown; moist; odors Same as above; trace gravel
ML	GRAVELY SILT; 95% gravelly silt with minor cobbles, 5% plastic and glass debris; dark brown; moist; odors
ML	SILT; 85% silt, 15% wood; tan-brown; moist
ML	SILT; trace cobbles; tan-brown; moist; odors; no debris
ML	Wood; 85% wood, 15% silt; dark brown
	SILT; trace cobbles; tan-brown; moist; odors; no debris
	Wood; 95% wood; large chunks; dark brown
ML	SILT; trace glass; light brown; moist; odors
ML	SILT; minor gravel and black crumbly material; black to dark brown; damp; odors
ML	SILT WITH GRAVEL; 70% silt and cobbles, 30% wood; dark brown; damp; odors
ML	SILT; tan/brown; moist; no debris
	Silt and debris; black spongy material with some drum pieces; pink and gray; moist; odors
ML	SILT; light brown; no debris; appears native Same as above; lighter gray-brown
	End of Borehole

Interval & % Recovery: 100 (each of eight intervals, 0–40 ft)

Depth (feet)	Elevation (ft AMSL)	Temperature F°	PID (ppm)
0	426		
2		48	0
3		57	0
4	422	75	0
5		86	0
6		108	0
7		104	0
8	418	109	0
9		121	0
10		180	0
11			527
12	414	135	879
13		143	2469
14		148	2500
15		156	538
16	410	166	2416
17		167	940
18		177	3760
19		169	2320
20	406	152	1290
21		177	2196
22		186	368
23		190	1200
24	402	194	1014
25		189	2101
26		187	891
27		186	737
28	398	179	923
29		176	4500
30		185	5000
31		192	PID
32	394	158	down
33		162	
34		158	
35		153	
36	390	179	
37		167	
38		172	
39		183	
40	386	189	

Well Construction



NOTES:

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ENVIRONMENTAL PARTNERS INC

BORING ID: GI-3 DRAFT

SITE ADDRESS **1901 Dietrich Rd, Pasco, Wa**	CLIENT: **IWAG Group III**	CASING MATERIAL AND SIZE: **3" gas impants**
DRILLING CONTRACTOR: **Cascade Drilling LP**	PROJECT #: **03916**	SCREEN SIZE: **N/A**
DRILLING EQUIPMENT: **Limited Access Rig**	DATE: **1/18/17**	SCREEN INTERVAL: **N/A**
DRILLING METHOD: **Roto Sonic**	GROUND SURFACE ELEV. FT AMSL: **426'**	FILTER PACK: **20/40 Sand**
LOGGED BY: **A. Morine** / BOREHOLE SIZE: **6"**	TOTAL DEPTH: **40' bgs**	FILTER PACK INTERVAL: **N/A**

USCS	Description (USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other)
	Above Ground Monument
ML	SILT; brown; damp; no odors; vegetative soil cover
GP	Pea gravel 4.5': Geofabric liner
ML	GRAVELY SILT; pea gravel and silt; trace cobbles
ML	SILT; trace fine sand; light brown; damp; no odors 12': Same as above; light gray
	Wood; large chunks; brown; moist; odors
ML	SILT; trace fine sand; light brown; damp; no odors Same as above; 5% white crumbly material
	Debris; 50% white debris; minor wood
	Wood; 90% wood, 10% silt; dark brown
	SILT; 10% wood, 90% silt; gray; moist; odors
ML	SILT; 85% silt, 15% metal wire debris
ML	SILT; black; moist; odors
	Silt and Wood; 50% silt, 50% wood chunks; dark brown; moist; odors
ML	SILT; 90% silt, 10% metal and wood debris; white crumbly material
ML	SILT; 85% silt, 15% metal drum pieces; medium to dark brown; moist; odors
ML	SILT; medium brown; moist; odors; no debris 35': Top half of sample is lost 39': Same as above; dark gray
	End of Borehole

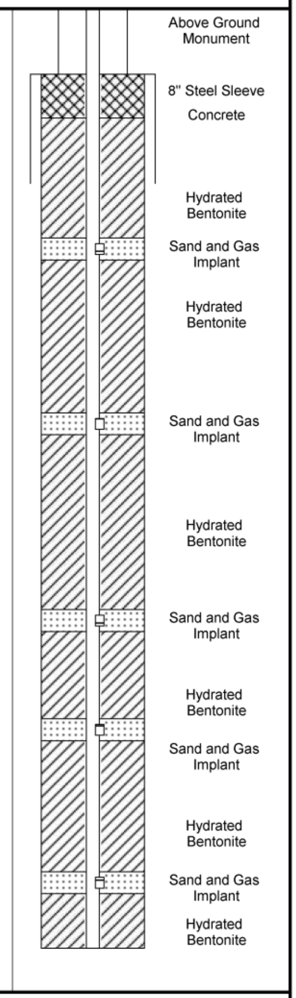
Depth (feet)	Elevation (ft AMSL)
0	426
4	422
8	418
12	414
16	410
20	406
24	402
28	398
32	394
36	390
40	386

Interval & % Recovery: 100, 100, 100, 100, 100, 60, 80, 50

Temperature F°: 41, 50, 63, 78, 92, 102, 114, 151, 147, 151, 155, 194, 197, 166, 164, 161, 150, 176, 184, 182, 176, 189, 146, 145, 142, 138, 138, 182, 197, 196

PID (ppm): PID down

Well Construction



NOTES:

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ENVIRONMENTAL PARTNERS INC

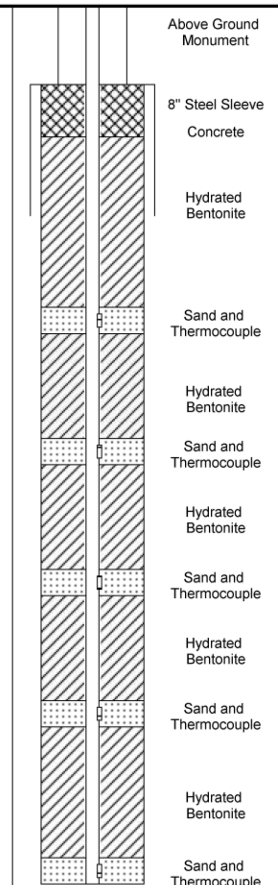
BORING ID: TC-4 DRAFT

SITE ADDRESS: **1901 Dietrich Rd, Pasco, Wa**	CLIENT: **IWAG Group III**	CASING MATERIAL AND SIZE: **Thermocouple**
DRILLING CONTRACTOR: **Cascade Drilling LP**	PROJECT #: **03916**	SCREEN SIZE: **N/A**
DRILLING EQUIPMENT: **Limited Access Rig**	DATE: **1/24/17**	SCREEN INTERVAL: **N/A**
DRILLING METHOD: **Roto Sonic**	GROUND SURFACE ELEV. FT AMSL: **425'**	FILTER PACK: **20/40 Sand**
LOGGED BY: **A. Morine/C. McFadden** — BOREHOLE SIZE: **6"**	TOTAL DEPTH: **30' bgs**	FILTER PACK INTERVAL: **N/A**

Depth (feet)	USCS	Description (USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other)	Interval & % Recovery
		Above Ground Monument	
0	ML	SILT; brown; damp; no odors; vegetative soil cover	50
4	GP	Pea gravel 5': HDPE liner	
	ML	GRAVELY SILT; brown; damp; no odors	100
8	ML	SILT WITH GRAVEL; brown; damp; no odors 9.5': Geogrid	
	ML	SILT; trace gravel and fine to coarse sand; medium brown; moist; no odor 13.5': 2 layers of Visqueen 15': Same as above; few wood pieces 15'-16.5': Same as above; no wood	100
16		SILT; 15% wood, 85% silt; dark brown; moist	
		Debris; 80% wood, tire pieces, steel, and other metal debris, 20% silt; dark brown; moist; slight odor	100
20		Debris; 50% wood, tires, and other minor debris, 50% silt; dark brown; moist; odors	100
24		Debris; 95% wood, cardboard, fabric, and plastic debris	
	ML	SILT; minor debris; dark brown; moist; odors SILT; dark tan; moist; odors; minor debris	
28	ML	SILT; trace fine sand; dark gray; damp; slight odor Same as above; light gray	100
		End of Borehole	
32			
36			

Elevation (ft AMSL)	Temperature F°	PID (ppm)
425		
	61	1.9
421	71	1.4
	69	3.1
	114	3.7
	149	4.8
417	102	6.4
	118	3.8
	177	5.2
	157	3.8
413	113	7.8
	115	4.6
	120	6.8
	137	2.1
409	180	38
	182	303
	190	185
	183	49.9
405	150	58.7
	164	45.8
	157	461
	149	176
401	142	267
	137	689
	162	902
	128	118
397	131	231
	134	171
	155	146

Well Construction



NOTES:

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ENVIRONMENTAL PARTNERS INC

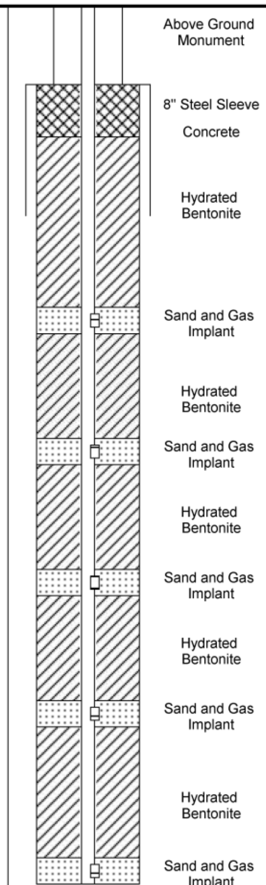
BORING ID: GI-4 DRAFT

SITE ADDRESS: **1901 Dietrich Rd, Pasco, Wa**	CLIENT: **IWAG Group III**	CASING MATERIAL AND SIZE: **3" gas impants**
DRILLING CONTRACTOR: **Cascade Drilling LP**	PROJECT #: **03916**	SCREEN SIZE: **N/A**
DRILLING EQUIPMENT: **Limited Access Rig**	DATE: **1/24/17**	SCREEN INTERVAL: **N/A**
DRILLING METHOD: **Roto Sonic**	GROUND SURFACE ELEV. FT AMSL: **425'**	FILTER PACK: **20/40 Sand**
LOGGED BY: **A. Morine** / BOREHOLE SIZE: **6"**	TOTAL DEPTH: **30' bgs**	FILTER PACK INTERVAL: **N/A**

USCS	Description (USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other)	Interval & % Recovery
	Above Ground Monument	
ML	SILT; brown; damp; no odors; vegetative soil cover	100
	4': HDPE liner	
ML	GRAVELY SILT; brown-gray; dry-damp; no odors	100
	9.5': Geogrid	
	SILT; tan; dry to damp; dense; no odors	
ML	SILT; 10% fine to coarse sand, trave gravel; light brown; moist; no odors	
	14': Same as above; trace rubber; dark brown	100
ML	SILT WITH GRAVEL; few cobbles; brown; moist; no debris	
ML	SILT; trace medium-fine sand; brown; moist; no odor	100
ML	Silt with Debris; 60% silt, 40% wood, trace rubber; dark brown; moist; no odor	
ML	SILT; few wood debris; medium brown; moist; strong odor	
	Debris; 70% debris: wood, rubber, wire, cardboard; dark brown; moist	100
	Debris; 90% debris: wood, rubber, fabric, metal; 10% soil; dark brown; moist; strong odor	
ML	SILT; gray; minor debris	
ML	SILT; brown-gray; no debris	100
	End of Borehole	

Depth (feet)	Elevation (ft AMSL)	Temperature F°	PID (ppm)
0	425		
		42	1.1
		50	1.5
		63	1.7
4	421	78	2.4
		83	2.6
		86	6.7
		104	7.8
8	417	97	12.5
		120	13
		200	12.7
		206	19.5
12	413	154	9.1
		143	10
		163	18.1
		198	11.5
16	409		
20	405		
		201	50.9
		196	234
		192	465
24	401	172	3370
		187	136
			270
		130	1405
28	397	128	285
		132	3280
		181	188
32			
36			

Well Construction



NOTES:

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ENVIRONMENTAL PARTNERS INC

BORING ID: TC-5 DRAFT

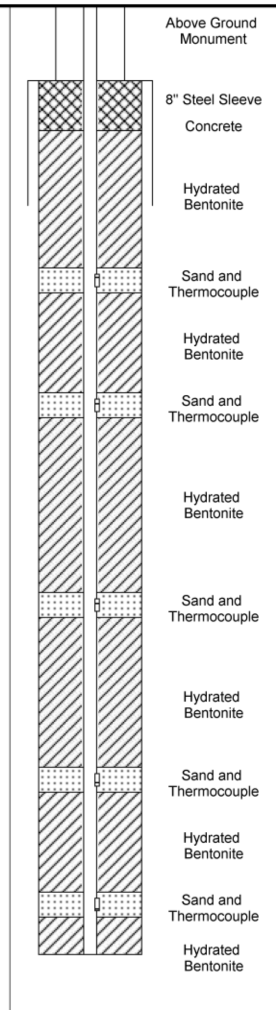
SITE ADDRESS: **1901 Dietrich Rd, Pasco, Wa**	CLIENT: **IWAG Group III**	CASING MATERIAL AND SIZE: **Thermocouple**
DRILLING CONTRACTOR: **Cascade Drilling LP**	PROJECT #: **03916**	SCREEN SIZE: **N/A**
DRILLING EQUIPMENT: **Limited Access Rig**	DATE: **1/5/17**	SCREEN INTERVAL: **N/A**
DRILLING METHOD: **Roto Sonic**	GROUND SURFACE ELEV. FT AMSL: **429'**	FILTER PACK: **20/40 Sand**
LOGGED BY: **A. Morine/C. McFadden** — BOREHOLE SIZE: **6"**	TOTAL DEPTH: **35' bgs**	FILTER PACK INTERVAL: **N/A**

Description
USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other

USCS	Description	Interval & % Recovery
	Above Ground Monument	
ML	SILT; brown; damp; no odors; vegetative soil cover	100
	4': Geomembrane	
GP	Pea gravel	
SM	SILTY SAND WITH GRAVEL; light gray damp; no odors	100
ML	SILT; trace to few fine to coarse sand; gray; dry-damp; odor	
ML	SILT; gray; damp; odor	100
		100
	SILT; trace wood; gray; damp; odor	
	Silt and Wood; 50% wood, 50% silt with few sand and gravel; dark gray; moist; odors	
ML	SILT; trace wood; gray; damp; odor	100
	Concrete Debris; chunks and ground (recycled); light gray; dry	
	Debris; 80% wood and metal coil debris, 20% silt and sand; sheen on wood; very moist	
	Concrete Debris; 100% concrete chunks and ground (recycled); light gray; dry	
	Debris; 80% wood and metal coil debris, 20% silt and sand; sheen on wood; very moist	100
	Debris; compressed cardboard; black and brown; moist to damp; strong odors	
ML	SILT; dark gray; moist to damp; strong odors 30.5': Same as above; light gray	100
	End of Borehole	

Depth (feet)	Elevation (ft AMSL)	Temperature F°	PID (ppm)
0	429		
		35	7.8
		43	6.4
4	425	54	5.6
		65	4.6
		89	23
		94	35
8	421	92	19.1
		114	13.3
		145	11.6
		156	325
12	417	153	397
		148	478
		156	392
		168	378
16	413	194	636
		198	438
		197	1300
		180	878
20	409	167	1107
		178	1700
		180	2500
		188	1377
24	405	183	3300
		171	4700
		203	3300
		190	<5000
28	401	161	<5000
		188	<5000
		181	<5000
		187	2900
32	397	167	1900
		165	2400
		176	1900
		182	1500
36	393		

Well Construction



NOTES:

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ENVIRONMENTAL PARTNERS INC

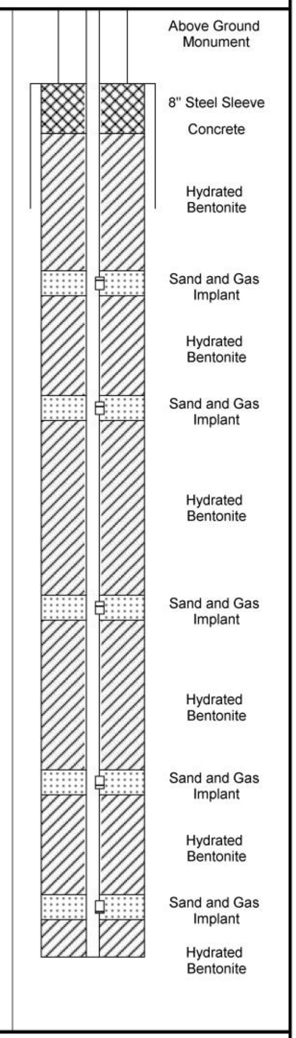
BORING ID: GI-5 DRAFT

SITE ADDRESS: **1901 Dietrich Rd, Pasco, Wa**	CLIENT: **IWAG Group III**	CASING MATERIAL AND SIZE: **3" gas impants**
DRILLING CONTRACTOR: **Cascade Drilling LP**	PROJECT #: **03916**	SCREEN SIZE: **N/A**
DRILLING EQUIPMENT: **Limited Access Rig**	DATE: **1/9/17**	SCREEN INTERVAL: **N/A**
DRILLING METHOD: **Roto Sonic**	GROUND SURFACE ELEV. FT AMSL: **429'**	FILTER PACK: **20/40 Sand**
LOGGED BY: **A. Morine** / BOREHOLE SIZE: **6"**	TOTAL DEPTH: **35' bgs**	FILTER PACK INTERVAL: **N/A**

Depth (feet)	USCS	Description (USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other)	Interval & % Recovery
Above ground		Above Ground Monument	
0–4	ML	SILT; brown; damp; no odors; vegetative soil cover	100 (0–5)
4		4': Geomembrane	
4–5	GP	Pea gravel	
5–10	SM	SILTY SAND WITH GRAVEL; light gray damp; no odors	100 (5–10)
10–22	ML	SILT; trace to few fine to coarse sand; gray; damp; slight odor	100 (10–15)
14		14': Geogrid	
16		16': Same as above; dark gray	100 (15–20)
17		17': Same as above; light gray	
20		20': Same as above; damp to moist	100 (20–25)
22–23.5		Silt and Concrete Debris; transitions to soil and recycled concrete	
23.5–24		Wood Debris; 90% wood, 10% silt	
24–26		Silt and Wood Debris; 50% silt with few fine to coarse sand, 50% wood debris; gray; damp; slight odor	100 (25–30)
26–33		Debris; compressed cardboard; black and brown; moist; strong odor	
30		Same as above; more black than brown; cardboard pieces smaller, some pea sized	100 (30–35)
33–35	ML	SILT; gray; moist-damp; strong odor; native soil	
35		End of Borehole	

Depth (feet)	Elevation (ft AMSL)	Temperature F°	PID (ppm)
0	429		
1		34	0.8
2		35	0.8
3		44	1.8
4	425	68	1
5		100	1
6		92	3.1
7		99	2.6
8	421	97	2.4
9		112	3.3
10		146	2.1
11		108	5.1
12	417	134	4.7
13		136	14.3
14		172	14.1
15		191	2.4
16	413	202	76
17		203	168
18		201	164
19		197	104
20	409	178	702
21		175	134
22		183	268
23		196	203
24	405	162	840
25		169	950
26		135	236
27		137	3991
28	401	102	96
29		125	1257
30		106	1560
31		149	1522
32	397	165	1288
33		178	3441
34		195	>5000
35		192	124
36	393		

Well Construction



NOTES:

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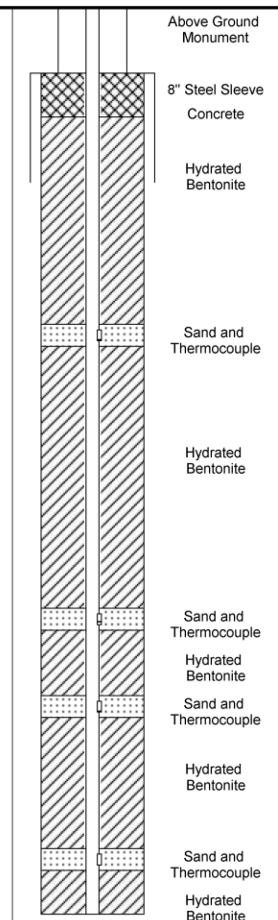
ENVIRONMENTAL PARTNERS INC

BORING ID: TC-6 DRAFT

SITE ADDRESS **1901 Dietrich Rd, Pasco, Wa**		CLIENT: **IWAG Group III**	CASING MATERIAL AND SIZE: **Thermocouple**
DRILLING CONTRACTOR: **Cascade Drilling LP**		PROJECT #: **03916**	SCREEN SIZE: **N/A**
DRILLING EQUIPMENT: **Limited Access Rig**		DATE: **1/23/17**	SCREEN INTERVAL: **N/A**
DRILLING METHOD: **Roto Sonic**		GROUND SURFACE ELEV. FT AMSL: **430'**	FILTER PACK: **20/40 Sand**
LOGGED BY: **A. Morine/C. McFadden**	BOREHOLE SIZE: **6"**	TOTAL DEPTH: **38.5' bgs**	FILTER PACK INTERVAL: **N/A**

Depth (feet)	USCS	Description USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other	Interval & % Recovery	Elevation (ft AMSL)	Temperature F°	PID (ppm)
		Above Ground Monument				
0		SILT; brown; damp; no odors; vegetative soil cover		430		
			50			
4				426	50	
	ML	5': Black visqueen			42	
		Same as above; minor fine sand				2.3
			50		76	
8		Same as above; minor angular gravel		422	124	4.6
		GRAVELY SILT; brown; damp; no odors			137	1.9
12	ML		100	418	163	2.1
					147	3.9
					204	5.9
					195	8.5
16	ML	SILT WITH SAND; 15-20% fine sand; brown; moist; no odors		414	192	13.7
			100		196	1.1
		SILT: light brown; dry-damp; no odors; no debris			194	14.3
					186	68.9
20				410	184	100
	ML				200	67.9
			100		203	27.1
					204	437
24				406	204	392
		SILT; 90% silt, 10% wall paper, wire, fabric, and other minor debris; brown; dry; slight odor			199	191
	ML	SILT: light brown; dry-damp; no odors; no debris			187	520
			100		202	
28	ML	SILT: brown; damp; odor; no debris		402	203	
		Debris; 90% wood, plastic, metal, and other debris, 10% silt			202	
					188	
		Silt and Debris; 50% debris, 50% silt, trace metal; dark brown; moist; odors			199	675
32			80	398	202	451
		SILT; 10% fine sand; gray; damp; odors				9.1
					179	26
					180	59
36	ML			394	192	324
			100		192	49.9
					198	361
		End of Borehole				
40				390		

Well Construction



NOTES:

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ENVIRONMENTAL PARTNERS INC

BORING ID: GI-6 DRAFT

SITE ADDRESS: **1901 Dietrich Rd, Pasco, Wa**	CLIENT: **IWAG Group III**	CASING MATERIAL AND SIZE: **3" gas impants**
DRILLING CONTRACTOR: **Cascade Drilling LP**	PROJECT #: **03916**	SCREEN SIZE: **N/A**
DRILLING EQUIPMENT: **Limited Access Rig**	DATE: **1/23/17**	SCREEN INTERVAL: **N/A**
DRILLING METHOD: **Roto Sonic**	GROUND SURFACE ELEV. FT AMSL: **430'**	FILTER PACK: **20/40 Sand**
LOGGED BY: **A. Morine/C. McFadden** — BOREHOLE SIZE: **6"**	TOTAL DEPTH: **40' bgs**	FILTER PACK INTERVAL: **N/A**

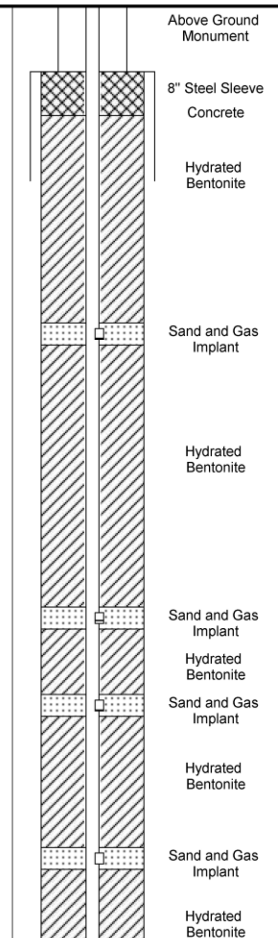
Depth (feet)	USCS	Description (USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other)
above 0		Above Ground Monument
0–9	ML	SILT; brown; damp; no odors; vegetative soil cover
9–18	ML	GRAVELY SILT; medium brown; moist; no odors
		14.5': Geogrid
		Same as above; moist
18–20	ML	SILT; trace black rock pieces; medium brown; damp; odors; no debris
20–22	ML	GRAVELY SILT; light gray; dry-damp; odors
22		Wood; 90% wood, 10% silt
22–24.5	GM	SILTY GRAVEL; 10% wood debris, 90% silty gravel; dark brown; moist; strong odors
24.5		Debris; 90% plastic debris with trace other debris, 10% gravelly silt
25–26.5	ML	GRAVELY SILT; trace wood pieces; dark brown; moist
26.5–29		Silt and Debris; 50% plastic and wood debris, 50% silt
29–30.5		GRAVELY SILT; 80% gravelly silt, 20% wood pieces; black-brown
30.5–40	ML	SILT; medium brown; moist; no debris
		Same as above; gray
40		End of Borehole

Interval (ft)	% Recovery
0–5	100
5–10	100
10–15	100
15–20	50
20–25	100
25–30	100
30–35	100
35–40	100

Depth (feet)	Elevation (ft AMSL)
0	430
4	426
8	422
12	418
16	414
20	410
24	406
28	402
32	398
36	394
40	390

Temperature F°	PID (ppm)
43	2.6
55	3
78	2.6
86	4.9
104	4.1
85	4.3
96	5.8
128	4.4
168	16.9
123	12.3
121	47.5
134	11.5
160	39.9
168	147
163	389
156	1510
167	2110
170	1157
186	606
170	1271
167	1791
173	1624
179	646
188	115
182	288
193	1315
199	132
202	70.1

Well Construction



NOTES:

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ENVIRONMENTAL PARTNERS INC

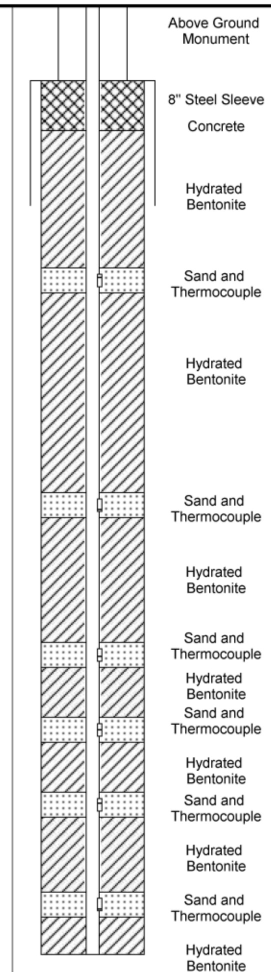
BORING ID: TC-7 DRAFT

SITE ADDRESS: **1901 Dietrich Rd, Pasco, Wa**		CLIENT: **IWAG Group III**	CASING MATERIAL AND SIZE: **Thermocouple**
DRILLING CONTRACTOR: **Cascade Drilling LP**		PROJECT #: **03916**	SCREEN SIZE: **N/A**
DRILLING EQUIPMENT: **Limited Access Rig**		DATE: **1/9/17 - 1/10/17**	SCREEN INTERVAL: **N/A**
DRILLING METHOD: **Roto Sonic**		GROUND SURFACE ELEV. FT AMSL: **427'**	FILTER PACK: **20/40 Sand**
LOGGED BY: **A. Morine**	BOREHOLE SIZE: **6"**	TOTAL DEPTH: **35' bgs**	FILTER PACK INTERVAL: **N/A**

Depth (feet)	USCS	Description (USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other)	Interval & % Recovery
above 0		Above Ground Monument	
0–5	ML	SILT; brown; damp; no odors; vegetative soil cover 5': Geofabric	100
5–8	ML	SILT; few coarse-fine sand and trace gravel; brown; dry-damp; no odor	90
8–13	ML	SILT WITH SAND; coarse to fine sand with trace gravel; light gray; damp to dry; no odors	100
13–14	SW	SAND; fine to coarse sand with trace gravel; brown; damp; no odor	
14–21	ML	SILT; trace gravel; light gray-brown; damp; no odor 17': Geogrid 19': Same as above; dense	100
21–23	SP	SAND; fine sand with minor silt; tan; dry; slight odor	100
23–24		Debris; 60% plastic and metal debris, 40% soil; dark brown to black and tan; odors	
24–27	SP	SAND; fine sand with minor silt and few gravel; tan; dry; slight odor Same as above; piece of bung from steel drum	
27–30	SP	SAND; fine sand with minor silt with chunks of gray stone or compressed sand (not concrete); tan; dry; slight odor	50
30–35	ML	SANDY SILT; minor gravel and trace coarse to fine sand; olive-gray; damp; strong odors; no debris	100
35		End of Borehole	

Depth (feet)	Elevation (ft AMSL)	Temperature F°	PID (ppm)
0	427		
1		33	2.1
2		37	0.6
3		41	0.2
4	423	48	1.1
5		84/102	0.6
6		82	2.3
7		78	1
8	419	80	2.8
9		42	1.6
11		81	11
12	415	76	4.5
13		98	4.8
14		108	3.2
15		169	8.5
16	411	155	13
17		154	18
18		122	5.3
19		123	5.2
20	407	171	26
21		124	94
22		122	118
23		133	594
24	403	158	2308
25		147	400
28	399	134	
29		129	689
30		149	1169
31		158	823
32	395	147	730
33		143	3410
34		150	4200
35		165	>5000
36	391		

Well Construction



NOTES:

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ENVIRONMENTAL PARTNERS INC

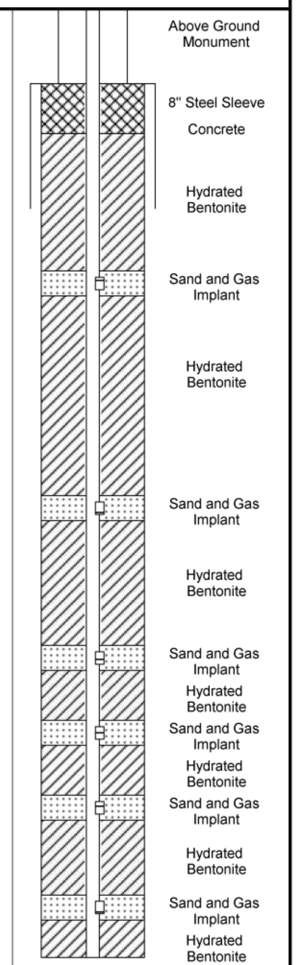
BORING ID: GI-7 DRAFT

SITE ADDRESS: **1901 Dietrich Rd, Pasco, Wa**	CLIENT: **IWAG Group III**	CASING MATERIAL AND SIZE: **3" gas impants**
DRILLING CONTRACTOR: **Cascade Drilling LP**	PROJECT #: **03916**	SCREEN SIZE: **N/A**
DRILLING EQUIPMENT: **Limited Access Rig**	DATE: **1/10/17**	SCREEN INTERVAL: **N/A**
DRILLING METHOD: **Roto Sonic**	GROUND SURFACE ELEV. FT AMSL: **427'**	FILTER PACK: **20/40 Sand**
LOGGED BY: **A. Morine** — BOREHOLE SIZE: **6"**	TOTAL DEPTH: **35' bgs**	FILTER PACK INTERVAL: **N/A**

Depth (feet)	USCS	Description (USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other)	Interval & % Recovery
above 0		Above Ground Monument	
0–2	ML	SILT; brown; damp; no odors; vegetative soil cover	100
2–7	ML	SILT; few fine to coarse sand; light brown; damp; no odor 4.5': HDPE liner Same as above; no pea gravel 7': Geofabric	100 / 60
7–8	GP-GM	Pea gravel with Silt	60
8–13	ML	SILT; few fine to coarse sand; light brown; damp; no odor	60 / 80
13–15	ML	SILT WITH GRAVEL; 15% gravel, 10% coarse to fine sand	80
15–17		No recovery; very little resistance drilling	60
17–19	ML	SILT; 10% fiber pieces; light gray; dry-damp; no odors	60
19–21	ML	SILT; light brown; damp; no odors; no debris	60 / 100
21–22		80% white compressed material, 20% soil	100
22–23		20% white powder and metal debris, 80% soil	100
23–24		80% white compressed material, 20% soil; tan; moist	100
24–27	ML	SILT WITH GRAVEL; 90% silt, 10% fine to coarse sand; black; moist; odor 25': Same as above; White-red brick-like material	100
27–31	ML	SILT; light brown; moist; odors Same as above; increasing density; light gray Same as above; dark brown Same as above; trace brown fibers	100
31–35	ML	SILT; brown; damp-moist; odors; no debris	100
35		End of Borehole	

Depth (feet)	Elevation (ft AMSL)	Temperature F°	PID (ppm)
0	427		
1		36	2.3
2		39	0.8
3		42	0.3
4	423	49	0.3
5		75	0.4
7		65	0.7
8	419	80	0.6
9		99	1.2
10		95	0.6
11		75	10
12	415	88	19
13		94	3.4
14		108	1
15		196	1.2
16	411		
17		188	10
18		149	1.8
19		164	2.6
20	407	152	5.1
21		146	194
22		124	282
23		129	352
24	403	136	316
25		134	257/260
26		155/139	491
27		129	524
28	399	135	1731
29		138	1247
30		154	997
31		154	621
32	395	160	1501
33		174	672
34		169	1372
35		156	1485
36	391		

Well Construction



NOTES:

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ENVIRONMENTAL PARTNERS INC

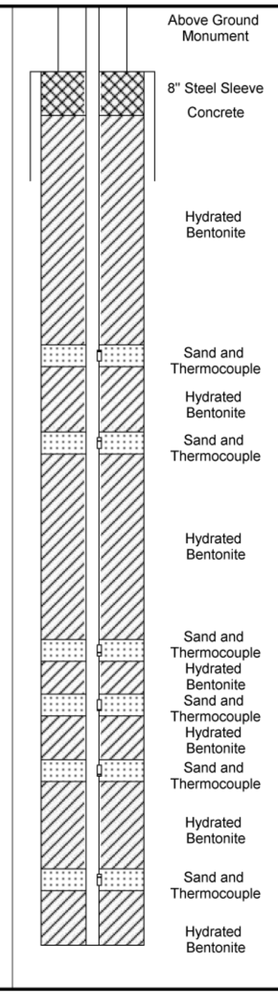
BORING ID: TC-8 DRAFT

SITE ADDRESS: **1901 Dietrich Rd, Pasco, Wa**	CLIENT: **IWAG Group III**	CASING MATERIAL AND SIZE: **Thermocouple**
DRILLING CONTRACTOR: **Cascade Drilling LP**	PROJECT #: **03916**	SCREEN SIZE: **N/A**
DRILLING EQUIPMENT: **Limited Access Rig**	DATE: **1/11/17**	SCREEN INTERVAL: **N/A**
DRILLING METHOD: **Roto Sonic**	GROUND SURFACE ELEV. FT AMSL: **426'**	FILTER PACK: **20/40 Sand**
LOGGED BY: **A. Morine** / BOREHOLE SIZE: **6"**	TOTAL DEPTH: **40' bgs**	FILTER PACK INTERVAL: **N/A**

USCS	Description (USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other)	Interval & % Recovery
	Above Ground Monument	
ML	SILT; brown; damp; no odors; vegetative soil cover	100
ML	SILT; trace fine sand; brown-tan; moist-damp; no odors	
GP-GM	Poorly-Graded Gravel with Silt and Sand drainage layer	70
ML	SILT WITH SAND; 10% gravel; brown; moist; no odors	
ML	SILT; trace sand; brown; moist; no odors	
SM	SILTY SAND; 10% gravel; gray; dry; no odors 13': Same as above; 5% fine to coarse sand; trace cobbles; dry-damp 14': Geogrid	100
ML	SILT; light brown; damp-moist; no odors; no debris Same as above; increased sand and gravel Same as above; dark brown Same as above; light brown Same as above; moist	100
ML	SILT; 10% fine sand; light brown; damp; no odors; no debris	50
ML	SANDY SILT WITH GRAVEL; 35% drum pieces 65% silt, sand, and gravel; yellow-green 27'-28.5': Same as above; no debris	100
	SILT; some rock/gravel pieces; yellow-green	
	SILT; 85% silt with black and white gravel pieces; dark gray; dry to damp; odors	
ML	SILT; trace gravel; dark brown; moist; strong odors; no debris 32'-33': Same as above; 90% silt, 10% metal drum pieces and trace glass 33'-34': Same as above; no metal trace glass 34'-35': Same as above; no debris	100
ML	SILT; trace fine-coarse sand; light gray; moist; strong odors; no debris	100
	End of Borehole	

Depth (feet)	Elevation (ft AMSL)	Temperature F°	PID (ppm)
0	426		
1		33	0
2		36	0
3		38	0.1
4	422	46	0
5		60	0
6		33	0
7		50	0.8
8	418	52	1.4
9		53	0.4
10		106	0.3
11		79	1
12	414	58	2.3
13		120	5
14		106	11
15		110	4.4
16	410	147	24
17		198	23
18		190	11
19		108	26
20	406	188	7.9
21		137	5.3
22		154	74
23		161	74
24	402	130	112
25		132	61
26		140	120
27		141	508
28	398	135	1409
29		157	375
30		182	191
31		189	3182
32	394	185	4658
33		183	4011
34		169	>5000
35		183	1587
36	390	200	>5000
37		197	>5000
38		201	>5000
39		193	>5000
40	386	202	1200

Well Construction



NOTES:

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April 24, 2017
DRAFT

ENVIRONMENTAL PARTNERS INC

BORING ID: GI-8 DRAFT

SITE ADDRESS: **1901 Dietrich Rd, Pasco, Wa**	CLIENT: **IWAG Group III**	CASING MATERIAL AND SIZE: **3" gas impants**
DRILLING CONTRACTOR: **Cascade Drilling LP**	PROJECT #: **03916**	SCREEN SIZE: **N/A**
DRILLING EQUIPMENT: **Limited Access Rig**	DATE: **1/11/17**	SCREEN INTERVAL: **N/A**
DRILLING METHOD: **Roto Sonic**	GROUND SURFACE ELEV. FT AMSL: **426'**	FILTER PACK: **20/40 Sand**
LOGGED BY: **C. McFadden** — BOREHOLE SIZE: **6"**	TOTAL DEPTH: **40' bgs**	FILTER PACK INTERVAL: **N/A**

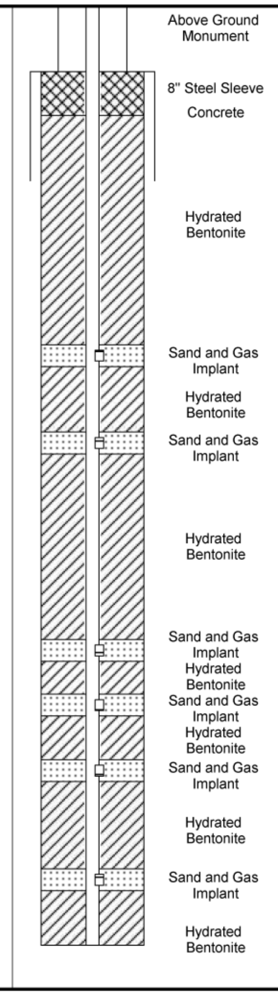
Description (USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other)

USCS	Description
	Above Ground Monument
ML	SILT; brown; damp; no odors; vegetative soil cover 6': HDPE Liner Geosynthetic clay liner
GP-GM	POORLY-GRADED GRAVEL WITH SILT; mostly fine gravel with minor silt and few sand; brown; dry
	No Recovery
ML	SILT; brown; dry 14': Geogrid
GP-GM	POORLY-GRADED GRAVEL WITH SILT; fine gravel with minor silt and few sand; brown; dry
ML	SILT; trace fine sand; brown; dry 17': Same as above; no sand 19': Same as above; 1" piece of plastic 20': Same as above; no debris
	26'-27': Green rock; hard; similar to white rock at 28' 27'-28': Rubber and silt; 30% silt; rubber not blackened; brown
ML	28'-29.5': White-yellow rock; no debris
	SILT; trace fine sand; brown; dry
	Debris; Rubber pieces and bright green rock pieces
ML	SILT; 10% green rock pieces, some large, most small; trace fine sand; trace white pieces; light brown; moist; strong odor; no debris
	No Recovery
ML	SILT; drum piece at 37'; trace fine sand; brown; dry
	End of Borehole

Interval (feet)	% Recovery
0-5	75
5-10	75
10-15	65
15-20	80
20-25	90
25-30	100
30-35	100
35-40	75

Depth (feet)	Elevation (ft AMSL)	Temperature F°	PID (ppm)
0	426		
3		38	
4	422	57	
5		79	
6			11.5
7		86	19.8
8	418	88	20.1
9		86	
10		103	22.6
12	414	60	264
13		156	250
14		173	264
16	410	145	106
17		145	175
18		148	180
19		155	170
20	406		
21		150	190
22		148	2491
23		163	124
24	402	182	125
25		179	64
26			570
27		178	960
28	398	182	1025
29		187	1156
30		201	1530
31		172	PID Down
32	394	185	
33		192	
34		182	
35		152	
36	390		
37		124	
38		160	96
39		161	104
40	386	163	100

Well Construction



NOTES:

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ENVIRONMENTAL PARTNERS INC

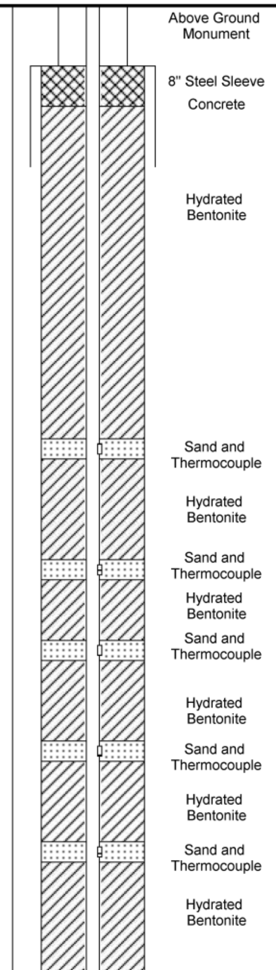
BORING ID: TC-9 DRAFT

SITE ADDRESS: **1901 Dietrich Rd, Pasco, Wa**	CLIENT: **IWAG Group III**	CASING MATERIAL AND SIZE: **Thermocouple**
DRILLING CONTRACTOR: **Cascade Drilling LP**	PROJECT #: **03916**	SCREEN SIZE: **N/A**
DRILLING EQUIPMENT: **Limited Access Rig**	DATE: **1/19/17**	SCREEN INTERVAL: **N/A**
DRILLING METHOD: **Roto Sonic**	GROUND SURFACE ELEV. FT AMSL: **430'**	FILTER PACK: **20/40 Sand**
LOGGED BY: **A. Morine/C. McFadden** — BOREHOLE SIZE: **6"**	TOTAL DEPTH: **45' bgs**	FILTER PACK INTERVAL: **N/A**

USCS	Description (USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other)	Interval & % Recovery
	Above Ground Monument	
ML	SILT; brown; damp; no odors; vegetative soil cover	50
GP	Pea gravel	75
ML	SILT; brown; moist; no odor	
ML	SILT; light gray; damp; no odor Silt with pea gravel 11.5': HDPE liner	100
ML	SILT; trace fine sand; medium brown; moist; no odors	
ML	GRAVELY SILT; trace cobbles; brown; damp; no odors 18': Geogrid	100
ML	SILT; trace fine sand; brown; moist; no odors	
ML	GRAVELY SILT; minor cobbles; light brown; damp; slight odor	100
ML	SILT; medium brown; moist; slight odor 24': Same as above; dark brown	
	Wood; 90% wood, 10% silt; dark brown	40
	Little resistance	
	Wood; 90% wood, 10% silt; dark brown	
	Debris; 70% rubber, cardboard, and other debris, 30% silt; dark brown	
ML	SILT; dark brown. Recovery is lost down sampler. Recovered soils may be homogenized. Cascade adds 4 gal of water to get recovery. Soils are wet due to water.	0
ML	SILT; trace gravel; light gray; damp; odors Same as above; dry 39': Same as above; metal fragment, possibly drag down	50
	Same as above; moist; no debris	100
	End of Borehole	

Depth (feet)	Elevation (ft AMSL)	Temperature F°	PID (ppm)
0	430		
		44	PID Down
4	426	54	
		60	
		144	
		145	
8	422	120	
		111	
		120	
		153	
12	418	154	
		130	
		140	
		156	
16	414	153	343
		154	16.2
		130	2.1
		140	5.1
20	410	156	8.3
			654
		176	58.1
		138	12.2
24	406	132	27.8
		135	139
28	402	153	496
		136	193
		115	19.5
		139	71
32	398	162	399
		169	847
		182	847
		190	383
36	394		
		175	
		178	341
		182	300
40	390	186	141
		172	57
		178	59.1
		204	45.5
44	386	205	42.2
		202	60.2

Well Construction



NOTES:

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ENVIRONMENTAL PARTNERS INC

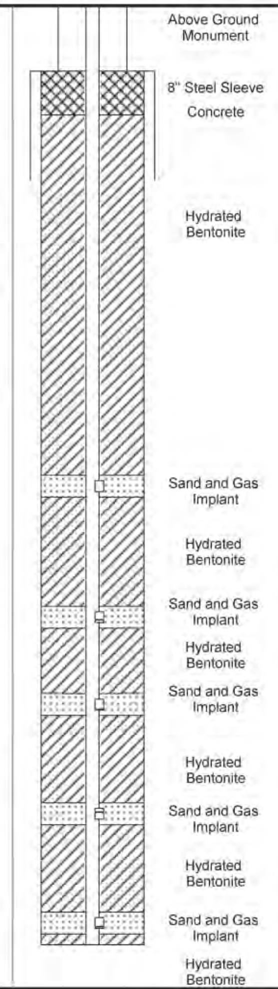
BORING ID: GI-9 DRAFT

SITE ADDRESS: **1901 Dietrich Rd, Pasco, Wa**	CLIENT: **IWAG Group III**	CASING MATERIAL AND SIZE: **3" gas impants**
DRILLING CONTRACTOR: **Cascade Drilling LP**	PROJECT #: **03916**	SCREEN SIZE: **N/A**
DRILLING EQUIPMENT: **Limited Access Rig**	DATE: **1/19/17**	SCREEN INTERVAL: **N/A**
DRILLING METHOD: **Roto Sonic**	GROUND SURFACE ELEV. FT AMSL: **430'**	FILTER PACK: **20/40 Sand**
LOGGED BY: **A. Morine/C. McFadden** — BOREHOLE SIZE: **6"**	TOTAL DEPTH: **40' bgs**	FILTER PACK INTERVAL: **N/A**

Depth (feet)	USCS	Description (USCS name; Color; Moisture; Density; Plasticity; Dilatency; EPI description; Other)	Interval & % Recovery
above 0		Above Ground Monument	
0–5	ML	SILT; brown; damp; no odors; vegetative soil cover	50
6	GP-GM	Pea gravel and silt	
7		7': HDPE liner	100
7–16	ML	SILT WITH SAND; 20% coarse to fine sand with trace gravel; medium brown; moist; no odors	
		Same as above; 10% gravel, trace cobbles	40
15–17.5	ML	GRAVELY SILT; 20% gravel, 10% coarse to fine sand; medium brown; moist; no odors	100
17.5		17.5': Geogrid	
17.5–24	ML	SILT; trace gravel; medium brown; moist; no odors; no debris	100
24	ML	GRAVELY SILT; gray-brown; moist; slight odor	
25		Wood; 90% wood, 10% silt	
25–29	ML	Little resistance until 29'. Top 1'-2' of recovery is silt with minor plastic and white hard material; few cobbles; dark brown; damp	25
29–31	ML	Bottom 1' of recovery is silt; light brown; trace fine sand; no debris	
31–32	ML	SILT; 10% coarse gravel, trace of metal debris and white-green crumbles	100
32–35	ML	SILT; medium brown; trace black brittle chunks; lightweight	
		34.5'-35': Same as above; 55% black chunks	
35–40	ML	SILT; brown-gray; damp-moist; metal chunk at 35'; no other debris	100
		37': Same as above; light gray; no debris	
40		End of Borehole	

Depth (feet)	Elevation (ft AMSL)	Temperature F°	PID (ppm)
0	430		
3		39	1.2
4	426	37	1.2
5		57	1.1
6		82	1.9
7		82	1.2
8	422	84	1.4
9		86	1.1
10		91	1.5
12	418		
13		114	16.5
14		135	4.7
15		199	9.5
16	414		
17		153	
18		197	
19		149	
20	410	193	
21		120	10.9
22		135	7.1
23		149	3.5
24	406	144	15.3
25		123	19.6
28	402	119	
29		119	
30		125	36.9
31		200	70.7
32	398	194	
33		193	337
34		178	94.4
35		178	32.1
36	394	194	23.6
37		192	52.2
38		184	62.7
39		186	80.3
40	390	201	351

Well Construction



NOTES:

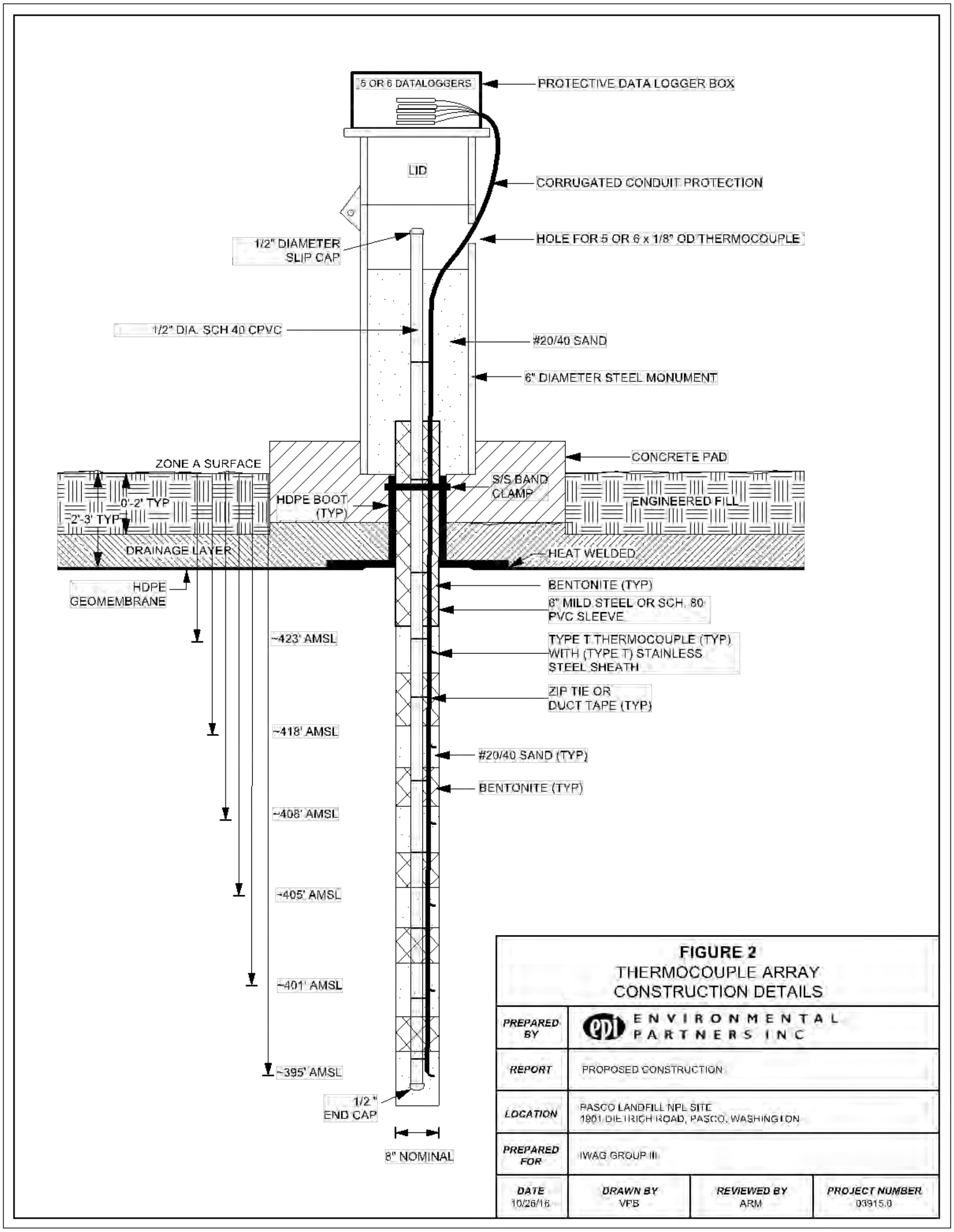
1 of 1

B.2 Photographs of Typical Thermocouple and Soil Gas Arrays

Photograph 1: Typical thermocouple array.


Photograph 2: Typical soil gas array.

B.3 Thermocouple and Gas Probe Array Construction Details



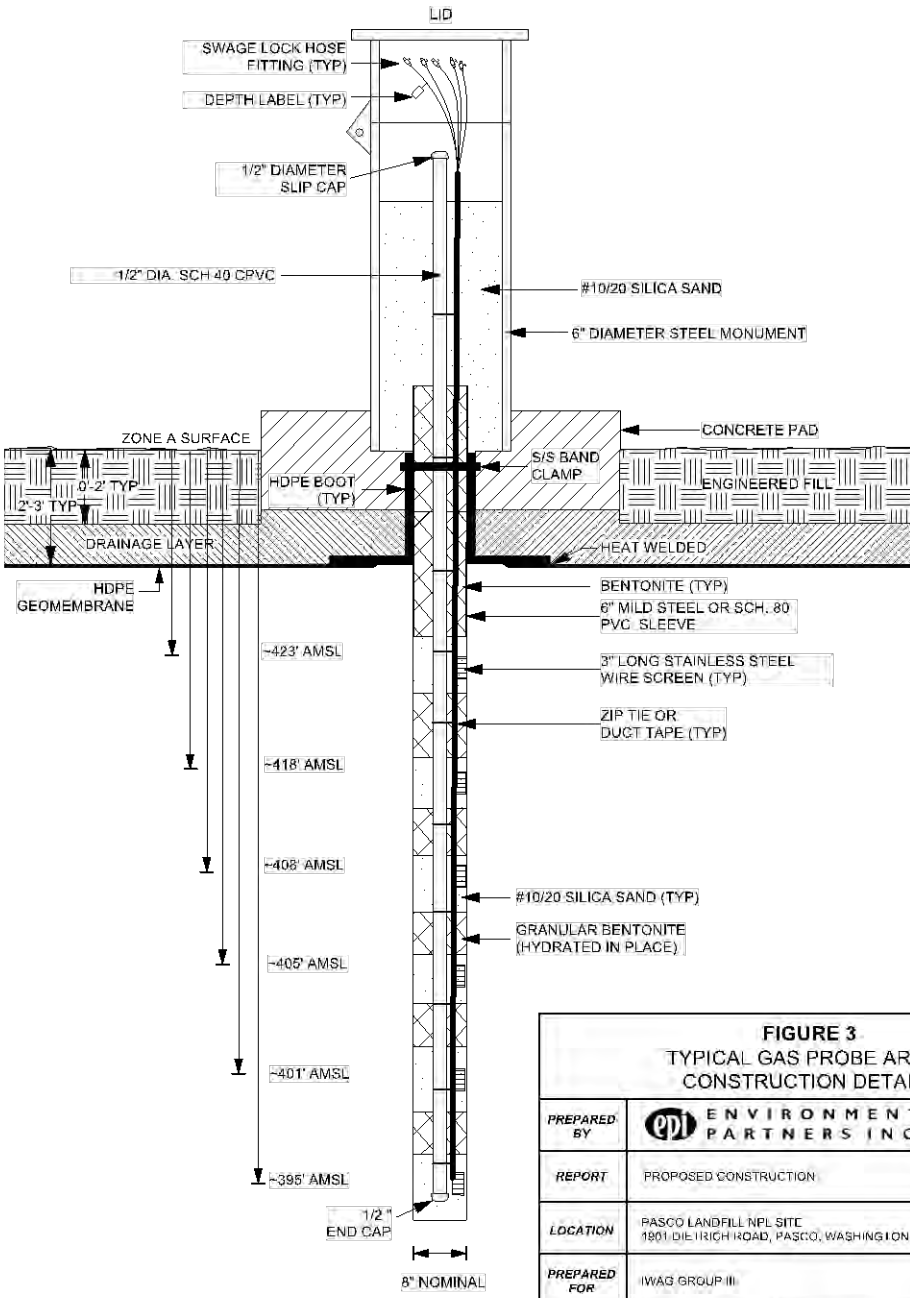


FIGURE 3
TYPICAL GAS PROBE ARRAY
CONSTRUCTION DETAILS

PREPARED BY	ENVIRONMENTAL PARTNERS INC		
REPORT	PROPOSED CONSTRUCTION		
LOCATION	PASCO LANDFILL NPL SITE 1901 DIETRICH ROAD, PASCO, WASHINGTON		
PREPARED FOR	IWAG GROUP III		
DATE 10/26/16	DRAWN BY VPB	REVIEWED BY ARM	PROJECT NUMBER 03915.0

April 24, 2017

ZONE A COMBUSTION EVALUATION REPORT
PASCO SANITARY LANDFILL

Pasco Sanitary Landfill
Pasco, WA

Appendices

Appendix C: Bucket Auger Boring Logs and Photographs

APPENDIX C. BUCKET AUGER BORING LOGS AND PHOTOGRAPHS

Boring Log Legend

BA-1 Boring Log and Photographic Log

BA-2 Boring Log and Photographic Log

BA-3 Boring Log and Photographic Log

BA-4 Boring Log and Photographic Log

BA-5 Boring Log and Photographic Log

BA-6 Boring Log and Photographic Log

TVS Content in Borings

SOIL CLASSIFICATION SYSTEM CHART

GROUP/GRAPHIC SYMBOL		TYPICAL DESCRIPTION
GW		Well-graded gravels, gravels, gravel/sand mixtures, little or no fines
GP		Poorly graded gravels, gravel-sand mixtures, little or no fines
GM		Silty gravels, gravel-sand-silt mixtures
GM-REF REF-GM		Silty gravel and refuse or fibrous organic mixtures
GC		Clayey gravels, gravel-sand-clay mixtures
SW		Well-graded sands, gravelly sands, little or no fines
SP		Poorly graded sand, gravelly sands, little or no fines
SM		Silty sands, sand-silt mixtures
SM-REF REF-SM		Silty sand and refuse or fibrous organic mixtures
SC		Clayey sands, sand-clay mixtures
ML		Inorganic silts of low to medium plasticity, rock flour, sandy silts, gravelly silts, or clayey silts with slight plasticity
ML-REF REF-ML		Sandy silt and refuse or fibrous organic mixtures
CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays

SCS ENGINEERS
Environmental Consultants and Contractors
14945 SW Sequoia Parkway, Suite 180
Portland, Oregon 97224
(503) 639-9201 FAX: (503) 684-6948

PROJECT NO.	DES BY		DATE
9000003.04	LEL	SOIL CLASSIFICATION CHART	APRIL 2017
SCALE: AS SHOWN	CHK BY: SEA		FIGURE
CAD FILE: STD0L434	APP BY: JMR		LF-434

BA-1 BORING LOG AND PHOTOGRAPHIC LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: BA-1

Pasco Sanitary Landfill
1901 Dietrich Road
Pasco, Washington

JOB NUMBER: 04209046.06

REMARKS:
All depths as reported by drilling equipment unless otherwise noted.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	TVS Result (%)	Temp. (deg F)	USCS Soil Class.	Description	Completion Detail
0	0					SM	12:40. Begin drilling at surface with open flight auger. Brown silty sand. Moist. (Driller set fall protection casing at surface.)	0
	2					GEOT / GM	12:48. 2-ft bgs. Black woven Geotextile underlain by gray sandy gravel. Moist. Photos: IMG_5804, IMG_5805	Site soil backfill to surface. No well casing installed.
1	3							
	5					GEOM / GP	12:50. 5-ft bgs. Black Geomembrane underlain by brown sandy gravel. Moist. Photo: IMG_5806	5
	6					SM	12:52. 6-ft bgs. Brown sandy gravel. (Driller setting up containers for cuttings below this depth.) Photo: IMG_5807	Hydrated Bentonite Chip Seal (25 Bags)
2	7						13:16. 7-ft bgs. Same as above. Photo: IMG_5808	
	8					GP		
	8.5						13:19. 8.5-ft bgs. Brown silty sand transitioning to gray sandy gravel. Moist. Photo: IMG_5810	Site soil backfill.
3	9.5						13:20. 9.5-ft bgs. Gray sandy gravel. Moist to wet. Photo: IMG_5811	
	10							

Drilling Company:	**DBM Contractors, Inc.**	Date Started:	**2/14/17**	Time Started:	**12:40**
Drilling Method:	**IMT AF180**	Date Ended:	**2/14/17**	Time Ended:	**16:45**
Logged By:	**Sam Adlington**	Boring Diameter:	**24-inch**	Total Depth:	**38.0 ft.**
Sampling Method:	**24-inch Core Barrel and Auger**				

SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: BA-1

Pasco Sanitary Landfill

JOB NUMBER: 04209046.06

Depth (meters)	Depth (feet)	Sample Location	Sample Number	TVS Result (%)	Temp. (deg F)	USCS Soil Class.	Description
	10						13:22. 10.5-ft bgs. Gray sandy gravel. Moist to wet. Photo: IMG_5812
	11				82.5	**GEOG**	13:24. 11-ft bgs. Brown silty sand. Moist to wet. Pieces of black Geomembrane and Geogrid present.
						SM	
	12				93.5		13:26. 12-ft bgs. Same as above. Moist and steamy. Photo: IMG_5813
4	13				91.0		13:27. 13-ft bgs. Transition to brown silty sand. Moist to wet and steamy. Photo: IMG_5814
						SM	
	14					**VQ**	13:29. 14-ft bgs. Brown silty sand transitioning to grey sandy silt below white Visqueen layer.
						ML	
	15						13:32. 15-ft bgs. Gray sandy silt. Moist to wet and steamy. Photo: IMG_5815
	16				98.5		13:36. 16-ft bgs. Gray sandy silt. Moist to wet and steamy. Photo: IMG_5816
5							
	17				101.5	ML	13:38. 17-ft bgs. Same as above. Moist to wet and steamy. Photo: IMG_5817
	18						13:39. 18-ft bgs. Same as above. Moist to wet and steamy.
						ML	
	19				102.5		13:40. 19-ft bgs. Gray silty sand with ~5% (by volume) gray-brown wood debris and <5% gray-brown decomposed refuse, including opaque plastics. Moist to wet and steamy. Photos: IMG_5819, IMG_5820, IMG_5821, IMG_5822, IMG_5823
6			BA-1 20'	21.1		SM	
	20				116.0		13:52. 20-ft bgs. Gray silty sand with with ~30% gray-brown decomposed refuse, including opaque plastics. Moist to wet. Photo: IMG_5824
	21				117	SM	13:57. 21-ft bgs. Same as above. Moist to wet and steamy. Photos: IMG_5825, IMG_5826, IMG_5827
			BA-1 22'	6.90			
	22						

Completion Detail

Depth (feet)	Completion Detail
10	Site soil backfill. (~10 to 13 ft)
15	Hydrated Bentonite Chip Seal (25 Bags) (~13 to 16 ft)
20	3/4-inch Crushed rock without fines. (~16 to 22 ft)

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: BA-1

Pasco Sanitary Landfill | **JOB NUMBER: 04209046.06**

Depth (meters)	Depth (feet)	Sample Location	Sample Number	TVS Result (%)	Temp. (deg F)	USCS Soil Class.	Description	Completion Detail
	22				105.5	SM	14:00. 22-ft bgs. Gray-brown silty sand with ~30% gray-brown decomposed refuse, including opaque plastics, and ~5% brown wood debris. Steam present. Photos: IMG_5828, IMG_5829	
7	23				88		14:20. 23-ft bgs. Dark brown silty sand with ~15% decomposed refuse and minimal (<5%) wood debris. Moist to wet and steamy. Photos: IMG_5830, IMG_5831	
	24				114	SM	14:27. 24-ft bgs. Same as above. Photo: IMG_5832	
	25				104		14:35. 25-ft bgs. Brown-gray silty sand with ~30% brown-tan decomposed refuse, including opaque plastics and foam, ~10% brown-tan wood debris, and some cobble and boulders. Steam present. Photos: IMG_5833, IMG_5834, IMG_5835	25
8	26				107	SM-REF	14:45. 26-ft bgs. Brown silty sand with ~50% brown-tan decomposed refuse, including opaque plastics and foam, ~5% cobble, and including minimal (<1%) paper products and wood debris. Steam present. Photos: IMG_5836, IMG_5837	
	27				105		14:52. 27-ft bgs. Brown sandy silty with ~50% brown decomposed refuse, including opaque plastics, and minor (<5%) wood debris. Moist to wet. Photos: IMG_5838, IMG_5839	
	28				105		14:58. 28-ft bgs. Brown-gray silty sand with ~30% gray decomposed refuse, including opaque plastics. Moist to wet and steamy. Photos: IMG_5840, IMG_5841	3/4-inch Crushed rock without fines.
	29				107	SM	15:05. 29-ft bgs. Brown-gray silty sand with minor (<5%) brown decomposed refuse, including opaque plastics. Moist and steamy. Photos: IMG_5842, IMG_5843, IMG_5844	
9			BA-1 30'	5.22	109		15:12 29-ft bgs. Brown sandy silt with minor (<5%) gravel and cobble. A piece of a metal drum was recovered on the auger. Photos: IMG_5846, IMG_5847, IMG_5848	
	30					SM		30
	31				102		15:19. 31-ft bgs. Brown silty sand with minor (<5%) decomposed refuse, including opaque plastics. Moist. Photos: IMG_5850, IMG_5851	
	32				102		15:25. 32-ft bgs. Brown silty sand with ~10% brown degraded refuse, some cobble, and large wood debris pieces. Wood debris consists of gray-brown dimensional lumber, approximately 2-inches by 6-inches. Steam present. Photos: IMG_5852, IMG_5853	
10	33				102 104 104 100	SM	15:30. 33-ft bgs. Brown silty sand with ~10% decomposed refuse. Some metal fragments present. Four (4) cleanup passes required to remove slough. Moist and steamy. Photos: IMG_5854 through IMG_5866	
	34							

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: BA-1

Pasco Sanitary Landfill

JOB NUMBER: 04209046.06

Depth (feet)	Temp. (deg F)	USCS Soil Class.	Description	Completion Detail
35	99 105	ML	15:52. 35-ft bgs. Brown-gray silty sand with minor (<5%) brown decomposed refuse and metal fragments. Additional cleanup pass required. Moist. Photos: IMG_5867, IMG_5869	3/4-inch Crushed rock without fines.
36.5	97		16:00 36.5-ft bgs. Brown sandy silt with three (3) large metal pieces. Moist and steamy. Photos: IMG_5872, IMG_5873	
37	97	ML	16:09. 37-ft bgs. Brown sandy with with minor (<5%) metal fragments. Moist. Photos: IMG_5874, IMG_5875	
38	99.5		16:19. 38-ft bgs. Bottom of boring measured at 36.5-ft bgs with tooling removed. Brown-gray sandy silt. Dry to moist. Photos: IMG_5876, IMG_5877	Bottom of boring 38-ft bgs.

Bottom of boring 38-ft bgs.

Boring terminated due to reaching Touchet Bed soils.

Definitions and General Notes

Moisture Conditions:
Dry: Absence of moisture, dusty, dry to the touch.
Moist: Damp, but no visible water or other liquids.
Wet: Visible free water.

Particle Size Ranges:
Boulder: Greater than 12-inches in largest dimension.
Cobble: Between 3 and 12 inches in largest dimension.
Gravel: Greater than No. 4 Sieve (3/16-inch) and less than 3-inches in largest dimension.

Content Descriptions:
Minor: Less than 5% by volume.
Minimal: Less than 1% by volume.
Some: Scattered or interspersed with cuttings, likely slough.

Abbreviations:
GEOT: Geotextile
GEON: Geonet / Geofabric
GEOG: Geogrid
GEOM: Geomembrane
VQ: Visqueen
REF: Refuse

IMG_5804: Recovery 0 to 2 feet (ft) below ground surface (bgs).

IMG_5805: Recovery 2 to 3 ft bgs.

IMG_5806: Recovery 3 to 5 ft bgs.

IMG_5807: Recovery 5 to 6 ft bgs.

IMG_5808: Recovery 6 to 7 ft bgs.

IMG_5810: Recovery 7 to 8.5 ft bgs.

IMG_5811: Recovery 8.5 to 9.5 ft bgs.

IMG_5812: Recovery 9.5 to 10.5 ft bgs.

IMG_5813: Recovery 11 to 12 ft bgs.

IMG_5814: Recovery 12 to 13 ft bgs.

IMG_5815: Recovery 14 to 15 ft bgs.

IMG_5816: Recovery 15 to 16 ft bgs.

IMG_5817: Recovery 16 to 17 ft bgs.

IMG_5818: Recovery 17 to 18 ft bgs.

IMG_5819: Recovery 18 to 19 ft bgs.

IMG_5820: Recovery 18 to 19 ft bgs. Driller's assistant removing material from auger. (1/2)

IMG_5821: Recovery 18 to 19 ft bgs. Driller's assistant removing material from auger. (2/2)

IMG_5822: Recovery 18 to 19ft bgs. Spread recovery by Driller's assistant. (1/2)

IMG_5823: Recovery 18 to 19ft bgs. Spread recovery by Driller's assistant. (2/2)

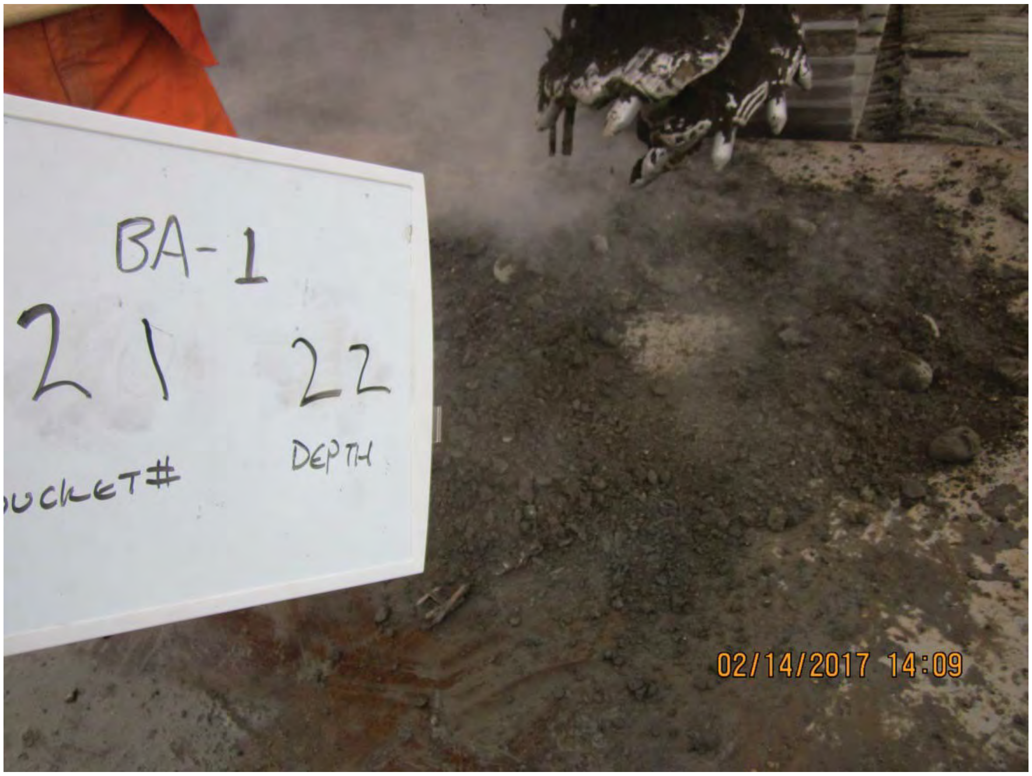
IMG_5824: Recovery 19 to 20 ft bgs.

IMG_5825: Recovery 20 to 21 ft bgs.

IMG_5826: Recovery 20 to 21 ft bgs. Spread for inspection. (1/2)

IMG_5827: Recovery 20 to 21 ft bgs. Spread for inspection. (2/2)

IMG_5828: Recovery 21 to 22 ft bgs.



IMG_5829: Recovery 21 to 22 ft bgs. Spread for inspection by Driller's assistant.

IMG_5830: Recovery 22 to 23 ft bgs.

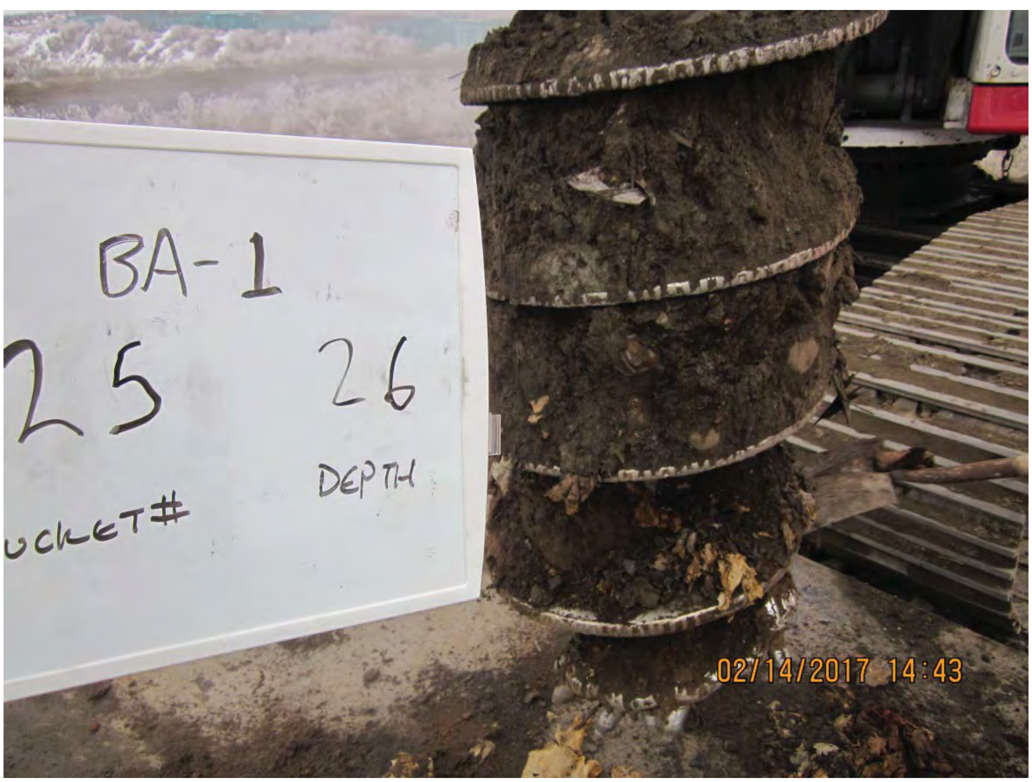
IMG_5831: Recovery 22 to 23 ft bgs. Spread for inspection by Driller's assistant.

IMG_5832: Recovery 23 to 24 ft bgs.

IMG_5833: Recovery 24 to 25 ft bgs.

IMG_5834: Recovery 24 to 25 ft bgs. Spread for inspection by Driller's assistant. (1/2)

IMG_5835: Recovery 24 to 25 ft bgs. Spread for inspection by Driller's assistant. (2/2)



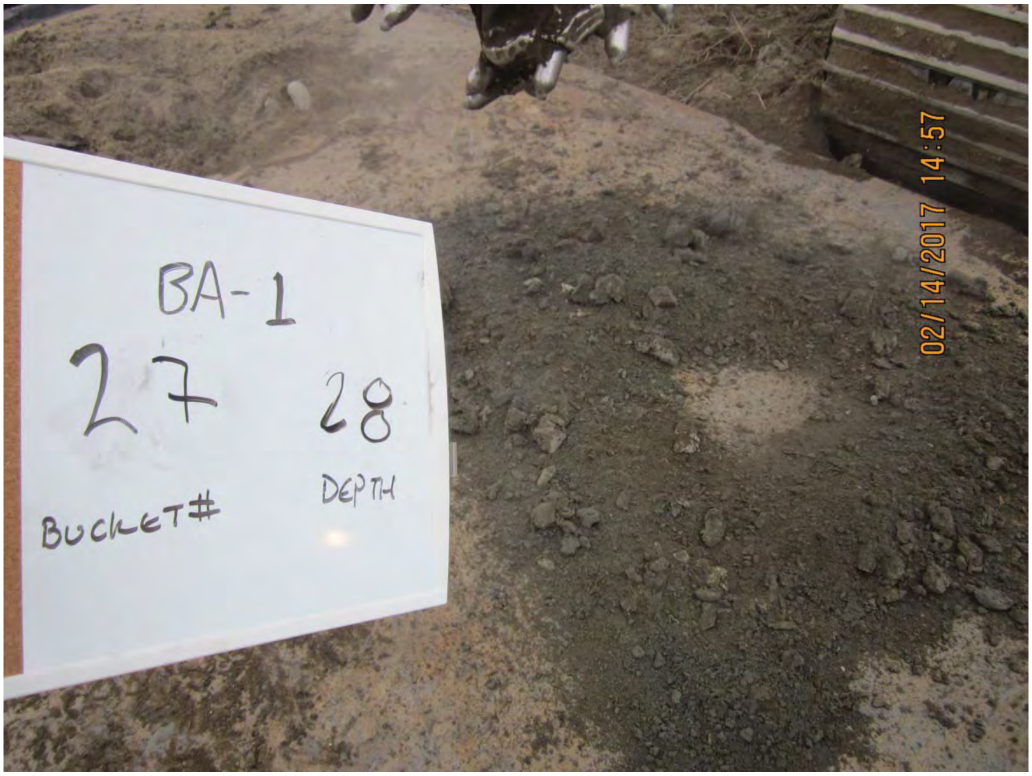
IMG_5836: Recovery 25 to 26 ft bgs.

IMG_5837: Recovery 25 to 26 ft bgs. Spread for inspection by Driller's assistant.

IMG_5838: Recovery 26 to 27 ft bgs.

IMG_5839: Recovery 26 to 27 ft bgs. Spread for inspection by Driller's assistant.

IMG_5840: Recovery 27 to 27 ft bgs.



IMG_5841: Recovery 27 to 28 ft bgs. Spread for inspection by Driller's assistant.

IMG_5842: Recovery 28 to 29 ft bgs. Pass No. 1.

IMG_5843: Recovery 28 to 29 ft bgs. Pass No. 1. Spread for inspection by Driller's assistant. (1/2)

IMG_5844: Recovery 28 to 29 ft bgs. Pass No. 1. Spread for inspection by Driller's assistant. (2/2)

IMG_5845: Recovery 28 to 29 ft bgs. Pass No. 2.

IMG_5846: Recovery 28 to 29 ft bgs. Pass No. 2. Driller's assistant spreading recovery for inspection.

IMG_5847: Recovery 28 to 29 ft bgs. Pass No. 2. Piece of metal drum recovered on auger. (1/2)

IMG_5848: Recovery 28 to 29 ft bgs. Pass No. 2 Piece of metal drum recovered on auger. (2/2)

IMG_5850: Recovery 29 to 31 ft bgs.

IMG_5851: Recovery 29 to 31 ft bgs. Spread for inspection by Driller's assistant.

IMG_5852: Recovery 31 to 32 ft bgs.

IMG_5853: Recovery 31 to 32 ft bgs. Spread for inspection by Driller's assistant.

IMG_5854: Recovery 32 to 33 ft bgs. Pass No. 1.

IMG_5855: Recovery 32 to 33 ft bgs. Pass No. 1. Metal fragments recovered. (1/2)

IMG_5856: Recovery 32 to 33 ft bgs. Pass No. 1. Metal fragments recovered. (2/2)

IMG_5857: Recovery 32 to 33 ft bgs. Pass No 1. Spread for inspection by Driller's assistant.

IMG_5858: Recovery 32 to 33 ft bgs. Pass No. 2. Lost depth of boring from previous passes due to slough within boring. (1/2)

IMG_5859: Recovery 32 to 33 ft bgs. Pass No. 2. Lost depth of boring from previous passes due to slough within boring. (2/2)

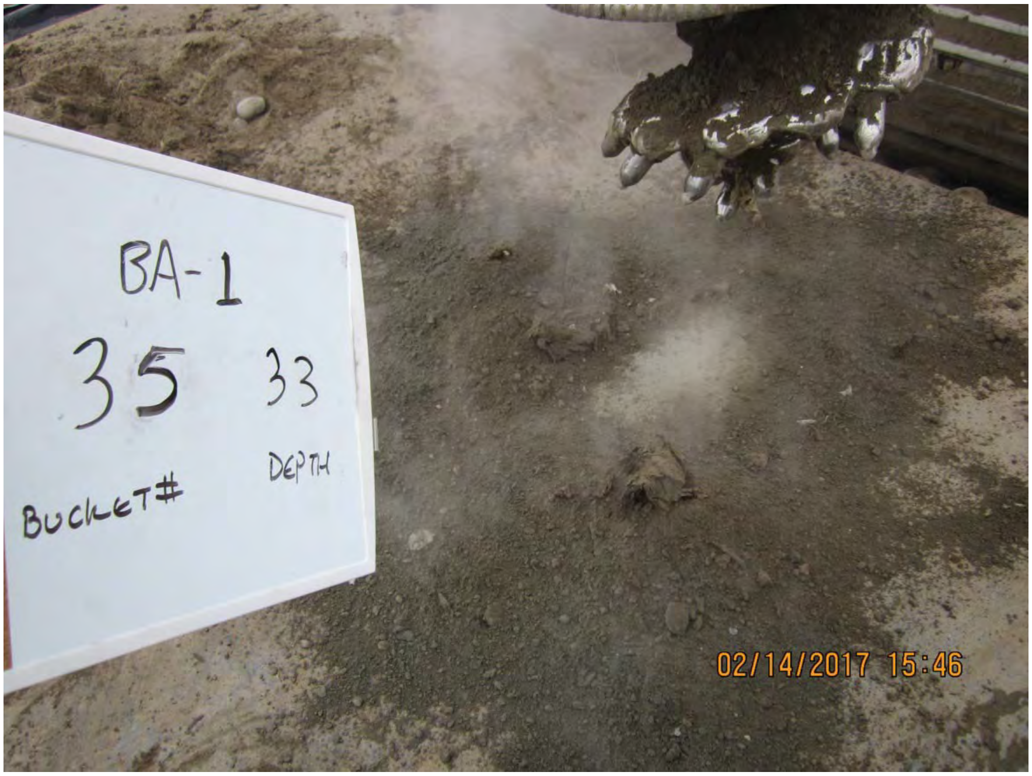
IMG_5860: Recovery 32 to 33 ft bgs. Pass No. 2. Spread for inspection by Driller's assistant.

IMG_5861: Recovery 32 to 33 ft bgs. Pass No. 3.

IMG_5862: Recovery 32 to 33 ft bgs. Pass No. 3. Spread for inspection by Driller's assistant.

IMG_5863: Recovery 32 to 33 ft bgs. Pass No. 4.

IMG_5864: Recovery 32 to 33 ft bgs. Pass No. 4. Spread for inspection by Driller's assistant. (1/3)



IMG_5865: Recovery 32 to 33 ft bgs. Pass No. 4. Spread for inspection by Driller's assistant. (2/3)

IMG_5866: Recovery 32 to 33 ft bgs. Pass No. 4. Spread for inspection by Driller's assistant. (3/3)

IMG_5867: Recovery 33 to 35 ft bgs.

IMG_5869: Recovery 33 to 35 ft bgs. Spread for inspection by Driller's assistant.

IMG_5872: Recovery 35 to 36.5 ft bgs.

IMG_5873: Recovery 35 to 36.5 ft bgs. Spread for inspection by Driller's assistant. Three (3) large metal pieces recovered.

IMG_5874: Recovery 36.5 to 37 ft bgs.

IMG_5875: Recovery 36.5 to 37 ft bgs. Spread for inspection by Driller's assistant.

IMG_5876: Recovery 37 to 38 ft bgs. Bottom of boring.

IMG_5877: Recovery 37 to 38 ft bgs. Spread for inspection by Driller's assistant. Bottom of boring.

BA-2 BORING LOG AND PHOTOGRAPHIC LOG

SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: BA-2

Pasco Sanitary Landfill
1901 Dietrich Road
Pasco, Washington

JOB NUMBER: 04209046.06

REMARKS:
All depths as reported by drilling equipment unless otherwise noted.

Depth (feet)	Temp. (deg F)	USCS Soil Class.	Description	Completion Detail
0		SM	11:00. Begin drilling at surface with 5-ft long core barrel tooling. Photo: IMG_5563	Site soil backfill to surface. No well casing installed.
1		**GEOM**	11:07. 1-ft bgs. Light brown silt and Geomembrane. Photos: IMG_5564	
2	54	ML	11:09. 2-ft bgs. Light brown silt. (Driller switched to open flight auger tooling.) Photos: IMG_5566, IMG_5567 11:26. 2.5-ft bgs. Same as above. Photo: IMG_5568	
3	53		11:29. 3-ft bgs. Same as above. Multiple passes required to clear loose material. Photos: IMG_5569, IMG_5570, IMG_5571	
4				Hydrated Bentonite Chip Seal (77 Bags)
5	58	**GEOT** ML **GEOM**	11:35. 5-ft bgs. Light brown silt overlying layers of Geotextile and Geomembrane. Multiple passes required to clear loose material. (Driller switched to 5-ft long core barrel and set fall protection casing.) Photos: IMG_5572 through IMG_5582	
7	48	ML	12:12. 7-ft bgs. Light brown silt. Moist. (Driller switched to open flight auger tooling prior to pass.) Photos: IMG_5583, IMG_5584	
7.5	49		12:18. 7.5-ft bgs. Same as above. Photos: IMG_5586, IMG_5587, IMG_5588	
8.5	59	ML	12:24. 8.5-ft bgs. Same as above. Photos: IMG_5589, IMG_5590	Site soil backfill.
10				

Depth scale: meters 0–3; feet 0–10.

Drilling Company:	**DBM Contractors, Inc.**
Drilling Method:	**IMT AF180**
Logged By:	**Ted Massart**
Sampling Method:	**24-inch Core Barrel and Auger**
Date Started:	**2/13/17**
Date Ended:	**2/14/17**
Boring Diameter:	**24-inch**
Time Started:	**11:00**
Time Ended:	**10:19**
Total Depth:	**35.0 ft.**

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: BA-2

Pasco Sanitary Landfill

JOB NUMBER: 04209046.06

Depth (feet)	Sample Location	Sample Number	TVS Result (%)	Temp. (deg F)	USCS Soil Class.	Description
10.5						12:28. 10.5-ft bgs. Light brown-gray silty sandy gravel. Moist. Photos: IMG_5591, IMG_5592
11					GP-GM	
12				81		12:32. 12-ft bgs. Light brown-gray silty sand. Moist. Photos: IMG_5593, IMG_5594
13					GP-GM	
13.5				78		12:34. 13.5-ft bgs. Same as above. Photos: IMG_5596, IMG_5597
14.5				82	GP	12:36. 14.5-ft bgs. Gray sandy gravel. Photos: IMG_5598, IMG_5599
16				89	GM	12:40. 16-ft bgs. Light brown-gray silty sandy gravel. Photos: IMG_5600, IMG_5601
17				86		12:43. 17-ft bgs. Light brown-gray silty sandy gravel. Steam present. Photos: IMG_5602, IMG_5603
17.5				84	GM	12:45. 17.5-ft bgs. Same as above. Photos: IMG_5604, IMG_5605
20.5				90 83	GM	12:49. 20.5-ft bgs. Light brown-gray silty sandy gravel. Steam present. A second pass was required to clear loose material. Photos: IMG_5606, IMG_5607, IMG_5608, IMG_5609

Depth scale: feet 10–22; meters 4, 5, 6.

Completion Detail

Depth (feet)	Completion
10–17	Site soil backfill.
17–20.5	Hydrated Bentonite Chip Seal (19 Bags)
20.5–22	3/4-inch Crushed rock without fines.

Pasco Sanitary Landfill | **JOB NUMBER: 04209046.06**

Depth (feet)	Sample Number	TVS Result (%)	Temp. (deg F)	USCS Soil Class.	Description
22			84		13:00. 22-ft bgs. Light brown-gray silty sandy grave. Steam present. Photos: IMG_5610, IMG_5611
23			88		13:03. 23-ft bgs. Light brown-gray silty sandy gravel. Steam and odor. Photos: IMG_5612, IMG_5613
24.5			94	ML	13:07. 24.5-ft bgs. Dark brown silt. Moist and steamy. Photos: IMG_5614, IMG_5615
26	BA-2 26.3'	8.07	93	ML	13:11. 26-ft bgs. Dark brown silt with ~20% (by volume) refuse and minor (<5%) paper products, including cardboard. Refuse consisted of rubber, plastics, and textiles. Moist with steam. Photos: IMG_5616 through IMG_5632
26.5			100		14:10. 26.5-ft bgs. Dark brown silt with minor (<5%) refuse, including a rubber tire. Moist with steam. (Driller switched to 5-ft long core barrel tooling.) Photos: IMG_5633 through IMG_5639
27.5	BA-2 28'	22.7	100	ML	14:22. 27.5-ft bgs. Same as above. (Driller switched to open flight auger tooling.) Photos: IMG_5640 through IMG_5644
29.5	BA-2 30'	28.5		ML	
31			96		14:45. 31-ft bgs. Dark brown-gray silt with minor (<5%) refuse, including steel, wood, and plastic. Blackened wood indicates decomposition or previous combustion. Moist and steamy. Photos: IMG_5645 through IMG_5651
33			93 90	ML	15:10. 33-ft bgs. Dark brown-gray silt with minimal (<1%) refuse, including steel, wood, and plastic. Blackened piece of wood was recovered in the cuttings, indicating decomposition or previous combustion. Moist and steamy. Photos: IMG_5652, IMG_5653, IMG_5654

Completion Detail: 3/4-inch Crushed rock without fines.

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: BA-2

Pasco Sanitary Landfill | **JOB NUMBER: 04209046.06**

Depth (meters)	Depth (feet)	Sample Location	Sample Number	TVS Result (%)	Temp. (deg F)	USCS Soil Class.	Graphic Log	Description	Completion Detail
	34					ML-SM		15:15. 33-ft bgs. Brown-gray silt with minimal (<1%) refuse. Apparent charred material was recovered in the cuttings. Moist. Photos: IMG_5655 through IMG_5660	3/4-inch Crushed rock without fines.
	35				85			15:22 35-ft bgs. Brown-gray silt. Moist and steamy. Photos: IMG_5661, IMG_5662 Bottom of boring 35-ft bgs. Boring terminated below refuse. Backfill of boring started, but not completed same day as drilling.	35 — Bottom of boring 35-ft bgs.
11	36								
	37								
	38								
	39								
12	40								40
	41								
	42								
13	43								
	44								
	45								45
14	46								

Definitions and General Notes

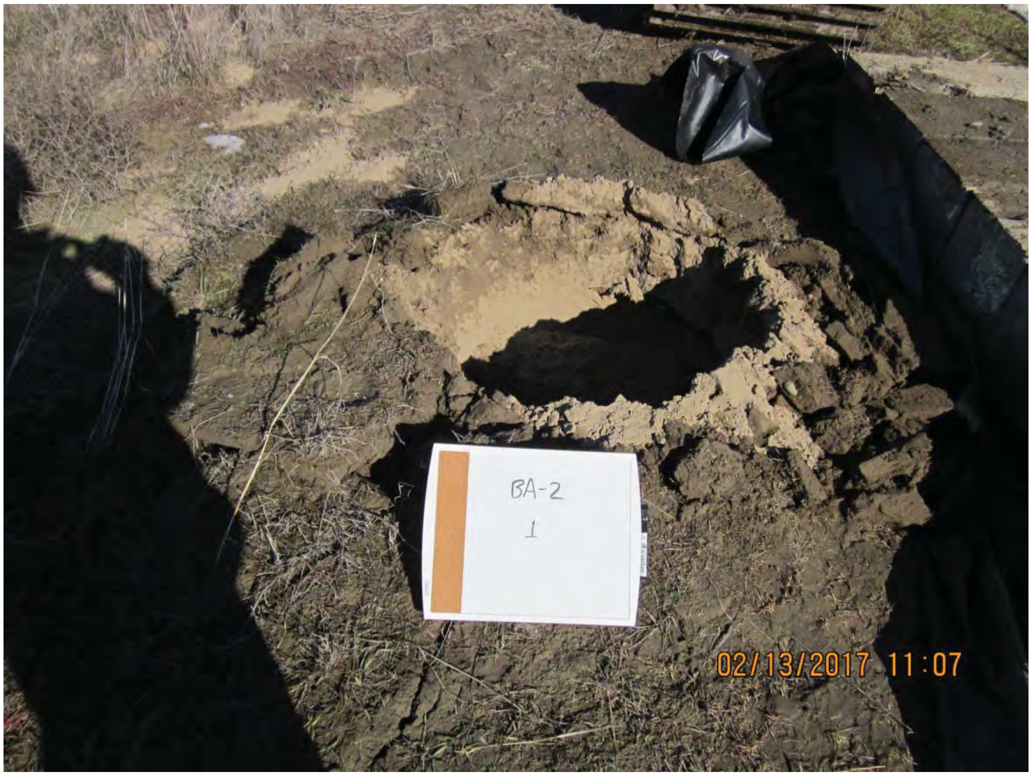
Moisture Conditions:
Dry: Absence of moisture, dusty, dry to the touch.
Moist: Damp, but no visible water or other liquids.
Wet: visible free water.

Particle Size Ranges:
Boulder: Greater than 12-inches in largest dimension.
Cobble: Between 3 and 12 inches in largest dimension.
Gravel: Greater than No. 4 Sieve (3/16-inch) and less than 3-inches in largest dimension.

Content Descriptions:
Minor: Less than 5% by volume.
Minimal: Less than 1% by volume.
Some: Scattered or interspersed with cuttings, likely slough.

Abbreviations:
GEOT: Geotextile
GEON: Geonet / Geofabric
GEOG: Geogrid
GEOM: Geomembrane
VQ: Visqueen
REF: Refuse

IMG_5563: Boring location and setup.



IMG_5564: Open boring after initial pass. Geomembrane visible in boring. Depth of boring 1 foot (ft) below ground surface (bgs).

IMG_5566: Open boring. Depth of boring 2 ft bgs.

IMG_5567: Recovered soils from boring. Depth of boring 2 ft bgs. Stockpiled for re-use.

IMG_5568: Recovery 2 to 2.5 ft bgs.

IMG_5569: Recovery 2.5 to 3 ft bgs. Pass No. 1.

IMG_5570: Recovery 2.5 to 3 ft bgs. Pass No. 2

IMG_5571: Recovery 2.5 to 3ft bgs. Pass No. 3

IMG_5572: Recovery 3 to 5 ft bgs. Pass No. 1.

IMG_5573: Driller switching tooling to core barrel prior to setting surface casing.

IMG_5574: Recovery 3 to 5 ft bgs. Pass No. 2. (1/2)

IMG_5575: Recovery 3 to 5 ft bgs. Pass No. 2. (2/2)

IMG_5576: Driller setting 48-inch diameter surface casing. (1/3)

IMG_5577: Driller setting 48-inch diameter surface casing. (2/3)

IMG_5578: Driller setting 48-inch diameter surface casing. (3/3)

IMG_5579: Recovery 3 to 5 ft bgs. Pass No. 3. (1/2)

IMG_5580: Recovery 3 to 5 ft bgs. Pass No. 3. (2/2)

IMG_5581: Recovery 3 to 5 ft bgs. Pass No. 4.

IMG_5582: Recovery 3 to 5 ft bgs. Piece of Geotextile recovered on auger. Pass No. 5.

IMG_5583: Recovery 5 to 7 ft bgs. Piece of Geomembrane visible. (1/2)

IMG_5584: Recovery 5 to 7 ft bgs. (2/2)

IMG_5586: Recovery 7 to 7.5 ft bgs. (1/3)

IMG_5587: Recovery 7 to 7.5 ft bgs. (2/3)

IMG_5588: Recovery 7 to 7.5 ft bgs. (3/3)

IMG_5589: Recovery 7.5 to 8.5 ft bgs. (1/2)

IMG_5590: Recovery 7.5 to 8.5 ft bgs. (2/2)

IMG_5591: Recovery 8.5 to 10.5 ft bgs. (1/2)

IMG_5592: Recovery 8.5 to 10.5 ft bgs. (2/2)

IMG_5593: Recovery 10.5 to 12 ft bgs. (1/2)

IMG_5594: Recovery 10.5 to 12 ft bgs. (2/2)

IMG_5596: Recovery 12 to 13.5 ft bgs. (1/2)

IMG_5597: Recovery 12 to 13.5 ft bgs. (2/2)

IMG_5598: Recovery 13.5 to 14.5 ft bgs. (1/2)

IMG_5599: Recovery 13.5 to 14.5 ft bgs. (2/2)

IMG_5600: Recovery 14.5 to 16 ft bgs. (1/2)

IMG_5601: Recovery 14.5 to 16 ft bgs. (2/2)

IMG_5602: Recovery 16 to 17 ft bgs. (1/2)

IMG_5603: Recovery 16 to 17 ft bgs. (2/2)

IMG_5604: Recovery 17 to 17.5 ft bgs. (1/2)

IMG_5605: Recovery 17 to 17.5 ft bgs. (2/2)

IMG_5606: Recovery 17.5 to 20.5 ft bgs. Pass No. 1. (1/2)

IMG_5607: Recovery 17.5 to 20.5 ft bgs. Pass No. 1. (2/2)

IMG_5608: Recovery 17.5 to 20.5 ft bgs. Pass No. 2.

IMG_5609: Recovery 20.5 to 21.5 ft bgs. The total pass count number shown (22) is erroneous.

IMG_5610: Recovery 21.5 to 22 ft bgs. (1/2)

IMG_5611: Recovery 21.5 to 22 ft bgs. (2/2)

IMG_5612: Recovery 22 to 23 ft bgs. (1/2)

IMG_5613: Recovery 22 to 23 ft bgs. (2/2)

IMG_5614: Recovery 23 to 24.5 ft bgs. (1/2)

IMG_5615: Recovery 23 to 24.5 ft bgs. (2/2)

IMG_5616: Recovery 24.5 to 26 ft bgs. (1/17)

IMG_5617: Recovery 24.5 to 26 ft bgs. (2/17)

IMG_5618: Recovery 24.5 to 26 ft bgs. (3/17)

IMG_5619: Recovery 24.5 to 26 ft bgs. (4/17)

IMG_5620: Recovery 24.5 to 26 ft bgs. (5/17)

IMG_5621: Recovery 24.5 to 26 ft bgs. (6/17)

IMG_5622: Recovery 24.5 to 26 ft bgs. (7/17)

IMG_5623: Recovery 24.5 to 26 ft bgs. (8/17)

IMG_5624: Recovery 24.5 to 26 ft bgs. (9/17)

IMG_5625: Recovery 24.5 to 26 ft bgs. (10/17)

IMG_5626: Recovery 24.5 to 26 ft bgs. (11/17)

IMG_5627: Recovery 24.5 to 26 ft bgs. (12/17)

IMG_5628: Recovery 24.5 to 26 ft bgs. (13/17)

IMG_5629: Recovery 24.5 to 26 ft bgs. (14/17)

IMG_5630: Recovery 24.5 to 26 ft bgs. (15/17)

IMG_5631: Recovery 24.5 to 26 ft bgs. (16/17)

IMG_5632: Recovery 24.5 to 26 ft bgs. (17/17)

IMG_5633: Recovery 26 to 26.5 ft bgs. (1/7)

IMG_5634: Recovery 26 to 26.5 ft bgs. (2/7)

IMG_5635: Recovery 26 to 26.5 ft bgs. (3/7)

IMG_5636: Recovery 26 to 26.5 ft bgs. (4/7)

IMG_5637: Recovery 26 to 26.5 ft bgs. (5/7)

IMG_5638: Recovery 26 to 26.5 ft bgs. (6/7)

IMG_5639: Recovery 26 to 26.5 ft bgs. (7/7)

IMG_5640: Recovery 26.5 to 27.5 ft bgs. (1/5)

IMG_5641: Recovery 26.5 to 27.5 ft bgs. (2/5)

IMG_5642: Recovery 26.5 to 27.5 ft bgs. (3/5)

IMG_5643: Recovery 26.5 to 27.5 ft bgs. (4/5)

IMG_5644: Recovery 26.5 to 27.5 ft bgs. (5/5)

IMG_5645: Recovery 27.5 to 31 ft bgs. (1/7)

IMG_5646: Recovery 27.5 to 31 ft bgs. (2/7)

IMG_5647: Recovery 27.5 to 31 ft bgs. (3/7)

IMG_5648: Recovery 27.5 to 31 ft bgs. (4/7)

IMG_5649: Recovery 27.5 to 31 ft bgs. (5/7)

IMG_5650: Recovery 27.5 to 31 ft bgs. (6/7)

IMG_5651: Recovery 27.5 to 31 ft bgs. (7/7)

IMG_5652: Recovery 31 to 33 ft bgs. Pass No. 1. (1/3)

IMG_5653: Recovery 31 to 33 ft bgs. Pass No. 1. (2/3)

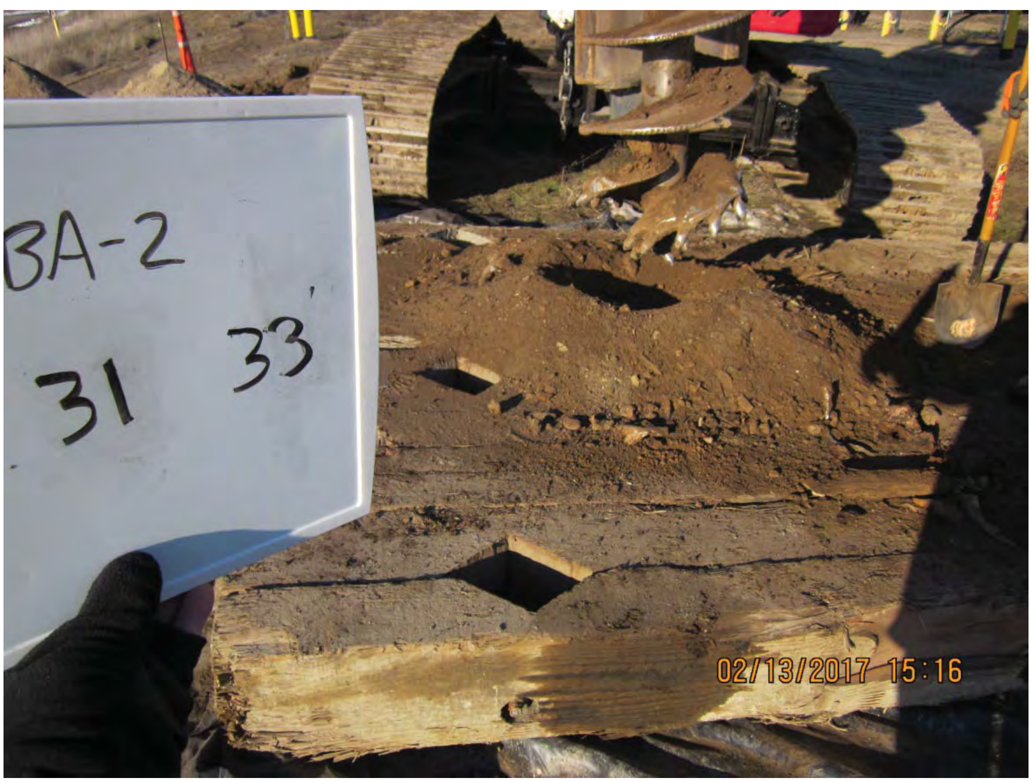
IMG_5654: Recovery 31 to 33 ft bgs. Pass No. 1. (3/3)

IMG_5655: Recovery 31 to 33 ft bgs. Pass No. 2. (1/6)

IMG_5656: Recovery 31 to 33 ft bgs. Pass No. 2. (2/6)

IMG_5657: Recovery 31 to 33 ft bgs. Pass No. 2. (3/6)

IMG_5658: Recovery 31 to 33 ft bgs. Pass No. 2. (4/6)



IMG_5659: Recovery 31 to 33 ft bgs. Pass No. 2. (5/6)

IMG_5660: Recovery 31 to 33 ft bgs. Pass No. 2. (6/6)

IMG_5661: Recovery 33 to 35 ft bgs. Bottom of boring. (1/2)

IMG_5662: Recovery 33 to 35 ft bgs. Bottom of boring. (2/2)

BA-3 BORING LOG AND PHOTOGRAPHIC LOG

SCS ENGINEERS — BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: BA-3

Pasco Sanitary Landfill
1901 Dietrich Road
Pasco, Washington

JOB NUMBER: 04209046.06

REMARKS:
All depths as reported by drilling equipment unless otherwise noted.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	TVS Result (%)	Temp. (deg F)	USCS Soil Class.	Description	Completion Detail
0	0						08:02. Begin drilling at surface with open flight auger tooling. Brown silty sand. Moist to wet. (Driller set fall protection casing at surface.) Photos: IMG_5881, IMG_5882	
	1					SM		Site soil backfill to surface. No well casing installed.
	2							
	2.5					GEOT	08:14. 2.5-ft bgs. Black woven Geotextile overlying a gray sandy gravel. Moist. Photo: IMG_5882	
1	3							
	4					SM		
	5					GP	08:16. 5.5-ft bgs. Gray sandy gravel overlying a layer of black woven Geotextile and Geomembrane. Moist. Photo: IMG_5883	
	5.5					GEOM		
	6					SM		Hydrated Bentonite Chip Seal (21 Bags)
2	7				39		08:22. 7-ft bgs. Gray sandy gravel with minor (<5% by volume) cobble. Moist. Photo: IMG_5884	
	8				72.6	SM	08:25. 8-ft bgs. Same as above. Moist and steamy. Photos: IMG_5885, IMG_5886	
	9							Site soil backfill.
3	10							

Drilling Company:	**DBM Contractors, Inc.**
Drilling Method:	**IMT AF180**
Logged By:	**Sam Adlington**
Sampling Method:	**24-inch Core Barrel and Auger**

Date Started:	**2/15/17**	Time Started:	**07:35**
Date Ended:	**2/15/17**	Time Ended:	**11:20**
Boring Diameter:	**24-inch**	Total Depth:	**36.0 ft.**

SCS ENGINEERS

BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: BA-3

Pasco Sanitary Landfill

JOB NUMBER: 04209046.06

Depth (meters)	Depth (feet)	Sample Location	Sample Number	TVS Result (%)	Temp. (deg F)	USCS Soil Class.	Description	Completion Detail
	10							
	11					SM		Site soil backfill.
	12				77.3	GEON GEOT	08:29. 12-ft bgs. Brown-gray silty sandy gravel with Geonet / Geofabric and Geotextile fragments in cuttings overlying brown silty sand. Moist and steamy. Photo: IMG_5887	
4	13					GP		
	14					GP		
	15				79.4	VQ	08:29. 15-ft bgs. Gray silty sand overlying layer of white Visqueen and gray silty sand. Moist and steamy. Photo: IMG_5888	Hydrated Bentonite Chip Seal (26 Bags)
5	16					SM	08:36. 16-ft bgs. Same as above. Fragments of white Visqueen layer present in cuttings. Moist and steamy. Photo: IMG_5889	
	17							
	18				74.7	ML	08:35. 18-ft bgs. Gray sandy silt. Dense and compact. Moist and steamy. Photo: IMG_5890	
6	19						08:40. 19.5-ft bgs. Gray sandy silt with patches of brown sandy silt. Moist and steamy. Photo: IMG_5891	
	20							3/4-inch Crushed rock without fines.
	21				76.0 72.6	ML	08:42. 21-ft bgs. Gray dense sandy silt overlying brown silty sand with minimal (<1%) wood debris. Moist and steamy. Photo: IMG_5892, IMG_5893	
	22							

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: BA-3

Pasco Sanitary Landfill

JOB NUMBER: 04209046.06

Depth (feet)	Sample Number	TVS Result (%)	Temp. (deg F)	USCS Soil Class.	Description	Completion Detail
22					08:55. 21.5-ft bgs. Gray silty sand and ~30% brown-black decomposed refuse, including opaque plastics and textiles. Steamy. Photos: IMG_5894, IMG_5895	
23	BA-3 23'	8.08	84.7	SM-REF	09:02. 23-ft bgs. Gray silty sand with ~30% black decomposed refuse, including opaque plastics. Moist and steamy. Photos: IMG_5896, IMG_5897	
24.5				SM	09:10. 24.5-ft bgs. Gray silty sand with minor (<5%) black decomposed refuse, including opaque plastics, and some metal pieces. Moist to wet and steamy. Photos: IMG_5898, IMG_5899	
26	BA-3 26'	20.2	88.6	REF	09:15. 26-ft bgs. Brown-black decomposed refuse (opaque plastics) with ~25% brown black decomposed wood debris, ~20% brown-black decomposed paper, and minor (<5%) soil. Moist and steamy. (Driller switched to 5-ft long core barrel tooling.) Photos: IMG_5900, IMG_5901, IMG_5902	
27.5			92.7	SM-REF	09:30. 27.5-ft bgs. Dark brown gravely sand with ~40% brown-tan wood and paper fiber debris. Moist and steamy. Photos: IMG_5903, IMG_5904, IMG_5905	3/4-inch Crushed rock without fines.
29	BA-3 29'	8.17	98.0		09:45. 29-ft bgs. Dark brown silty sand with ~20% boulders and ~20% brown-tan wood debris. Moist and steamy. Photos: IMG_5906, and IMG_5907	
30.5			97.1	SM	09:58. 30.5-ft bgs. Brown-tan silty sand with ~30% brown decomposed wood debris. Moist. One large metal fragment recovered overlying light brown silt lens. Dry to moist and steamy. Photos: IMG_5908, IMG_5909	
33			98.6	SM	10:03. 33-ft bgs. Brown silty sand with some to minor (<5%) brown decomposed refuse, including opaque plastics, and minor (<5%) gravel and cobble. Moist and steamy. Photos: IMG_5910, IMG_5911	

Depth scale: meters 7, 8, 9, 10; feet 22–34.

SCS ENGINEERS | **BORING LOG**

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: BA-3

Pasco Sanitary Landfill | **JOB NUMBER: 04209046.06**

Depth (meters)	Depth (feet)	Sample Location	Sample Number	TVS Result (%)	Temp. (deg F)	USCS Soil Class.	Graphic Log	Description	Completion Detail
	34					SM			3/4-inch Crushed rock without fines.
	35				107.1	ML		10:17. 35.5-ft bgs. Brown-tan silty sand with minor (<5%) brown wood debris overlying brown sandy silt. Moist. Photo: IMG_5912	
11	36				102.7			10:29. 36-ft bgs. Bottom of boring measured at 36-ft bgs with tooling removed. Brown sandy silt with minor (<5%) gravel and cobble. Dry to moist and steamy. Photos: IMG_5913, IMG_5914, IMG_5915	Bottom of boring 36-ft bgs.

Bottom of boring 36-ft bgs.

Boring terminated due to reaching Touchet Bed soils.

Definitions and General Notes
Moisture Conditions:
Dry: Absence of moisture, dusty, dry to the touch.
Moist: Damp, but no visible water or other liquids.
Wet: visible free water.

Particle Size Ranges:
Boulder: Greater than 12-inches in largest dimension.
Cobble: Between 3 and 12 inches in largest dimension.
Gravel: Greater than No. 4 Sieve (3/16-inch) and less than 3-inches in largest dimension.

Content Descriptions:
Minor: Less than 5% by volume.
Minimal: Less than 1% by volume.
Some: Scattered or interspersed with cuttings, likely slough.

Abbreviations:
GEOT: Geotextile
GEON: Geonet / Geofabric
GEOG: Geogrid
GEOM: Geomembrane
VQ: Visqueen
REF: Refuse

Depth scale: meters 11, 12, 13, 14; feet 34–46

IMG_5881: Driller setting fall protection casing at surface.

IMG_5882: Recovery 0 to 3.5 feet (ft) below ground surface (bgs.). Piece of Geotextile recovered on bottom flight of auger.

IMG_5883: Recovery 3.5 to 5.5 ft bgs. Piece of Geotextile recovered on auger.

IMG_5884: Recovery 5.5 to 7 ft bgs.

IMG_5585: Recovery 7 to 8 ft bgs. (1/2)

IMG_5886: Recovery 7 to 8 ft bgs. (2/2)

IMG_5887: Recovery 8 to 12 ft bgs. Pieces of Geotextile and Geonet recovered on bottom flight of auger.

IMG_5888: Recovery 12 to 15 ft bgs.

IMG_5889: Recovery 15 to 16 ft bgs. Pieces of Visqueen (white) recovered on the auger.

IMG_5890: Recovery 16 to 18 ft bgs.

IMG_5891: Recovery 18 to 19.5 ft bgs.

IMG_5892: Recovery 19.5 to 21 ft bgs. Wood debris recovered on bottom flights of auger. (1/2)

IMG_5893: Recovery 19.5 to 21 ft bgs. Wood debris recovered on bottom flights of auger. Spread for inspection by Driller's assistant. (2/2)

IMG_5894: Recovery 21 to 21.5 ft bgs. (1/2)

IMG_5895: Recovery 21 to 21.5 ft bgs. Spread for inspection by Driller's assistant. (2/2)

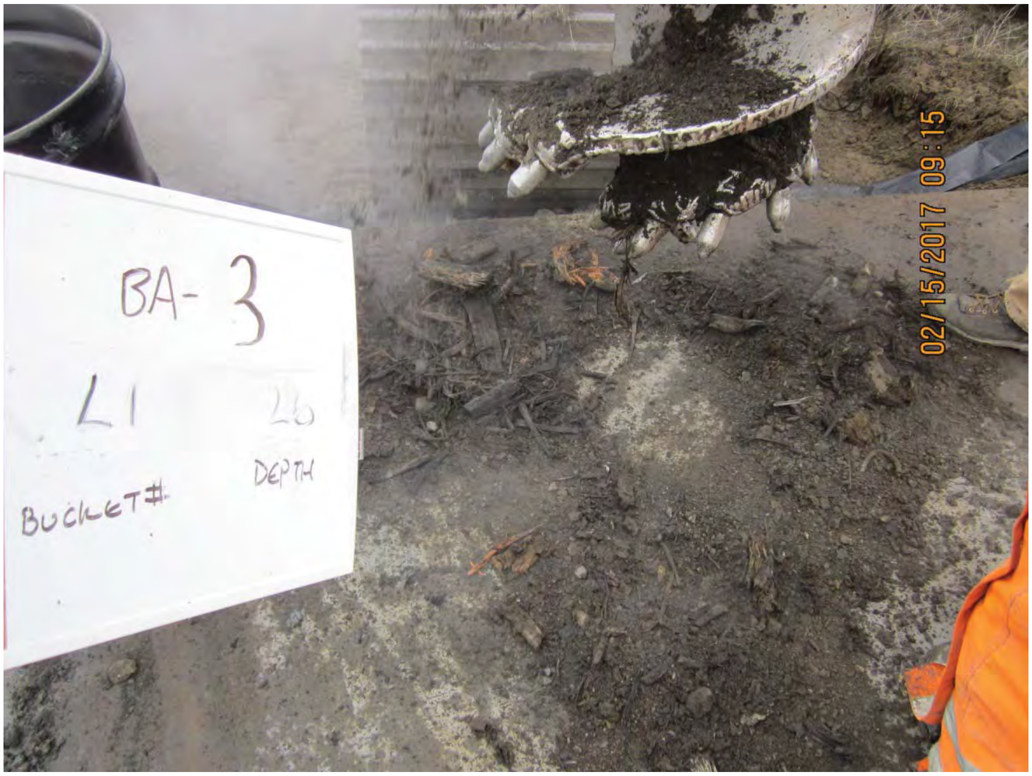
IMG_5896: Recovery 21.5 to 23 ft bgs. (1/2)

IMG_5897: Recovery 21.5 to 23 ft bgs. Spread for inspection by Driller's assistant. (2/2)

IMG_5898: Recovery 23 to 24.5 ft bgs. (1/2)

IMG_5899: Recovery 23 to 24.5 ft bgs. Spread for inspection by Driller's assistant. (2/2)

IMG_5900: Recovery 24.5 to 26 ft bgs. (1/3)



IMG_5901: Recovery 24.5 to 26 ft bgs. Spread for inspection by Driller's assistant. (2/3)

IMG_5902: Recovery 24.5 to 26 ft bgs. (3/3)

IMG_5903: Recovery 26 to 27.5 ft bgs. Spread for inspection by Driller's assistant. (1/3)

IMG_5904: Recovery 26 to 27.5 ft bgs. Recovered materials being drummed for disposal. (2/3)

IMG_5905: Recovery 26 to 27.5 ft bgs. Recovered materials being drummed for disposal. (3/3)

IMG_5906: Recovery 27.5 to 29 ft bgs. Fragment of boulder encountered. (1/2)

IMG_5907: Recovery 27.5 to 29 ft bgs. Fragments of boulder and wood debris encountered. (2/2)

IMG_5908: Recovery 29 to 30.5 ft bgs. (1/2)

IMG_5909: Recovery 29 to 30.5 ft bgs. (2/2)

IMG_5910: Recovery 30.5 to 33 ft bgs. (1/2)

IMG_5911: Recovery 30.5 to 33 ft bgs. (2/2)

IMG_5912: Recovery 33 to 35.5 ft bgs.

IMG_5913: Recovery 35 to 36 ft bgs. Bottom of boring. (1/3)

IMG_5914: Recovery 35 to 36 ft bgs. Bottom of boring. (2/3)

IMG_5915: Recovery 35 to 36 ft bgs. Bottom of boring. (3/3)

BA-4 BORING LOG AND PHOTOGRAPHIC LOG

SCS ENGINEERS — BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: BA-4

Pasco Sanitary Landfill
1901 Dietrich Road
Pasco, Washington

JOB NUMBER: 04209046.06

REMARKS:
All depths as reported by drilling equipment unless otherwise noted.

Depth (feet)	USCS Soil Class.	Description	Completion Detail
0	ML	07:40. Begin drilling at surface with open flight auger tooling. Brown silt. Moist. (Driller set fall protection casing at surface.) Photos: IMG_5663	Site soil backfill to surface. No well casing installed.
4.5		07:49. 4.5-ft bgs. Brown silt. Moist. Photos: IMG_5664, IMG_5665	Hydrated Bentonite Chip Seal (74 Bags)
5	**GEOT** / SW	07:51. 5-ft bgs. Brown sand overlying black woven Geotextile. Photos: IMG_5666, IMG_5667, IMG_5668	
6	**GEOM** / ML	07:54. 6-ft bgs. Brown-gray sand overlying Geomembrane. Photos: IMG_5669, IMG_5670	
7	ML	08:02. 7-ft bgs. Light brown sandy silt. Multiple passes required to clear loose material. Photos: IMG_5675 through IMG_5682	
8		08:09. 8-ft bgs. Same as above. Photos: IMG_5687, IMG_5688	Site soil backfill.
9	ML	08:10. 9-ft bgs. Light brown silt. Multiple passes required to clear loose material and slough. Photos: IMG_5689 through IMG_5694	

Depth scale: meters 0–3; feet 0–10.

Drilling Company:	**DBM Contractors, Inc.**
Drilling Method:	**IMT AF180**
Logged By:	**Ted Massart**
Sampling Method:	**24-inch Core Barrel and Auger**

Date Started:	**2/14/17**	Time Started:	**07:40**
Date Ended:	**2/14/17**	Time Ended:	**12:20**
Boring Diameter:	**24-inch**	Total Depth:	**35.0 ft.**

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: BA-4

Pasco Sanitary Landfill

JOB NUMBER: 04209046.06

Depth (meters)	Depth (feet)	Sample Location	Sample Number	TVS Result (%)	Temp. (deg F)	USCS Soil Class.	Description	Completion Detail
	10					SM	08:15. 10-ft bgs. Light brown silty sand with minor (<5% by volume) gravel. Photos: IMG_5695, IMG_5696	10
	11					SM-GM	08:16. 11-ft bgs. Light brown-gray silty sandy gravel. Photos: IMG_5697, IMG_5698	Site soil backfill.
	12				83		08:19. 12-ft bgs. Light brown-gray silty sandy gravel. Steam present. Multiple passes required to clear loose material. Photos: IMG_5699 through IMG_5706	
4	13				84	SM-GM	08:26. 13-ft bgs. LIght brown-gray silty sandy gravel. Steam present. Photos: IMG_5707 through IMG_5710	
	14				89		08:30. 14-ft bgs. Light brown-gray silty sandy gravel. Steam present. Photos: IMG_5711, IMG_5712	
	15					SM-GM		15 Hydrated Bentonite Chip Seal (16 Bags)
					86	**GEOG**	08:33. 15.5-ft bgs. Light brown-gray silty sandy gravel. Pieces of Geogrid in cuttings, ~12-inches in diameter. Steamy. Photos: IMG_5713, IMG_5714, IMG_5715	
5	16					GM	08:35. 16.5-ft bgs. Light brown-gray silty sandy gravel. Photos: IMG_5716, IMG_5717	
	17				90	GM	08:38. 17.5-ft bgs. Light brown silty. Moist and steamy. Photo: IMG_5718	
	18				90	**VQ**	08:41. 18.5-ft bgs. Light brown silt. Pieces of Visqueen recovered in cuttings. Steam present. Photos: IMG_5719, IMG_5720	
6	19				92	ML	08:44. 19.5-ft bgs. Light brown silt. Moist and steamy. Photo: IMG_5721	
	20				94	ML	08:47. 20.5-ft bgs. Light brown silt. Moist and steamy. Photo: IMG_5722	20
	21				97		08:52. 21.5-ft bgs. Light brown silt. Moist and steamy. Photos: IMG_5723, IMG_5724	3/4-inch Crushed rock without fines.
	22							

Pasco Sanitary Landfill | **JOB NUMBER: 04209046.06**

Depth (feet)	Sample Number	TVS Result (%)	Temp. (deg F)	USCS Soil Class.	Description
22.5			99		08:55. 22.5-ft bgs. Light brown silt. Moist and steamy. Photos: IMG_5725, IMG_5726, IMG_5727
23.5			94	SM-ML	08:57. 23.5-ft bgs. Light brown silt. Moist and steamy. Photos: IMG_5728, IMG_5729
24.5			99	SM	09:01. 24.5-ft bgs. Light brown silt with <2% refuse (paper, platic, and wire), including some blackened debris by decomposition or previous combustion. Photos: IMG_5730 through IMG_5735
25.5–26	BA-4 35	3.00			
26			121	SM-GM	09:19. 26-ft bgs. Light brown silty sandy gravel with <2% refuse, including plastics and glass. Dry to moist with steam. Photos: IMG_5736 through IMG_5742
28–28.5	BA-4 36	16.6			
28.5			128	SM	09:32. 28.5-ft bgs. Brown silt with <2%refuse, including plastic and glass. Dry to moist with steam. Multiple passes required to remove loose material. Photos: IMG_5743 through IMG_5765
29.5–30	BA-4 39'	6.53	100		10:31. 29.5-ft bgs. Light brown silt with minimal (<1%) refuse, including plastic, glass, and wood. Dry to moist. Photos: IMG_5766 through IMG_5772
30			99	SM	10:47. 30-ft bgs. Light brown silt with some minimal (<1%) refuse, including plastic, wood, and metal. Dry. Photos: IMG_5773 through IMG_5778
31.5			101	SM	11:08. 31.5-ft bgs. Light brown silt with minimal (<1%) refuse, including plastics, metal, wood and glass. Dry. Photos: IMG_5779 through IMG_5785
32.5			100		11:20. 32.5-ft bgs. Same as above. Photos: IMG_5786 through IMG_5792
33.5			97	SM	11:34. 33.5-ft bgs. Light brown silt with some minimal (<1%) refuse, including plastic, metal, wood, glass. Dry. Photos: IMG_5793 through IMG_5799

Completion Detail: 3/4-inch Crushed rock without fines.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	TVS Result (%)	Temp. (deg F)	USCS Soil Class.	Graphic Log	Description	Completion Detail
	34					ML			3/4-inch Crushed rock without fines.
	35							11:49. 35-ft bgs. Light brown silt . Dry. Photos: IMG_5800 through IMG_5803 Bottom of boring 35-ft bgs. Boring terminated below refuse.	Bottom of boring 35-ft bgs.
11	36								
	37								
	38								
	39								
12	40								
	41								
	42								
13	43								
	44								
	45								
14	46								

Definitions and General Notes
Moisture Conditions:
Dry: Absence of moisture, dusty, dry to the touch.
Moist: Damp, but no visible water or other liquids.
Wet: visible free water.

Particle Size Ranges:
Boulder: Greater than 12-inches in largest dimension.
Cobble: Between 3 and 12 inches in largest dimension.
Gravel: Greater than No. 4 Sieve (3/16-inch) and less than 3-inches in largest dimension.

Content Descriptions:
Minor: Less than 5% by volume.
Minimal: Less than 1% by volume.
Some: Scattered or interspersed with cuttings, likely slough.

Abbreviations:
GEOT: Geotextile
GEON: Geonet / Geofabric
GEOG: Geogrid
GEOM: Geomembrane
VQ: Visqueen
REF: Refuse

IMG_5663: Driller setting fall protection casing at surface.

IMG_5664: Recovery 0 to 4.5 feet (ft) below ground surface (bgs.) (1/2)

IMG_5665: Recovery 0 to 4.5 feet (ft) below ground surface (bgs.) (2/2)

IMG_5666: Recovery 4.5 to 5 ft bgs. Piece of Geotextile recovered on auger. (1/3).

IMG_5667: Open boring with fall protection casing. Depth of boring 5 ft bgs. (2/3)

IMG_5668: Recovery 4.5 to 5 ft bgs. (3/3)

IMG_5669: Recovery 5 to 6 ft bgs. Piece of Geomembrane recovered. (1/2)

IMG_5670: Recovery 5 to 6 ft bgs. Piece of Geomembrane recovered. (2/2)

IMG_5675: Recovery 6 to 7 ft bgs. Pass No. 1. (1/8)

IMG_5676: Recovery 6 to 7 ft bgs. Pass No. 1. (2/8)

IMG_5677: Recovery 6 to 7 ft bgs. Pass No. 1. (3/8)

IMG_5678: Recovery 6 to 7 ft bgs. Pass No. 2. (4/8)

IMG_5679: Recovery 6 to 7 ft bgs. Pass No. 2. (5/8)

IMG_5680: Recovery 6 to 7 ft bgs. Pass No. 3. (6/8)

IMG_5681: Recovery 6 to 7 ft bgs. Pass No. 3. (7/8)

IMG_5682: Recovery 6 to 7 ft bgs. Pass No. 4. (8/8)

IMG_5687: Recovery 7 to 8 ft bgs. (1/2)

IMG_5688: Recovery 7 to 8 ft bgs. (2/2)

IMG_5689: Recovery 8 to 9 ft bgs. Pass No. 1. (1/6)

IMG_5690: Recovery 8 to 9 ft bgs. Pass No. 1. (2/6)

IMG_5691: Recovery 8 to 9 ft bgs. Pass No. 2. (3/6)

IMG_5692: Recovery 8 to 9 ft bgs. Pass No. 2. (4/6)

IMG_5693: Recovery 8 to 9 ft bgs. Pass No. 3. (5/6)

IMG_5694: Recovery 8 to 9 ft bgs. Pass No. 3. (6/6)

IMG_5695: Recovery 9 to 10 ft bgs. (1/2)

IMG_5696: Recovery 9 to 10 ft bgs. (2/2)

IMG_5697: Recovery 10 to 11 ft bgs. (1/2)

IMG_5698: Recovery 10 to 11 ft bgs. (2/2)

IMG_5699: Recovery 11 to 12 ft bgs. Pass No. 1. (1/8)

IMG_5700: Recovery 11 to 12 ft bgs. Pass No. 1. (2/8)

IMG_5701: Recovery 11 to 12 ft bgs. Pass No. 2. (3/8)

IMG_5702: Recovery 11 to 12 ft bgs. Pass No. 2. (4/8)

IMG_5703: Recovery 11 to 12 ft bgs. Pass No. 3. (5/8)

IMG_5704: Recovery 11 to 12 ft bgs. Pass No. 3. (6/8)

IMG_5705: Recovery 11 to 12.5 ft bgs. Pass No. 4. (7/8)

IMG_5706: Recovery 11 to 12.5 ft bgs. Pass No. 4. (8/8)

IMG_5707: Recovery 12.5 to 13 ft bgs. (1/2)

IMG_5708: Recovery 12.5 to 13 ft bgs. (2/2)

IMG_5709: Recovery 13 to 13.5 ft bgs. (1/2)

IMG_5710: Recovery 13 to 13.5 ft bgs. (1/2)

IMG_5711: Recovery 13.5 to 14 ft bgs. (1/2)

IMG_5712: Recovery 13.5 to 14 ft bgs. (2/2)

IMG_5713: Recovery 14 to 15.5 ft bgs. Piece of Geogrid recovered on bottom flight of auger. (1/3)

IMG_5714: Recovery 14 to 15.5 ft bgs. Piece of Geogrid recovered on bottom flight of auger. (2/3)

IMG_5715: Recovery 14 to 15.5 ft bgs. (3/3)

IMG_5716: Recovery 15.5 to 16.5 ft bgs. (1/2)

IMG_ 5717: Recovery 15.5 to 16.5 ft bgs. (2/2)

IMG_5718: Recovery 16.5 to 17.5 ft bgs.

IMG_5719: Recovery 17.5 to 18.5 ft bgs. Piece of Visqueen (white) recovered on bottom flight of auger. (1/2)

IMG_5720: Recovery 17.5 to 18.5 ft bgs. Piece of Visqueen recovered on bottom flight of auger. (2/2)

IMG_5721: Recovery 18.5 to 19.5 ft bgs.

IMG_5722: Recovery 19.5 to 20.5 ft bgs.

IMG_5723: Recovery 20.5 to 21.5 ft bgs. (1/2)

IMG_5724: Recovery 20.5 to 21.5 ft bgs. (2/2)

IMG_5725: Recovery 21.5 to 22.5 ft bgs. (1/3)

IMG_5726: Recovery 21.5 to 22.5 ft bgs. (2/3)

IMG_5727: Recovery 21.5 to 22.5 ft bgs. (3/3)

IMG_5728: Recovery 22.5 to 23.5 ft bgs. (1/2)

IMG_5729: Recovery 22.5 to 23.5 ft bgs. (2/2)

IMG_5730: Recovery 23.5 to 24.5 ft bgs. (1/6)

IMG_5731: Recovery 23.5 to 24.5 ft bgs. (2/6)

IMG_5732: Recovery 23.5 to 24.5 ft bgs. (3/6)

IMG_5733: Recovery 23.5 to 24.5 ft bgs. (4/6)

IMG_5734: Recovery 23.5 to 24.5 ft bgs. (5/6)

IMG_5735: Recovery 23.5 to 24.5 ft bgs. (6/6)

IMG_5736: Recovery 24.5 to 26 ft bgs. (1/7)

IMG_5737: Recovery 24.5 to 26 ft bgs. (2/7)

IMG_5738: Recovery 24.5 to 26 ft bgs. (3/7)

IMG_5739: Recovery 24.5 to 26 ft bgs. (4/7)

IMG_5740: Recovery 24.5 to 26 ft bgs. (5/7)

IMG_5741: Recovery 24.5 to 26 ft bgs. (6/7)

IMG_5742: Recovery 24.5 to 26 ft bgs. (7/7)

IMG_5743: Recovery 26 to 28.5 ft bgs. Pass No. 1. (1/15)

IMG_5744: Recovery 26 to 28.5 ft bgs. Pass No. 1. (2/15)

IMG_5745: Recovery 26 to 28.5 ft bgs. Pass No. 1. (3/15)

IMG_5746: Recovery 26 to 28.5 ft bgs. Pass No. 1. (4/15)

IMG_5747: Recovery 26 to 28.5 ft bgs. Pass No. 1. (5/15)

IMG_5748: Recovery 26 to 28.5 ft bgs. Pass No. 1. (6/15)

IMG_5749: Recovery 26 to 28.5 ft bgs. Pass No. 1. (7/15)

IMG_5750: Recovery 26 to 28.5 ft bgs. Pass No. 1. (8/15)

IMG_5751: Recovery 26 to 28.5 ft bgs. Pass No. 1. (9/15)

IMG_5752: Recovery 26 to 28.5 ft bgs. Pass No. 2. (10/15)

IMG_5754: Recovery 26 to 28.5 ft bgs. Pass No. 2. (11/15)

IMG_5762: Recovery 26 to 28.5 ft bgs. Pass No. 2. (12/15)

IMG_5763: Recovery 26 to 28.5 ft bgs. Pass No. 2. (13/15)

IMG_5764: Recovery 26 to 28.5 ft bgs. Pass No. 2. (14/15)

IMG_5765: Recovery 26 to 28.5 ft bgs. Pass No. 2. (15/15)

IMG_5766: Recovery 28.5 to 29.5 ft bgs. (1/7)

IMG_5767: Recovery 28.5 to 29.5 ft bgs. (2/7)

IMG_5768: Recovery 28.5 to 29.5 ft bgs. (3/7)

IMG_5769: Recovery 28.5 to 29.5 ft bgs. (4/7)

IMG_5770: Recovery 28.5 to 29.5 ft bgs. (5/7)

IMG_5771: Recovery 28.5 to 29.5 ft bgs. (6/7)

IMG_5772: Recovery 28.5 to 29.5 ft bgs. (7/7)

IMG_5773: Recovery 29.5 to 30 ft bgs. (1/6)

IMG_5774: Recovery 29.5 to 30 ft bgs. (2/6)

IMG_5775: Recovery 29.5 to 30 ft bgs. (3/6)

IMG_5776: Recovery 29.5 to 30 ft bgs. (4/6)

IMG_5777: Recovery 29.5 to 30 ft bgs. (5/6)

IMG_5778: Recovery 29.5 to 30 ft bgs. (6/6)

IMG_5779: Recovery 30 to 31.5 ft bgs. (1/7)

IMG_5780: Recovery 30 to 31.5 ft bgs. (2/7)

IMG_5781: Recovery 30 to 31.5 ft bgs. (3/7)

IMG_5782: Recovery 30 to 31.5 ft bgs. (4/7)

IMG_5783: Recovery 30 to 31.5 ft bgs. (5/7)

IMG_5784: Recovery 30 to 31.5 ft bgs. (6/7)

IMG_5785: Recovery 30 to 31.5 ft bgs. (7/7)

IMG_5786: Recovery 31.5 to 32.5 ft bgs. (1/7)

IMG_5787: Recovery 31.5 to 32.5 ft bgs. (2/7)

IMG_5788: Recovery 31.5 to 32.5 ft bgs. (3/7)

IMG_5789: Recovery 31.5 to 32.5 ft bgs. (4/7)

IMG_5790: Recovery 31.5 to 32.5 ft bgs. (5/7)

IMG_5791: Recovery 31.5 to 32.5 ft bgs. (6/7)

IMG_5792: Recovery 31.5 to 32.5 ft bgs. (7/7)

IMG_5793: Recovery 32.5 to 33.5 ft bgs. (1/7)

IMG_5794: Recovery 32.5 to 33.5 ft bgs. (2/7)

IMG_5795: Recovery 32.5 to 33.5 ft bgs. (3/7)

IMG_5796: Recovery 32.5 to 33.5 ft bgs. (4/7)

IMG_5797: Recovery 32.5 to 33.5 ft bgs. (5/7)

IMG_5798: Recovery 32.5 to 33.5 ft bgs. (6/7)

IMG_5799: Recovery 32.5 to 33.5 ft bgs. (7/7)

IMG_5800: Recovery 33.5 to 35 ft bgs. Bottom of boring. (1/4)

IMG_5801: Recovery 33.5 to 35 ft bgs. Bottom of boring. (2/4)

IMG_5802: Recovery 33.5 to 35 ft bgs. Bottom of boring. (3/4)

IMG_5803: Recovery 33.5 to 35 ft bgs. Bottom of boring. (4/4)

BA-5 BORING LOG AND PHOTOGRAPHIC LOG

SCS ENGINEERS — BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: BA-5

Pasco Sanitary Landfill
1901 Dietrich Road
Pasco, Washington

JOB NUMBER: 04209046.06

REMARKS:
All depths as reported by drilling equipment unless otherwise noted.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	TVS Result (%)	Temp. (deg F)	USCS Soil Class.	Graphic Log	Description	Completion Detail
0	0							11:38. Begin drilling at surface with open flight auger tooling. Brown silty sand overlying layer of black woven Geotextile and gray sandy gravel. Dry. (Driller set fall protection casing at surface.) Photos: IMG_5921, IMG_5922, IMG_5923	0
	1					SM			
	2					GEOT			
	3					GP			Site soil backfill to surface. No well casing installed.
1									
	4								
	5					GP		11:57. 5-ft bgs. Gray sandy gravel with some cobble and boulder. Dry to moist. Photo: IMG_5924 through IMG_5927	5
	6					GEOM		12:03. 6-ft bgs. Same as above with some Geomembrane fragments in cuttings. Dry. Multiple cleanup passes required to remove loose material. Photos: IMG_5928, IMG_5929	
2									
	7					GP			Hydrated Bentonite Chip Seal (22 Bags)
	8					SM		12:07. 8-ft bgs. Brown silty gravely sand with minor (<5% by volume) cobble. Moist. Photo: IMG_5931	
	9					GEOT		12:09. 9-ft bgs. Same as above some fragments of Brown woven Geotextile. Moist. Photo: IMG_5932	Site soil backfill.
3	10								

Drilling Company:	**DBM Contractors, Inc.**	Date Started:	**2/15/17**	Time Started:	**11:40**
Drilling Method:	**IMT AF180**	Date Ended:	**2/15/17**	Time Ended:	**14:25**
Logged By:	**Sam Adlington**	Boring Diameter:	**24-inch**	Total Depth:	**34.0 ft.**
Sampling Method:	**24-inch Core Barrel and Auger**				

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: BA-5

Pasco Sanitary Landfill

JOB NUMBER: 04209046.06

Depth (feet)	Sample Location	Sample Number	TVS Result (%)	Temp. (deg F)	USCS Soil Class.	Description	Completion Detail
10					SM		Site soil backfill.
11				78.5		12:11. 11-ft bgs. Brown silty gravely sand transitioning to brown very fine grained sand with minimal (<1%) gravel or cobble. Moist. Photo: IMG_5933	
12				88	SM	12:13. 12-ft bgs. Same as above. Dense and moist. Steamy. Photo: IMG_5934	
14				86	SM	12:15. 14-ft bgs. Same as above. Photo: IMG_5935	
15				99	SM	12:17. 15-ft bgs. Brown very fine grained sand overlying ~20% black decomposed wood debris and ~20% black decomposed refuse. Moist and steamy. (Driller switched to 5-ft long core barrel tooling.) Photos: IMG_5936, IMG_5937, IMG_5938	Hydrated Bentonite Chip Seal (20 Bags)
16.5–17	(hand)	BA-5 17'	9.63				
17				96		12:36. 17-ft bgs. Brown silty sand and ~10% brown-black decomposed wood debris and ~10% brown-black refuse, including opaque plastics and textiles. Moist and steamy. Photos: IMG_5939, IMG_5940	
18				118	**GEOM** SM-REF	12:47. 18-ft bgs. Approximately 50% black decomposed refuse, including opaque plastics, and ~50% brown silty sand mixture. A piece of Geomembrane ~18-inches in diameter was recovered in the cuttings. Moist and steamy. Photos: IMG_5941 through IMG_5944	
20				99	SM-REF	12:59. 20-ft bgs. Brown-black silty sand with ~30% black decomposed wood debris. Moist and steamy. Photo: IMG_5946, IMG_5947	3/4-inch Crushed rock without fines.
21.5				88		13:08. 21.5-ft bgs. Approximately 50% brown-black wood debris with ~30% brown silty sand and ~20% gray decomposed refuse, including opaque plastics. Moist. Photo: IMG_5948	
22							

Depth scale: meters 4, 5, 6; feet 10–22. Completion detail scale: 10, 15, 20.

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: BA-5

Pasco Sanitary Landfill

JOB NUMBER: 04209046.06

Depth (meters)	Depth (feet)	Sample Location	Sample Number	TVS Result (%)	Temp. (deg F)	USCS Soil Class.	Description	Completion Detail
	22					SM-REF		
7	23	✋	BA-5 23.5'	4.88				
	24				97	SM	13:18. 23.5-ft bgs. Dark gray sandy silty with ~10% gray wood debris and some brown sandy silt. Moist. Photo: IMG_5949	
	25				88.5		13:25. 25-ft bgs. Gray sandy silty with minor (<5%) decomposed wood and metal debris. Moist and steamy. Photos: IMG_5950, IMG_5951	25
8	26							
	27				115	SM-REF	13:37. 27-ft bgs. Gray sandy silt with ~20% brown decomposed refuse, including opaque plastics, ~20% brown decomposed wood debris, minor (<5%) metal wire, and minimal (<1%) paper scraps. Steamy. Photos: IMG_5952, IMG_5953	
	28							3/4-inch Crushed rock without fines.
	29				114	SM-REF	13:47. 28.5-ft bgs. Gray-brown silty sand with ~20% brown decomposed wood debris overlying gray sandy silt. Dry. Photos: IMG_5954, IMG_5955	
9	30	✋	BA-5 30'	1.56				30
	31				112	SM	13:56. 30.5-ft bgs. Brown silty sand with minor (<5%) cobble overlying layer of gray-brown sandy silty. Dry to moist and steamy. Photos: IMG_5956, IMG_5957	
10	32					ML	14:05. 32-ft bgs. Gray-brown sandy silt with brown silty sand slough. Moist and steamy. (Driller switched to open flight auger tooling.) Photo: IMG_5958	
	33					ML	14:13. 34-ft bgs. Brown sandy silt. Dry to moist and steamy. Photo: IMG_5959	
	34				110		Bottom of boring 34-ft bgs.	Bottom of boring 34-ft bgs.

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: BA-5

Pasco Sanitary Landfill

JOB NUMBER: 04209046.06

Depth (meters)	Depth (feet)	Sample Location	Sample Number	TVS Result (%)	Temp. (deg F)	USCS Soil Class.	Graphic Log	Description	Completion Detail
	34							Boring terminated due to reaching Touchet Bed soils.	
	35								35
11	36								
	37								
	38								
	39								
12	40								40
	41								
	42								
13	43								
	44								
	45								45
14	46								

Definitions and General Notes

Moisture Conditions:
Dry: Absence of moisture, dusty, dry to the touch.
Moist: Damp, but no visible water or other liquids.
Wet: visible free water.

Particle Size Ranges:
Boulder: Greater than 12-inches in largest dimension.
Cobble: Between 3 and 12 inches in largest dimension.
Gravel: Greater than No. 4 Sieve (3/16-inch) and less than 3-inches in largest dimension.

Content Descriptions:
Minor: Less than 5% by volume.
Minimal: Less than 1% by volume.
Some: Scattered or interspersed with cuttings, likely slough.

Abbreviations:
GEOT: Geotextile
GEON: Geonet / Geofabric
GEOG: Geogrid
GEOM: Geomembrane
VQ: Visqueen
REF: Refuse

IMG_5921: Begin drilling and setting fall protection casing at surface. (1/2)

IMG_5922: Begin drilling and setting fall protection casing at surface. (2/2)

IMG_5923: Recovery 0 to 4 feet (ft) below ground surface (bgs.).

IMG_5924: Recovery 4 to 5 ft bgs. Pass No. 1. (1/4)

IMG_5925: Recovery 4 to 5 ft bgs. Pass No. 1. Spread for inspection by Driller's assistant. (2/4)

IMG_5926: Recovery 4 to 5 ft bgs. Pass No. 2. (3/4)

IMG_5927: Recovery 4 to 5 ft bgs. Pass No. 3 (4/4)

IMG_5928: Recovery 5 to 6 ft bgs. Pass No. 1. (1/2)

IMG_5929: Recovery 5 to 6 ft bgs. Pass No. 2. (2/2)

IMG_5930: Recovery 6 to 7 ft bgs.

IMG_5931: Recovery 7 to 8 ft bgs.

IMG_5932: Recovery 8 to 9 ft bgs.

IMG_5933: Recovery 9 to 11 ft bgs.

IMG_5934: Recovery 11 to 12 ft bgs.

IMG_5935: Recovery 12 to 14 ft bgs.

IMG_5936: Recovery 14 to 15 ft bgs. (1/3)

IMG_5937: Recovery 14 to 15 ft bgs. (2/3)

IMG_5938: Recovery 14 to 15 ft bgs. Spread by Driller's assistant for inspection. (3/3)

IMG_5939: Recovery 15 to 17 ft bgs. (1/2)

IMG_5940: Recovery 15 to 17 ft bgs. Driller using rooter to dislodge compacted recovered materials from core barrel. (2/2)

IMG_5941: Recovery 17 to 18 ft bgs. (1/4)

IMG_5942: Recovery 17 to 18 ft bgs. Piece of Geomembrane recovered. (2/4)

IMG_5943: Recovery 17 to 18 ft bgs. Piece of Geomembrane recovered. (3/4)

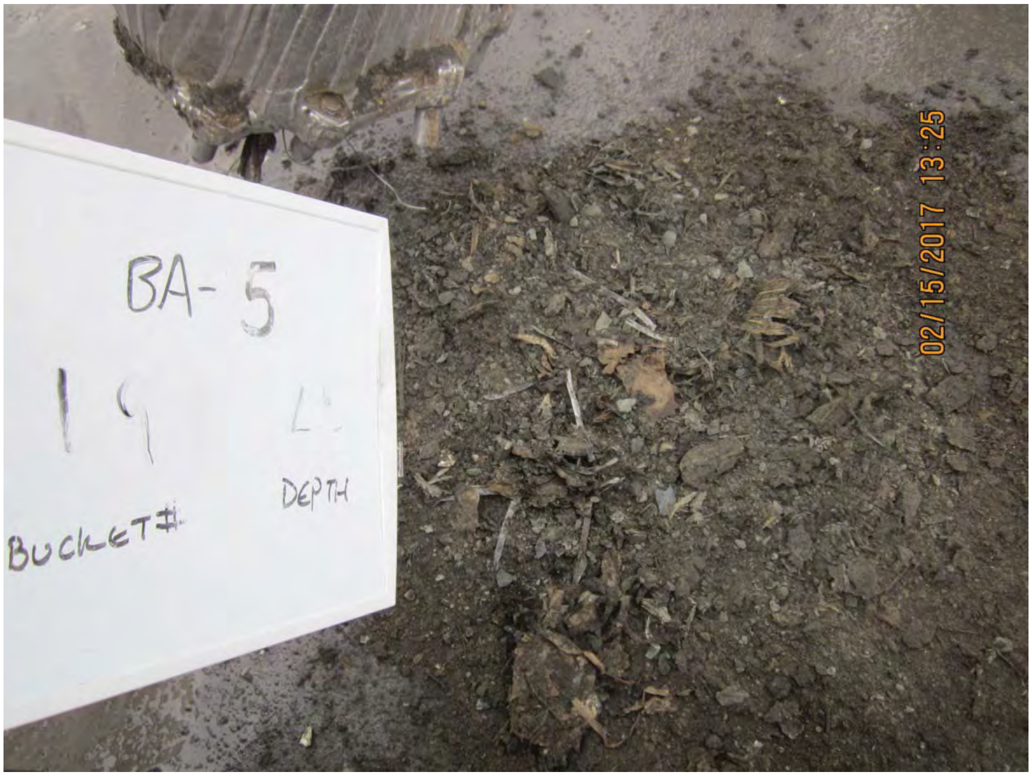
IMG_5944: Recovery 17 to 18 ft bgs. Piece of Geomembrane recovered. (4/4)

IMG_5946: Recovery 18 to 20 ft bgs. (1/2)

IMG_5947: Recovery 18 to 20 ft bgs. (2/2)

IMG_5948: recovery 20 to 21.5 ft bgs.

IMG_5949: Recovery 21.5 to 23.5 ft bgs.



IMG_5950: Recovery 23.5 to 25 ft bgs. (1/2)

IMG_5951: Recovery 23.5 to 25 ft bgs. (2/2)

IMG_5952: Recovery 25 to 27 ft bgs. (1/2)

IMG_5953: Recovery 25 to 27 ft bgs. (2/2)

IMG_5954: Recovery 27 to 28.5 ft bgs. (1/2)

IMG_5955: Recovery 27 to 28.5 ft bgs. (2/2)

IMG_5956: Recovery 28.5 to 30.5 ft bgs. (1/2)

IMG_5957: Recovery 28.5 to 30.5 ft bgs. (2/2)

IMG_5958: Recovery 30.5 to 32 ft bgs.

IMG_5959: Recovery 32 to 34 ft bgs. Bottom of boring.

BA-6 BORING LOG AND PHOTOGRAPHIC LOG

SCS ENGINEERS | # BORING LOG

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: BA-6

Pasco Sanitary Landfill
1901 Dietrich Road
Pasco, Washington

JOB NUMBER: 04209046.06

REMARKS:
All depths as reported by drilling equipment unless otherwise noted.

Depth (meters)	Depth (feet)	Sample Location	Sample Number	TVS Result (%)	Temp. (deg F)	USCS Soil Class.	Description	Completion Detail
0	0					SM	07:35. Begin drilling at surface with open flight auger tooling. Brown silty sand with minimal (<1% by volume) gravel. Moist. (Driller set fall protection casing at surface.) Photos: IMG_5963, IMG_5964	0
	1							
	2							Site soil backfill to surface. No well casing installed.
1	3						07:38. 3-ft bgs. Brown silty sand with minimal (<1%) gravel. Moist. Photo: IMG_5964	
	4					GEOT	07:40. 4-ft bgs. Layer of black woven Geotextile overlying gray sandy gravel. Moist. Photos: IMG_5965, IMG_5966	
						GP	07:42. 5-ft bgs. Gray sandy gravel with some brown silty sand and small fragments of black Geotextile in cuttings. Moist. Photo: IMG_5967	
	5							5
						GEOT		
	6					SM	07:43. 6-ft bgs. Brown-gray silty sandy gravel with some small pieces of Geotextile. Moist. Photo: IMG_5968	
2								Hydrated Bentonite Chip Seal (21 Bags)
	7							
	8						07:44. 8-ft bgs. Brown-gray silty sandy gravel with some small pieces of black Geotextile. Moist. Photo: IMG_5969	
	9						07:45. 9-ft bgs. Same as above with a piece of black woven Geotextile approximately 18-inches in diameter. Moist. Photo: IMG_5970, IMG_5971	Site soil backfill.
3	10							

Drilling Company:	**DBM Contractors, Inc.**	Date Started:	**2/16/17**
Drilling Method:	**IMT AF180**	Date Ended:	**2/16/17**
Logged By:	**Sam Adlington**	Boring Diameter:	**24-inch**
Sampling Method:	**24-inch Core Barrel and Auger**		
		Time Started:	**07:30**
		Time Ended:	**09:45**
		Total Depth:	**36.0 ft.**

Pasco Sanitary Landfill | **JOB NUMBER: 04209046.06**

Depth (meters)	Depth (feet)	Sample Location	Sample Number	TVS Result (%)	Temp. (deg F)	USCS Soil Class.	Description	Completion Detail
	10					SM	07:48. 10-ft bgs. Brown-gray silty sandy gravel. Moist. Photo: IMG_5972	10
	11						07:49. 11-ft bgs. Same as above. Moist. Photo: IMG_5973	Site soil backfill.
	12				88.0	SM	07:51. 12-ft bgs. Same as above. Gravel and cobble content increasing with depth. Moist. Photo: IMG_5974	
4	13							
	14					GP		
	15				94.0	**GEON GEOT**	07:54. 15-ft bgs. Lens of gray sandy gravel overlying brown silty sand. Some fragments of Geotextile and Geonet / Geofabric present in cuttings. Dense. Moist and steamy. Photo: IMG_5976	15
	16					SM	07:55. 16-ft bgs. Same as above. Photo: IMG_5977	
5								
	17						07:57. 17-ft bgs. Same as above. Photo: IMG_5978	
	18				105	**VQ**	08:00. 18-ft bgs. Brown silty sand with fragments of white Visqueen in cuttings. Moist and steamy. Photo: IMG_5979	Hydrated Bentonite Chip Seal (22 Bags)
	19						08:01. 19-ft bgs. Same as above. Photo: IMG_5980	
6								
	20				93		08:03. 20-ft bgs. Brown silty sand with some fragments of Visqueen in cuttings. Moist and steamy. Photo: IMG_5981	20 — 3/4-inch Crushed rock without fines.
	21					SM		
	22							

2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005-1877

BORING NUMBER: BA-6

Pasco Sanitary Landfill | **JOB NUMBER: 04209046.06**

Depth (meters)	Depth (feet)	Sample Location	Sample Number	TVS Result (%)	Temp. (deg F)	USCS Soil Class.	Description	Completion Detail
	22				91	SM	08:05. 22-ft bgs. Brown silty sand with minor (<5%) gravel and cobble, and minor (<5%) brown-tan decomposed wood debris on bottom two (2) flights of auger. Moist and steamy. Photos: IMG_5982, IMG_5983, IMG_5984	
7	23				101		08:05. 23-ft bgs. Brown silty sand with ~20% brown decomposed wood debris and ~10% metal scraps. Moist and steamy. Photos: IMG_5985, IMG_5986, IMG_5987	
	24							
	25							25
8	26				115	SM	08:29. 26-ft bgs. Dark brown silty sand with ~10% brown decomposed refuse, including opaque plastics, and minor (<5%) cobble. Moist and steamy. Photos: IMG_5988, IMG_5989	
	27							
	28	hand	BA-6 28.5'	13.3	105	REF-SM	08:35. 28.5-ft bgs. Black-brown decomposed wood debris with ~50% brown silty sand. Moist. Photos: IMG_5990, IMG_5991	3/4-inch Crushed rock without fines.
9	29							
	30				113.5	ML	08:43. 30.5-ft bgs. Black-brown silty sand with minor (<5%) black-brown decomposed wood debris, and minor (<5%) refuse, including opaque plastics, and some cobble overlying gray dense sandy silt. Dry to moist and steamy. Photos: IMG_5993, IMG_5994	30
	31	hand	BA-6 32'	14.4				
	32				115.5	SM	08:55. 32-ft bgs. Dark brown silty sand with minor (<5%) brown decomposed refuse, including opaque plastics, overlying gray dense sandy silty. Moist. Photos: IMG_5995, IMG_5996, IMG_5997	
10	33							
	34							

2405 140th Avenue NE, Suite 107
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BORING NUMBER: BA-6

Pasco Sanitary Landfill

JOB NUMBER: 04209046.06

Depth (meters)	Depth (feet)	Sample Location	Sample Number	TVS Result (%)	Temp. (deg F)	USCS Soil Class.	Graphic Log	Description	Completion Detail
	34				121.5	ML		09:03. 34-ft bgs. Gray dense sandy silt with some brown silty sand. Dry to moist and steamy.	
	35								3/4-inch Crushed rock without fines.
11	36				105.5			09:10. 36-ft bgs. Gray sandy silt with three (3) large pieces of plastic (likely slough) and some pieces of concrete recovered in cuttings. Dry to moist. Photos: IMG_5998 through IMG_6001 Bottom of boring 36-ft bgs. Boring terminated due to reaching Touchet Bed soils.	Bottom of boring 36-ft bgs.
	37								
	38								
	39								
12									
	40								
	41								
	42								
13	43								
	44								
	45								
14	46								

Definitions and General Notes

Moisture Conditions:
Dry: Absence of moisture, dusty, dry to the touch.
Moist: Damp, but no visible water or other liquids.
Wet: visible free water.

Particle Size Ranges:
Boulder: Greater than 12-inches in largest dimension.
Cobble: Between 3 and 12 inches in largest dimension.
Gravel: Greater than No. 4 Sieve (3/16-inch) and less than 3-inches in largest dimension.

Content Descriptions:
Minor: Less than 5% by volume.
Minimal: Less than 1% by volume.
Some: Scattered or interspersed with cuttings, likely slough.

Abbreviations:
GEOT: Geotextile
GEON: Geonet / Geonet
GEOG: Geogrid
GEOM: Geomembrane
VQ: Visqueen
REF: Refuse

IMG_5963: Driller setting fall protection casing at surface.

IMG_5964: Recovery 0 to 3 feet (ft) below ground surface (bgs.).

IMG_5965: Recovery 3 to 4 ft bgs. Piece of Geonet recovered on bottom flight of auger. (1/2)

IMG_5966: Recovery 3 to 4 ft bgs. Piece of Geonet recovered on bottom flight of auger. (2/2)

IMG_5967: Recovery 4 to 5 ft bgs. Piece of Geotextile recovered on bottom flight of auger.

IMG_5968: Recovery 5 to 6 ft bgs.

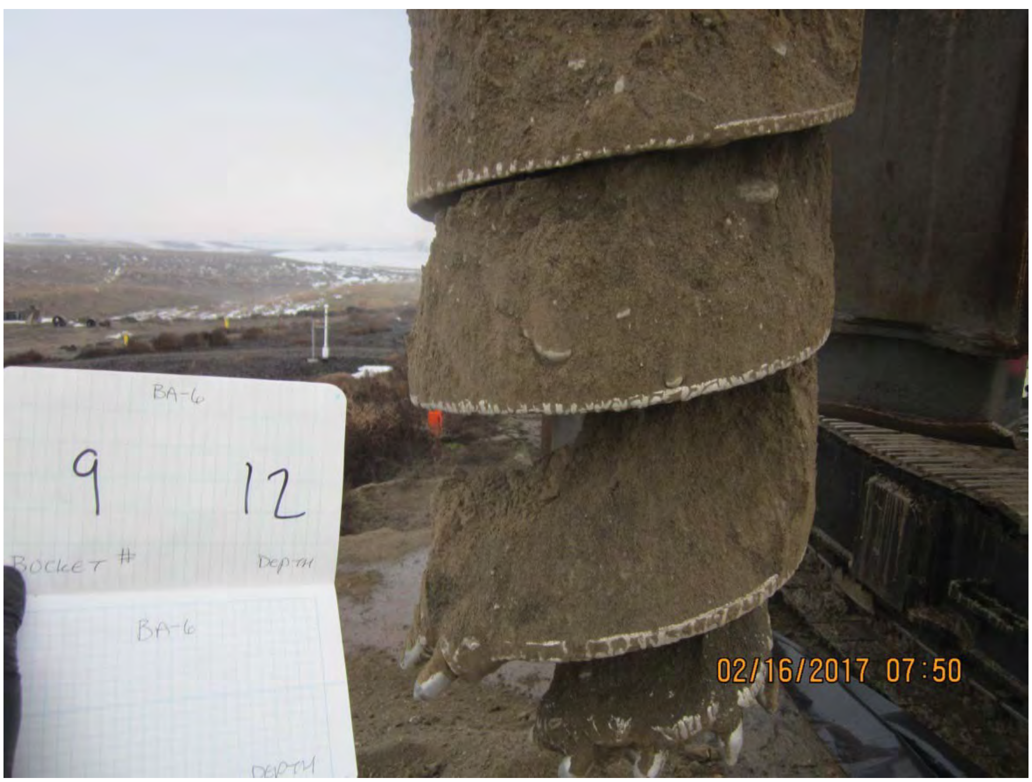
IMG_5969: Recovery 6 to 8 ft bgs.

IMG_5970: Recovery 8 to 9 ft bgs. Piece of Geomembrane recovered on bottom flight of auger. (1/2)

IMG_5971: Recovery 8 to 9 ft bgs. Piece of Geomembrane recovered on bottom flight of auger. (2/2)

IMG_5972: Recovery 9 to 10 ft bgs.

IMG_5973: Recovery 10 to 11 ft bgs.



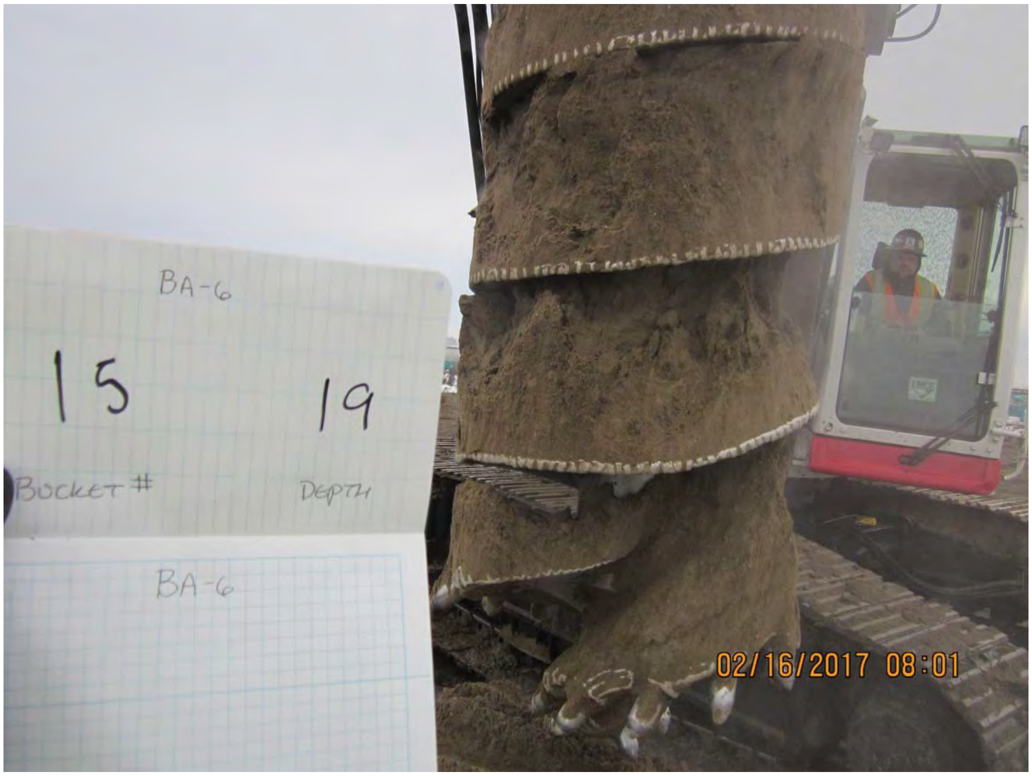
IMG_5974: Recovery 11 to 12 ft bgs.

IMG_5976: Recovery 12 to 15 ft bgs. Pieces of Geonet and Geotextile recovered.

IMG_5977: Recovery 15 to 16 ft bgs.

IMG_5978: Recovery 16 to 17 ft bgs. Piece of Geonet recovered.

IMG_5979: Recovery 17 to 18 ft bgs.



IMG_5980: Recovery 18 to 19 ft bgs.

IMG_5981: Recovery 19 to 20 ft bgs. Pieces of Visqueen (white) recovered on auger.

IMG_5982: Recovery 20 to 22 ft bgs. (1/3)

IMG_5983: Recovery 20 to 22 ft bgs. Spread for inspection by Driller's assistant. (2/3)

IMG_5984: Recovery 20 to 22 ft bgs. Spread for inspection by Driller's assistant. (3/3)

IMG_5985: Recovery 22 to 23 ft bgs. (1/3)

IMG_5986: Recovery 22 to 23 ft bgs. Spread for inspection by Driller's assistant. (2/3)

IMG_5987: Recovery 22 to 23 ft bgs. (3/3)

IMG_5988: Recovery 23 to 26 ft bgs. (1/2)

IMG_5989: Recovery 23 to 26 ft bgs. (2/2)

IMG_5990: Recovery 26 to 28.5 ft bgs. Wood debris recovered. (1/3)

IMG_5991: Recovery 26 to 28.5 ft bgs. Wood debris recovered. (2/3)

IMG_5993: Recovery 28.5 to 30.5 ft bgs. (1/2)

IMG_5994: Recovery 28.5 to 30.5 ft bgs. (2/2)

IMG_5995: Recovery 30.5 to 32 ft bgs. (1/3)

IMG_5996: Recovery 30.5 to 32 ft bgs. (2/3)

IMG_5997: Recovery 30.5 to 32 ft bgs. Spread for inspection by Driller's assistant. (3/3)

IMG_5998: Recovery 34 to 36 ft bgs. Bottom of boring. (1/4)

IMG_5999: Recovery 34 to 36 ft bgs. Bottom of boring. (2/4)

IMG_6000: Recovery 34 to 36 ft bgs. Bottom of boring. (3/4)

IMG_6001: Recovery 34 to 36 ft bgs. Bottom of boring. (4/4)

TVS CONTENT IN BORINGS

Pasco Sanitary Landfill
Boring Log Summary

Boring Number	**BA-1**
Boring Diameter	24 inches
Boring Diameter	2 feet
Boring Area	3.14 sf

Upper Depth of Zone (ft-bgs) [(1)]	Lower Depth of Zone (ft-bgs) [(1)]	Length of Zone (ft)	Volume of Zone (ft^3)	Refuse and Wood Debris Content (%) [(2)]	Volume of Mixed Debris in Zone (ft^3) [(3)]	Sample Number	TVS Result (%)	Volume of TVS from Refuse (ft^3) [(4)]
0.0	2.0	2.0	6.3	0.0%	0.0			0.0
2.0	5.0	3.0	9.4	0.0%	0.0			0.0
5.0	6.0	1.0	3.1	0.0%	0.0			0.0
6.0	7.0	1.0	3.1	0.0%	0.0			0.0
7.0	8.5	1.5	4.7	0.0%	0.0			0.0
8.5	9.5	1.0	3.1	0.0%	0.0			0.0
9.5	10.5	1.0	3.1	0.0%	0.0			0.0
10.5	11.0	0.5	1.6	0.0%	0.0			0.0
11.0	12.0	1.0	3.1	0.0%	0.0			0.0
12.0	13.0	1.0	3.1	0.0%	0.0			0.0
13.0	14.0	1.0	3.1	0.0%	0.0			0.0
14.0	15.0	1.0	3.1	0.0%	0.0			0.0
15.0	16.0	1.0	3.1	0.0%	0.0			0.0
16.0	17.0	1.0	3.1	0.0%	0.0			0.0
17.0	18.0	1.0	3.1	0.0%	0.0			0.0
18.0	19.0	1.0	3.1	0.0%	0.0			0.0
19.0	20.0	1.0	3.1	10.0%	0.3	BA-1 20'	21.1%	0.1
20.0	21.0	1.0	3.1	30.0%	0.9	BA-1 20'	21.1%	0.2
21.0	22.0	1.0	3.1	30.0%	0.9	BA-1 20'	21.1%	0.2
22.0	23.0	1.0	3.1	35.0%	1.1	BA-1 22'	6.90%	0.1
23.0	24.0	1.0	3.1	20.0%	0.6	BA-1 22'	6.90%	0.0
24.0	25.0	1.0	3.1	20.0%	0.6	BA-1 22'	6.90%	0.0
25.0	26.0	1.0	3.1	40.0%	1.3	BA-1 22'	6.90%	0.1
26.0	27.0	1.0	3.1	51.0%	1.6	BA-1 22'	6.90%	0.1
27.0	28.0	1.0	3.1	55.0%	1.7	BA-1 22'	6.90%	0.1
28.0	29.0	1.0	3.1	30.0%	0.9	BA-1 22'	6.90%	0.1
29.0	29.0	0.0	0.0	5.0%	0.0	BA-1 22'	6.90%	0.0
29.0	31.0	2.0	6.3	1.0%	0.1	BA-1 30'	5.22%	0.0
31.0	32.0	1.0	3.1	5.0%	0.2	BA-1 30'	5.22%	0.0
32.0	33.0	1.0	3.1	10.0%	0.3	BA-1 30'	5.22%	0.0
33.0	35.0	2.0	6.3	10.0%	0.6	BA-1 30'	5.22%	0.0
35.0	36.5	1.5	4.7	5.0%	0.2	BA-1 30'	5.22%	0.0
36.5	37.0	0.5	1.6	1.0%	0.0			0.0
37.0	38.0	1.0	3.1	5.0%	0.2			0.0
38.0				0.0%				
TOTALS		**38.0**	**119.4**		**11.7**			**1.1**

Volume of Boring as Mixed Debris	9.8	%
Volume of Mixed Debris as Total Volatile Solids (TVS)	9.3	%
Volume of Boring as TVS	0.9	%

Notes:

1. Depth as repoted by Driller unless noted otherwise.
2. Values presented as approximations or ranges on boring log (~, <, >) are listed at the maximum of the range or approximation.
3. Calculated by multiplying the volume of the zone by the percentage of mixed debris within the zone.
4. Calculated by multiplying the volume of mixed debris for the zone by the cooresponding TVS sample result.

Pasco Sanitary Landfill
Boring Log Summary

Boring Number	BA-2
Boring Diameter	24 inches
Boring Diameter	2 feet
Boring Area	3.14 sf

Upper Depth of Zone (ft-bgs) (1)	Lower Depth of Zone (ft-bgs) (1)	Length of Zone (ft)	Volume of Zone (ft^3)	Refuse and Wood Debris Content (%) (2)	Volume of Mixed Debris in Zone (ft^3) (3)	Sample Number	TVS Result (%)	Volume of TVS from Refuse (ft^3) (4)
0.0	1.0	1.0	3.1	0.0%	0.0			0.0
1.0	2.0	1.0	3.1	0.0%	0.0			0.0
2.0	2.5	0.5	1.6	0.0%	0.0			0.0
2.5	3.0	0.5	1.6	0.0%	0.0			0.0
3.0	5.0	2.0	6.3	0.0%	0.0			0.0
5.0	7.0	2.0	6.3	0.0%	0.0			0.0
7.0	7.5	0.5	1.6	0.0%	0.0			0.0
7.5	8.5	1.0	3.1	0.0%	0.0			0.0
8.5	10.5	2.0	6.3	0.0%	0.0			0.0
10.5	12.0	1.5	4.7	0.0%	0.0			0.0
12.0	13.5	1.5	4.7	0.0%	0.0			0.0
13.5	14.5	1.0	3.1	0.0%	0.0			0.0
14.5	16.0	1.5	4.7	0.0%	0.0			0.0
16.0	17.0	1.0	3.1	0.0%	0.0			0.0
17.0	17.5	0.5	1.6	0.0%	0.0			0.0
17.5	20.5	3.0	9.4	0.0%	0.0			0.0
20.5	22.0	1.5	4.7	0.0%	0.0			0.0
22.0	23.0	1.0	3.1	0.0%	0.0			0.0
23.0	24.5	1.5	4.7	0.0%	0.0			0.0
24.5	26.0	1.5	4.7	0.0%	0.0			0.0
26.0	26.5	0.5	1.6	25.0%	0.4	BA-2 26.3'	8.07%	0.0
26.5	27.5	1.0	3.1	5.0%	0.2	BA-2 26.3'	8.07%	0.0
27.5	28.0	0.5	1.6	5.0%	0.1	BA-2 28'	22.7%	0.0
28.0	30.0	2.0	6.3	5.0%	0.3	BA-2 28'	22.7%	0.1
30.0	31.0	1.0	3.1	5.0%	0.2	BA-2 30'	28.5%	0.0
31.0	33.0	2.0	6.3	5.0%	0.3	BA-2 30'	28.5%	0.1
33.0	34.0	1.0	3.1	1.0%	0.0	BA-2 30'	28.5%	0.0
34.0	35.0	1.0	3.1	0.0%	0.0			0.0
35.0								
TOTALS		**35.0**	**110.0**		**1.4**			**0.3**

Volume of Boring as Mixed Debris	1.3	%
Volume of Mixed Debris as Total Volatile Solids (TVS)	19.2	%
Volume of Boring as TVS	0.3	%

Notes:

1. Depth as repoted by Driller unless noted otherwise.
2. Values presented as approximations or ranges on boring log (~, <, >) are listed at the maximum of the range or approximation.
3. Calculated by multiplying the volume of the zone by the percentage of mixed debris within the zone.
4. Calculated by multiplying the volume of mixed debris for the zone by the cooresponding TVS sample result.

Pasco Sanitary Landfill
Boring Log Summary

Boring Number	**BA-3**
Boring Diameter	24 inches
Boring Diameter	2 feet
Boring Area	3.14 sf

Upper Depth of Zone (ft-bgs) (1)	Lower Depth of Zone (ft-bgs) (1)	Length of Zone (ft)	Volume of Zone (ft^3)	Refuse and Wood Debris Content (%) (2)	Volume of Mixed Debris in Zone (ft^3) (3)	Sample Number	TVS Result (%)	Volume of TVS from Refuse (ft^3) (4)
0.0	2.5	2.5	7.9	0.0%	0.0			0.0
2.5	5.5	3.0	9.4	0.0%	0.0			0.0
5.5	7.0	1.5	4.7	0.0%	0.0			0.0
7.0	8.0	1.0	3.1	0.0%	0.0			0.0
8.0	12.0	4.0	12.6	0.0%	0.0			0.0
12.0	15.0	3.0	9.4	0.0%	0.0			0.0
15.0	16.0	1.0	3.1	0.0%	0.0			0.0
16.0	18.0	2.0	6.3	0.0%	0.0			0.0
18.0	19.5	1.5	4.7	0.0%	0.0			0.0
19.5	21.0	1.5	4.7	0.0%	0.0			0.0
21.0	21.5	0.5	1.6	1.0%	0.0	BA-3 23'	8.08%	0.0
21.5	23.0	1.5	4.7	30.0%	1.4	BA-3 23'	8.08%	0.1
23.0	24.5	1.5	4.7	30.0%	1.4	BA-3 23'	8.08%	0.1
24.5	26.0	1.5	4.7	5.0%	0.2	BA-3 26'	20.2%	0.0
26.0	27.5	1.5	4.7	95.0%	4.5	BA-3 26'	20.2%	0.9
27.5	29.0	1.5	4.7	40.0%	1.9	BA-3 26'	20.2%	0.4
29.0	30.5	1.5	4.7	20.0%	0.9	BA-3 29'	8.17%	0.1
30.5	33.0	2.5	7.9	30.0%	2.4	BA-3 29'	8.17%	0.2
33.0	35.5	2.5	7.9	5.0%	0.4	BA-3 29'	8.17%	0.0
35.5	36.0	0.5	1.6	5.0%	0.1			0.0
36.0				0.0%				
TOTALS		**36.0**	**113.1**		**13.2**			**1.9**

Volume of Boring as Mixed Debris	11.7	%
Volume of Mixed Debris as Total Volatile Solids (TVS)	14.1	%
Volume of Boring as TVS	1.6	%

Notes:

1. Depth as repoted by Driller unless noted otherwise.
2. Values presented as approximations or ranges on boring log (~, <, >) are listed at the maximum of the range or approximation.
3. Calculated by multiplying the volume of the zone by the percentage of mixed debris within the zone.
4. Calculated by multiplying the volume of mixed debris for the zone by the cooresponding TVS sample result.

Pasco Sanitary Landfill
Boring Log Summary

Boring Number	**BA-4**
Boring Diameter	24 inches
Boring Diameter	2 feet
Boring Area	3.14 sf

Upper Depth of Zone (ft-bgs) (1)	Lower Depth of Zone (ft-bgs) (1)	Length of Zone (ft)	Volume of Zone (ft^3)	Refuse and Wood Debris Content (%) (2)	Volume of Mixed Debris in Zone (ft^3) (3)	Sample Number	TVS Result (%)	Volume of TVS from Refuse (ft^3) (4)
0.0	4.5	4.5	14.1	0.0%	0.0			0.0
4.5	5.0	0.5	1.6	0.0%	0.0			0.0
5.0	6.0	1.0	3.1	0.0%	0.0			0.0
6.0	7.0	1.0	3.1	0.0%	0.0			0.0
7.0	8.0	1.0	3.1	0.0%	0.0			0.0
8.0	9.0	1.0	3.1	0.0%	0.0			0.0
9.0	10.0	1.0	3.1	0.0%	0.0			0.0
10.0	11.0	1.0	3.1	0.0%	0.0			0.0
11.0	12.0	1.0	3.1	0.0%	0.0			0.0
12.0	13.0	1.0	3.1	0.0%	0.0			0.0
13.0	14.0	1.0	3.1	0.0%	0.0			0.0
14.0	15.5	1.5	4.7	0.0%	0.0			0.0
15.5	16.5	1.0	3.1	0.0%	0.0			0.0
16.5	17.5	1.0	3.1	0.0%	0.0			0.0
17.5	18.5	1.0	3.1	0.0%	0.0			0.0
18.5	19.5	1.0	3.1	0.0%	0.0			0.0
19.5	20.5	1.0	3.1	0.0%	0.0			0.0
20.5	21.5	1.0	3.1	0.0%	0.0			0.0
21.5	22.5	1.0	3.1	0.0%	0.0			0.0
22.5	23.5	1.0	3.1	0.0%	0.0			0.0
23.5	24.5	1.0	3.1	0.0%	0.0			0.0
24.5	26.0	1.5	4.7	2.0%	0.1	BA-4 35	3.00%	0.0
26.0	28.5	2.5	7.9	2.0%	0.2	BA-4 35	3.00%	0.0
28.5	29.5	1.0	3.1	2.0%	0.1	BA-4 36	16.6%	0.0
29.5	30.0	0.5	1.6	1.0%	0.0	BA-4 39	6.53%	0.0
30.0	31.5	1.5	4.7	1.0%	0.0	BA-4 39	6.53%	0.0
31.5	32.5	1.0	3.1	1.0%	0.0	BA-4 39	6.53%	0.0
32.5	33.5	1.0	3.1	1.0%	0.0	BA-4 39	6.53%	0.0
33.5	35.0	1.5	4.7	1.0%	0.0	BA-4 39	6.53%	0.0
35.0				0.0%				
TOTALS		**35.0**	**110.0**		**0.5**			**0.0**

Volume of Boring as Mixed Debris	0.4	%
Volume of Mixed Debris as Total Volatile Solids (TVS)	6.0	%
Volume of Boring as TVS	0.0	%

Notes:

1. Depth as repoted by Driller unless noted otherwise.
2. Values presented as approximations or ranges on boring log (~, <, >) are listed at the maximum of the range or approximation.
3. Calculated by multiplying the volume of the zone by the percentage of mixed debris within the zone.
4. Calculated by multiplying the volume of mixed debris for the zone by the cooresponding TVS sample result.

Pasco Sanitary Landfill
Boring Log Summary

Boring Number	**BA-5**
Boring Diameter	24 inches
Boring Diameter	2 feet
Boring Area	3.14 sf

Upper Depth of Zone (ft-bgs) (1)	Lower Depth of Zone (ft-bgs) (1)	Length of Zone (ft)	Volume of Zone (ft^3)	Refuse and Wood Debris Content (%) (2)	Volume of Mixed Debris in Zone (ft^3) (3)	Sample Number	TVS Result (%)	Volume of TVS from Refuse (ft^3) (4)
0.0	2.0	2.0	6.3	0.0%	0.0			0.0
2.0	5.0	3.0	9.4	0.0%	0.0			0.0
5.0	6.0	1.0	3.1	0.0%	0.0			0.0
6.0	8.0	2.0	6.3	0.0%	0.0			0.0
8.0	9.0	1.0	3.1	0.0%	0.0			0.0
9.0	11.0	2.0	6.3	0.0%	0.0			0.0
11.0	12.0	1.0	3.1	0.0%	0.0			0.0
12.0	14.0	2.0	6.3	0.0%	0.0			0.0
14.0	15.0	1.0	3.1	0.0%	0.0			0.0
15.0	17.0	2.0	6.3	40.0%	2.5	BA-5 17'	9.63%	0.2
17.0	18.0	1.0	3.1	20.0%	0.6	BA-5 17'	9.63%	0.1
18.0	20.0	2.0	6.3	50.0%	3.1	BA-5 17'	9.63%	0.3
20.0	21.5	1.5	4.7	30.0%	1.4	BA-5 17'	9.63%	0.1
21.5	23.5	2.0	6.3	50.0%	3.1	BA-5 23.5'	4.88%	0.2
23.5	25.0	1.5	4.7	10.0%	0.5	BA-5 23.5'	4.88%	0.0
25.0	27.0	2.0	6.3	5.0%	0.3	BA-5 23.5'	4.88%	0.0
27.0	28.5	1.5	4.7	46.0%	2.2	BA-5 30'	1.56%	0.0
28.5	30.5	2.0	6.3	20.0%	1.3	BA-5 30'	1.56%	0.0
30.5	32.0	1.5	4.7	0.0%	0.0			0.0
32.0	34.0	2.0	6.3	0.0%	0.0			0.0
34.0				0.0%				
TOTALS		**34.0**	**106.8**		**15.0**			**1.0**

Volume of Boring as Mixed Debris	14.1	%
Volume of Mixed Debris as Total Volatile Solids (TVS)	6.6	%
Volume of Boring as TVS	0.9	%

Notes:

1. Depth as repoted by Driller unless noted otherwise.
2. Values presented as approximations or ranges on boring log (~, <, >) are listed at the maximum of the range or approximation.
3. Calculated by multiplying the volume of the zone by the percentage of mixed debris within the zone.
4. Calculated by multiplying the volume of mixed debris for the zone by the cooresponding TVS sample result.

Pasco Sanitary Landfill
Boring Log Summary

Boring Number	**BA-6**
Boring Diameter	24 inches
Boring Diameter	2 feet
Boring Area	3.14 sf

Upper Depth of Zone (ft-bgs) (1)	Lower Depth of Zone (ft-bgs) (1)	Length of Zone (ft)	Volume of Zone (ft^3)	Refuse and Wood Debris Content (%) (2)	Volume of Mixed Debris in Zone (ft^3) (3)	Sample Number	TVS Result (%)	Volume of TVS from Refuse (ft^3) (4)
0.0	3.0	3.0	9.4	0.0%	0.0			0.0
3.0	4.0	1.0	3.1	0.0%	0.0			0.0
4.0	5.0	1.0	3.1	0.0%	0.0			0.0
5.0	6.0	1.0	3.1	0.0%	0.0			0.0
6.0	8.0	2.0	6.3	0.0%	0.0			0.0
8.0	9.0	1.0	3.1	0.0%	0.0			0.0
9.0	10.0	1.0	3.1	0.0%	0.0			0.0
10.0	11.0	1.0	3.1	0.0%	0.0			0.0
11.0	12.0	1.0	3.1	0.0%	0.0			0.0
12.0	15.0	3.0	9.4	0.0%	0.0			0.0
15.0	16.0	1.0	3.1	0.0%	0.0			0.0
16.0	17.0	1.0	3.1	0.0%	0.0			0.0
17.0	18.0	1.0	3.1	0.0%	0.0			0.0
18.0	19.0	1.0	3.1	0.0%	0.0			0.0
19.0	20.0	1.0	3.1	0.0%	0.0			0.0
20.0	22.0	2.0	6.3	0.0%	0.0			0.0
22.0	23.0	1.0	3.1	5.0%	0.2			0.0
23.0	26.0	3.0	9.4	30.0%	2.8	BA-6 28.5'	13.30%	0.4
26.0	28.5	2.5	7.9	10.0%	0.8	BA-6 28.5'	13.30%	0.1
28.5	30.5	2.0	6.3	50.0%	3.1	BA-6 28.5'	13.30%	0.4
30.5	32.0	1.5	4.7	5.0%	0.2	BA-6 32'	14.40%	0.0
32.0	34.0	2.0	6.3	5.0%	0.3	BA-6 32'	14.40%	0.0
34.0	36.0	2.0	6.3	0.0%	0.0			0.0
36.0				0.0%				
TOTALS		**36.0**	**113.1**		**7.5**			**1.0**

Volume of Boring as Mixed Debris	6.6	%
Volume of Mixed Debris as Total Volatile Solids (TVS)	13.1	%
Volume of Boring as TVS	0.9	%

Notes:

1. Depth as repoted by Driller unless noted otherwise.
2. Values presented as approximations or ranges on boring log (~, <, >) are listed at the maximum of the range or approximation.
3. Calculated by multiplying the volume of the zone by the percentage of mixed debris within the zone.
4. Calculated by multiplying the volume of mixed debris for the zone by the cooresponding TVS sample result.

April 24, 2017

ZONE A COMBUSTION EVALUATION REPORT
PASCO SANITARY LANDFILL

Pasco Sanitary Landfill
Pasco, WA

Appendices

Appendix D: Temperature Data

APPENDIX D. TEMPERATURE DATA

Subsurface temperatures are commonly measured at sites using temperature measurement devices such as thermocouples and can be connected to datalogging equipment for continuous readings. For instance, Jafari et al. (2016) used Type T thermocouples attached to a CPVC pipe and installed in boreholes, which were then backfilled with cement bentonite grout. These downhole temperature arrays (DTAs) were installed in a MSW landfill in order to detect elevated temperature increases that are beyond the range of biodegradation. Additionally, subsurface temperatures can be used to detect and quantify biodegradation rates. For instance, the Thermal NSZD technology (ThermalNSZD, 2016), installs Type T thermocouples in subsurface boreholes in both a background (clean) as well as several hydrocarbon-impacted locations. The difference in temperatures between the two locations are then used along with an algorithm to convert to natural source zone depletion (NSZD) rates at a light non-aqueous phase liquid (LNAPL) site. Similarly, other case studies using similar measurement devices have been able to measure and quantify the heat signal from biodegradation (Sweeney and Ririe, 2014; Warren and Bekins, 2015).

Type T thermocouples were installed at various depths at nine different locations throughout Zone A. Insulated with braided 304 or 316 SS for protection from corrosion, the thermocouples had a temperature measurement range of -454 to 700 ºF, and were manufactured to meet ASTM E-230 code requirements with Standard Limits of Error (± 1.0 ºC or 0.75%, whichever is higher). For this project, the temperature monitoring system needs to be able to distinguish between temperatures in the biological reaction range (<176 ºF) and combustion range (357 ºF). Thermocouples can measure temperatures well within this level of error even when considering factors that can affect thermocouple readings such as the factors discussed below. Field checks were performed on the thermocouples prior to installation using a Fluke temperature meter. All thermocouples were plugged in and compared to the actual ambient temperature conditions prior to installation. An ice water and boiling water calibration check was performed on a spare thermocouple of similar construction following the field program to confirm their accuracy.

Factors that can potentially can affect the temperature values include:

i) *Installation-related factors*: Thermocouple wires can bend, break, or crack during installation, which would break the thermocouple probe circuit. A standard volt meter can be used to check if the probe circuit is open or not. In this study, thermocouples with stainless steel sheaths were employed and there were no such breakage issues.

ii) *Variations in subsurface waste material composition:* differences in subsurface waste material composition can affect the thermal conductivity of the subsurface but will not cause errors in the temperature measurements themselves. Temperature measurements in the subsurface have the advantage that the thermal conductivity of different soil types doesn't vary significantly (in general less than a factor of two) compared to the variation in hydraulic conductivity (factor of eight or more orders of magnitude). This is why other landfill in-situ temperature studies have enclosed thermocouples in grout for protection; the grout doesn't affect the temperature signal significantly. As a conservative measure, the design of the thermocouple borings for this project emplaced the thermocouples in a sand pack to allow detection of hot air from potential combustion events to be accounted for in the temperature measurements. This increases the sensitivity of the temperature monitoring system to detect hot gases that could be coming from potential combustion.

iii) *Cold junction compensation errors:* the connection between the thermocouple and recording instrument plays a role in how well the instrument's cold junction compensation circuit operates. The cold junction compensation in the instrument imposes limits on the measurement. Essentially, the temperature of the cold junction at one end needs to be known in order to extract the sensed temperature from the other end (hot junction), since the recording instrument will likely not exist at the reference temperature of 0 ºC. In this study, the cold junction compensation error was only observed during the handling of the dataloggers and resulted in short-term "spikes" in the data which were subsequently resolved soon after.

iv) *Temperature variations in the data logger wellhead box between different download events*: this potential variable is mitigated with cold junction compensation that is inherent in all thermocouple recording devices.

v) *Offset/gain/drift errors:* with long-term use, a thermocouple can progressively become decalibrated or inhomogenous, which can impact measured readings. One main reason for decalibration is that wires can become chemically attached, which impacts mechanical properties of the material and ultimately the temperature readings.

Under normal circumstances, thermocouple drift is a gradual, very slow process. Park (2010) states: *"To achieve long and reliable thermocouple life, the usual strategy is to operate the device comfortably under its maximum temperature, and provide it with the cleanest possible environment in which to work. Enclosures, such as sheaths, protecting tubes, and thermowells are the usual means of controlling the conditions that actually surround the thermoelements themselves." (*Richard M. Park. (2010) Thermocouple Fundamentals, Marlin Mfrg. Corp., Cleveland, Ohio, U.S.A.)

For this project, potential drift problems are mitigated by:

1) Using T-Type thermocouples, this type of thermocouple is known to be moisture resistant and very stable.
2) Using high-end stainless steel sheaths to protect the thermocouple wire.
3) The expected operating conditions in Zone A is well below the maximum operating temperature (700°F) of thermocouples; if temperatures approach the maximum operating temperature then combustion is likely.
4) There are multiple thermocouples at each location; if one thermocouple exhibits unusual behavior it is expected within several months that the next-highest and next-lowest thermocouples can be used to confirm this signal (e.g., see Figure 5.5).

vi) *Temperature gradients across the T/C wire*: Temperature gradients across the thermocouple wire can introduce errors due to impurities in the metals. This problem is not common enough or serious enough to preclude use of thermocouples for thousands of applications, including measurement of subsurface temperatures. Under expected subsurface conditions, steep gradients (i.e., several hundred degrees F) are not expected to cause any problems where a false negative signal for combustion occurs. In the case of combustion, a steep vertical gradient along the thermocouple wire may be created and cause some error in the absolute temperature that is being measured, but the gradient issue will not show a false negative signal and combustion will be detected. For this project, the use of stainless steel sheathing reduces the impact of steep gradients (Omega.com).

vii) Incorrect use of extensions: in cases where the length of the original thermocouple wire needs to be extended, thermocouple extensions can be used. Errors from thermocouple extensions include: i) mismatch of extension wire to the main thermocouple type; ii) poor connections; or iii) reversing the polarity of the two metal types. In this study, errors resulting from the incorrect use of extensions were mitigated, as described below.

In this study, there were three factors that complicated the temperature data collection and analysis:

1. **Datalogger Spikes:** When the dataloggers were pulled from the enclosures for downloading and then reconnected to the thermocouples in the enclosures, a short-term (a few hours) spike in the temperatures was observed. The manufacturer (Lascar) acknowledged this could happen for two different reasons:
   i) When the logger is plugged into USB, it operates at a higher frequency. This causes some self-heating of a few degrees, which can be seen by the internal thermistor. “The thermistor provides Cold Junction Compensation and should adjust itself to the ambient temperature fairly quickly” (Lascar Electronics, personal communication).
   ii) “When the thermocouple connector is handled, then body temperature will change the measured temperature until the mass of the connector and thermocouple equalize” (Lascar Electronics, personal communication).

   For this report, the datalogger-created temperature spikes in the hours after reinstalling the data loggers were not used to determine the average and maximum temperatures measured in Zone A.

2. **Type K Extensions:** It is common practice to attach thermocouple wire extensions to extend the length of the original thermocouple wire that was purchased. For this project, Type T thermocouples were used, and 18 of the 47 thermocouple installations were installed using extensions. During this work, however, “Type K” extensions from Phase 1 of the Balefill Area project, and five “Type K” extensions from the Phase 2 of the Balefill Area project were used to extend the Type T thermocouple wires being installed. According the manufacturer, installing that particular Type K extension to the Type T wire can potentially result in the datalogger reading two temperature signals, one from the subsurface and one from the junction of the Type K and Type T at the surface. The three extensions from Phase 1 of the Balefill Area project resulted in obviously incorrect temperature signals with a wide diurnal variation where two signals were combined: 1) the subsurface temperature signal; and 2) an air temperature signal being measured by the junction at the surface. This problem affects the data from the TC2-16, TC2-27, and TC6-29 locations; the incorrect data are shown as faded lines in the figures below and in Appendix B but were not used in the temperature analysis. For the five extensions from Phase 2 of the Balefill Area project, no diurnal variations were observed in the signal, and subsequent testing showed this type of extension provided reliable data.

   Table D.1 below summarizes the use of all extensions and thermocouple types at each location and depth, as well as current data quality issues.

Table D.1. *Summary of all extensions and data quality issues.*

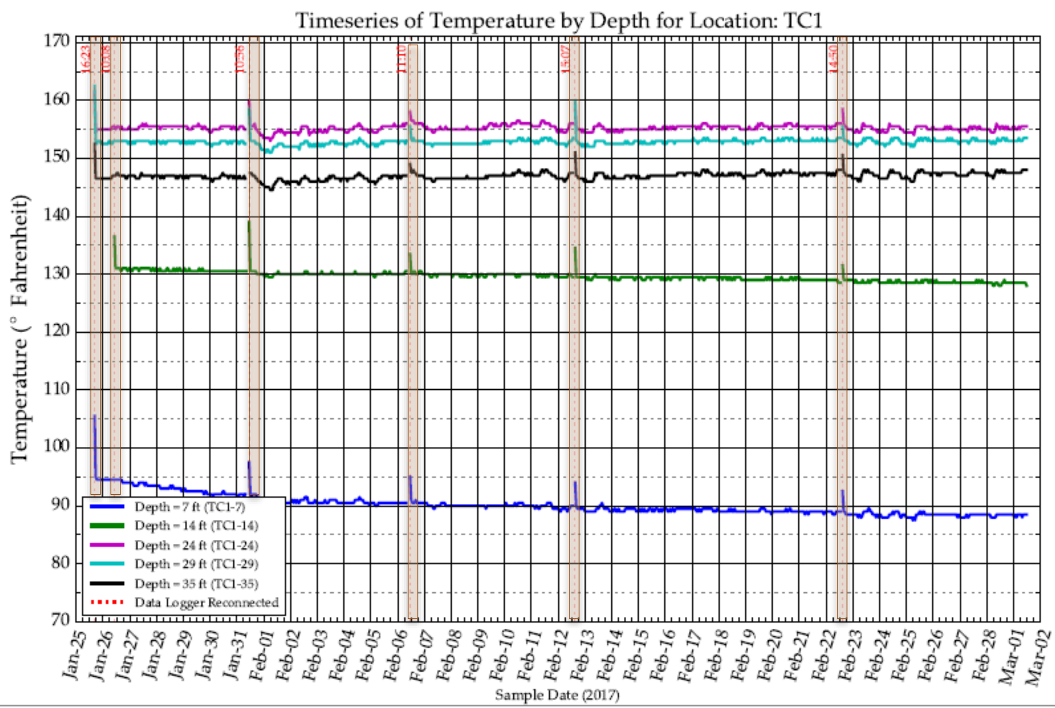
Thermocouple	Extension	Extension Type	Initial Data Quality Issues	Extension Status	Current Quality Issues
TC1-7	Yes	Type K, from Phase 2 of Balefill Area project	None	Removed prior to Six Day Test	None
TC1-14	Yes	Type T	None	In place	None
TC1-24	Yes	Type T	None	In place	None
TC1-29	Yes	Type T	None	In place	None
TC1-35	Yes	Type T	None	In place	None
TC2-8	No	--	None	--	None
TC2-16	Yes	Type K, from Phase 1 of Basefill Area project	High variability with diurnal temperature trends	In place; could not remove	Data invalid
TC2-27	Yes	Type K, from Phase 1 of Basefill Area project	High variability with diurnal temperature trends	Removed prior to Six Day Test	None
TC2-32	Yes	Type T	None	In place	None
TC2-36	Yes	Type K, from Phase 2 of Balefill Area project	None	Removed prior to Six Day Test	None
TC3-8	Yes	Type T	None	In place	None
TC3-16	No	--	None	--	None
TC3-25	No	--	None	--	None
TC3-30	No	--	None	--	None
TC3-37	Yes	Type K, from Phase 2 of Balefill Area project	None	Removed prior to Six Day Test	None
TC4-9	No	--	None	--	None
TC4-14	Yes	Type K, from Phase 2 of Balefill Area project	None	Removed prior to Six Day Test	None
TC4-19	No	--	None	N/A	None
TC4-24	Yes	Type K, from Phase 2 of Balefill Area project	None	Removed prior to Six Day Test	None
TC4-30	No	--	None	--	None
TC5-7	No	--	None	--	None
TC5-12	No	--	None	--	None
TC5-21	No	--	None	--	None
TC5-28	No	--	None	--	None
TC5-33	No	--	None	--	None

Thermocouple	Extension	Extension Type	Initial Data Quality Issues	Extension Status	Current Quality Issues
TC6-12	No	--	None	--	None
TC6-22	No	--	None	--	None
TC6-25	Yes	Type T	None	In place	None
TC6-29	Yes	Type K, from Phase 1 of Balefill Area project	High variability with diurnal temperature trends	Removed prior to Six Day Test	None
TC6-36	No	--	None	--	None
TC7-8	Yes	Type T	None	In place	None
TC7-17	Yes	Type T	None	In place	None
TC7-23	No	--	None	--	None
TC7-26	No	--	None	--	None
TC7-29	No	--	None	--	None
TC7-33	No	--	None	--	None
TC8-13	No	--	None	--	None
TC8-17	Yes	Type T	None	In place	None
TC8-26	No	--	None	--	None
TC8-29	No	--	None	--	None
TC8-32	No	--	None	--	None
TC8-37	No	--	None	--	None
TC9-19	No	--	None	--	None
TC9-25	No	--	None	--	None
TC9-29	No	--	None	--	None
TC9-34	No	--	None	--	None
TC9-39	No	--	None	--	None

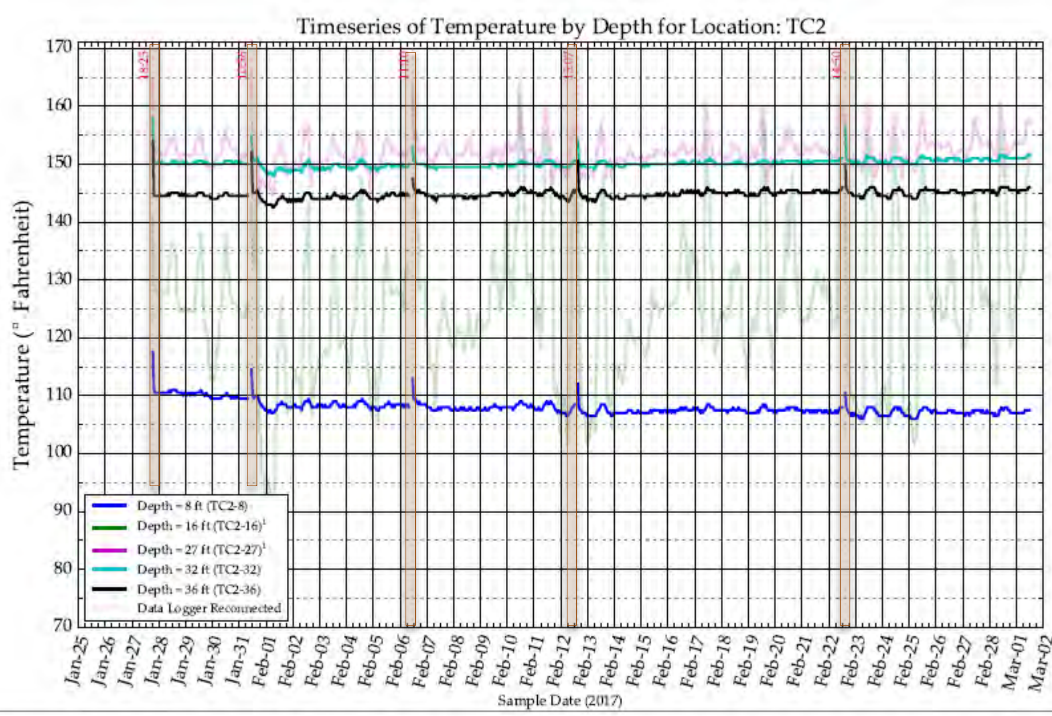
3. **Dataloggers Programmed to Read Type K Thermocouples.** While the Balefill temperature monitoring project used Type K thermocouples, Type T thermocouples were specified for this project due to their higher accuracy and acceptable upper range. However, the dataloggers were also from the Balefill temperature monitoring project but were not reprogrammed to read Type T thermocouples. The manufacturer said this problem was small and would introduce a 1/42 or 2.3% error. To confirm that the data collected before this problem was identified were sound, a “Six Day” test was performed to compare three days of “Type K” datalogger programming to three days of “Type T” datalogger programming. The results, shown in Table D.2, confirm the error is very small, and suggest the data collected during the main test was likely 1 ºF too high.

Table D.2. *Results of Six Day Test. The maximum error was 2.4 ºF overestimate at temperature at the warmest location; the average error was only 0.8% or 1.2 ºF.*

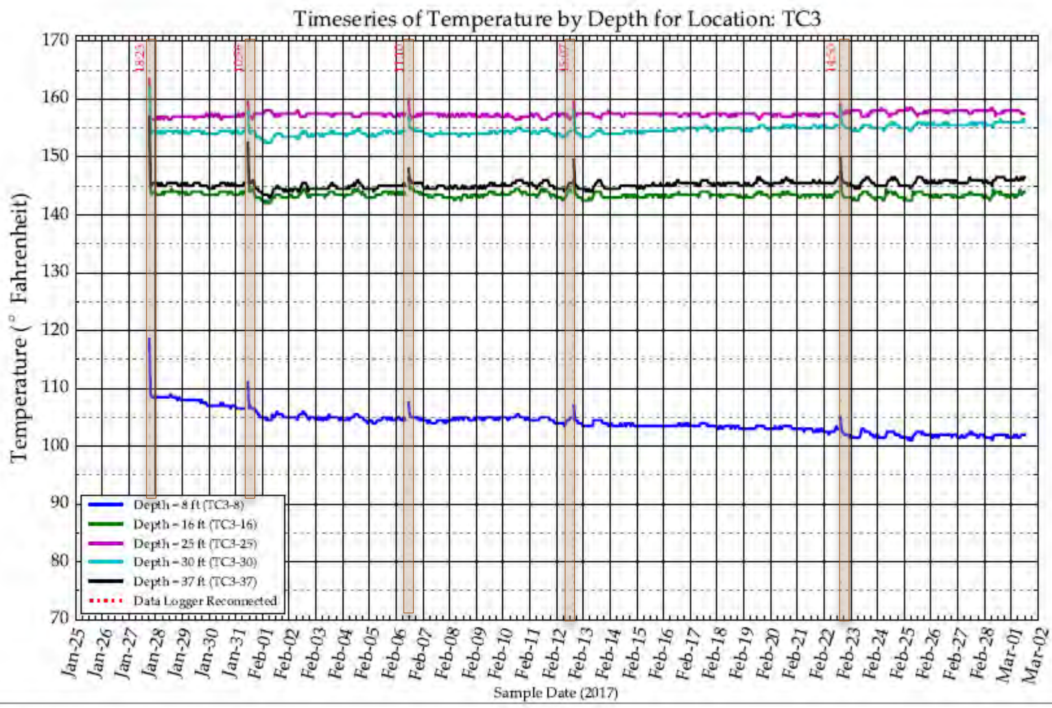
Location	Depth (ft bgs)	Original Data Logger Programming (First Three Days) (ºF)			Correct Data Logger Programming Last Three Days) (ºF)			(Original - Correct) ÷ Correct Programming (%)	Original - Correct Programming (ºF)
		Min	*Max*	*Average*	*Min*	*Max*	*Average*		
TC-1	7	88	89	88	88	89	89	-0.2%	-0.2
	14	126	127	126	125	126	125	0.8%	1.0
	24	154	155	155	152	153	152	1.6%	2.4
	29	153	154	153	150	152	151	1.6%	2.4
	35	148	149	148	146	147	146	1.4%	2.0
TC-2	8	107	108	107	107	108	107	0.3%	0.3
	16	--	--	--	--	--	--		
	27	155	156	155	152	154	153	1.5%	2.3
	32	152	153	153	150	151	150	1.4%	2.1
	36	146	147	146	144	145	145	1.2%	1.8
TC-3	8	100	101	100	100	101	100	0.0%	0.0
	16	143	144	143	141	142	141	1.3%	1.8
	25	158	**160**	159	156	158	157	1.5%	2.3
	30	157	158	158	155	156	155	1.5%	2.4
	37	147	148	147	145	146	145	1.3%	1.9
TC-4	9	89	91	90	89	91	90	0.1%	0.1
	14	108	109	108	107	108	108	0.5%	0.5
	19	120	121	120	119	120	120	0.7%	0.8
	24	123	124	124	122	123	123	0.7%	0.9
	30	121	123	122	120	122	121	0.8%	1.0
TC-5	7	95	96	96	95	96	96	0.1%	0.1
	12	125	126	125	124	125	124	0.9%	1.1
	21	142	143	142	140	141	141	1.1%	1.5
	28	148	149	149	146	148	147	1.4%	2.0
	33	150	150	150	148	148	148	1.3%	1.9
TC-6	12	104	106	105	103	106	105	0.4%	0.4
	22	144	146	145	143	144	143	1.2%	1.7
	25	152	153	152	150	150	150	1.3%	2.0
	29	154	155	154	152	153	152	1.3%	2.0
	36	143	144	143	142	143	142	1.1%	1.5
TC-7	8	76	80	77	76	81	78	-1.0%	-0.8
	17	104	105	104	104	105	104	0.4%	0.4
	23	120	122	121	119	121	120	0.7%	0.9
	26	127	128	128	126	127	127	0.8%	1.0
	29	131	132	132	130	131	130	0.9%	1.2
	33	135	136	135	134	135	134	0.8%	1.1
TC-8	13	99	101	100	99	100	100	0.3%	0.3
	17	114	115	114	114	115	114	0.4%	0.5
	26	138	139	139	137	138	137	1.1%	1.5
	29	140	141	141	138	140	139	1.2%	1.6
	32	140	141	141	138	140	139	1.1%	1.5
	37	136	137	137	135	136	135	1.0%	1.3
TC-9	19	108	109	108	107	108	108	0.5%	0.5
	25	115	116	115	114	115	115	0.6%	0.7
	29	121	122	122	121	122	121	0.6%	0.7
	34	128	129	129	127	128	128	0.8%	1.0
	39	125	126	126	124	125	125	0.7%	0.9
							Average	***0.8%***	***1.2***



Notes:
1. Recorded values when data loggers were not connected to thermocouples are not shown on the plot.
2. The small, periodic uptick in temperature occurs at the time that a datalogger is reconnected to a thermocouple and does not represent a valid temperature measurement.



Notes:
1. Data shown as transparent lines due to non-valid measurements as a result of Type K extensions.
2. Recorded values when data loggers were not connected to thermocouples are not shown on the plot.
3. The small, periodic uptick in temperature occurs at the time that a datalogger is reconnected to a thermocouple and does not represent a valid temperature measurement.



Notes:
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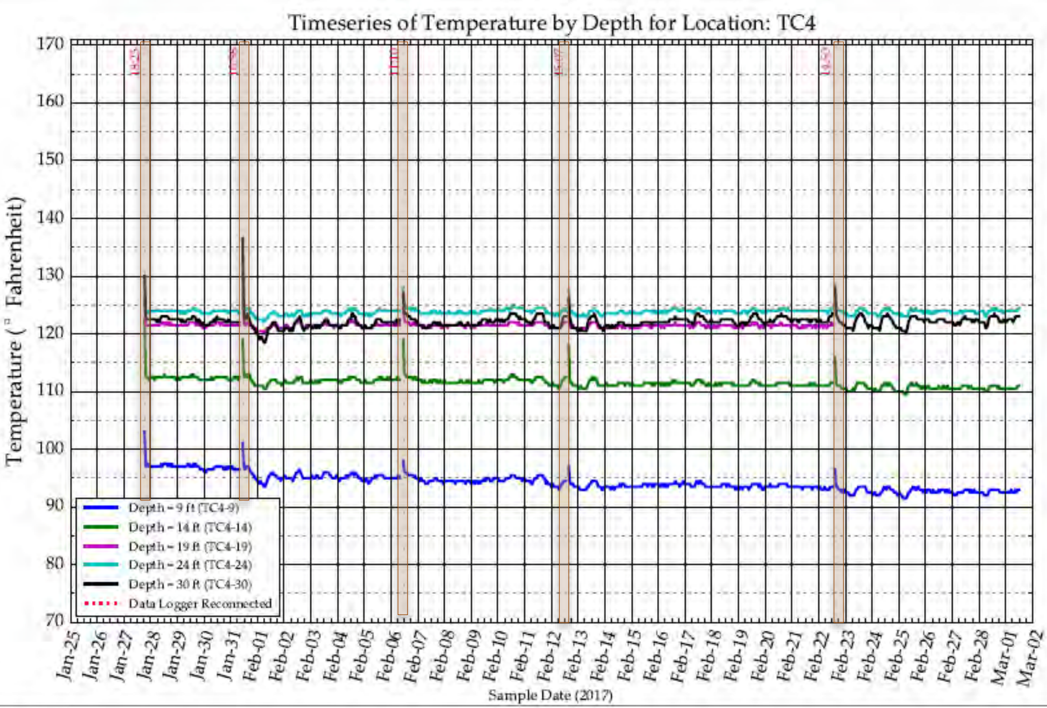
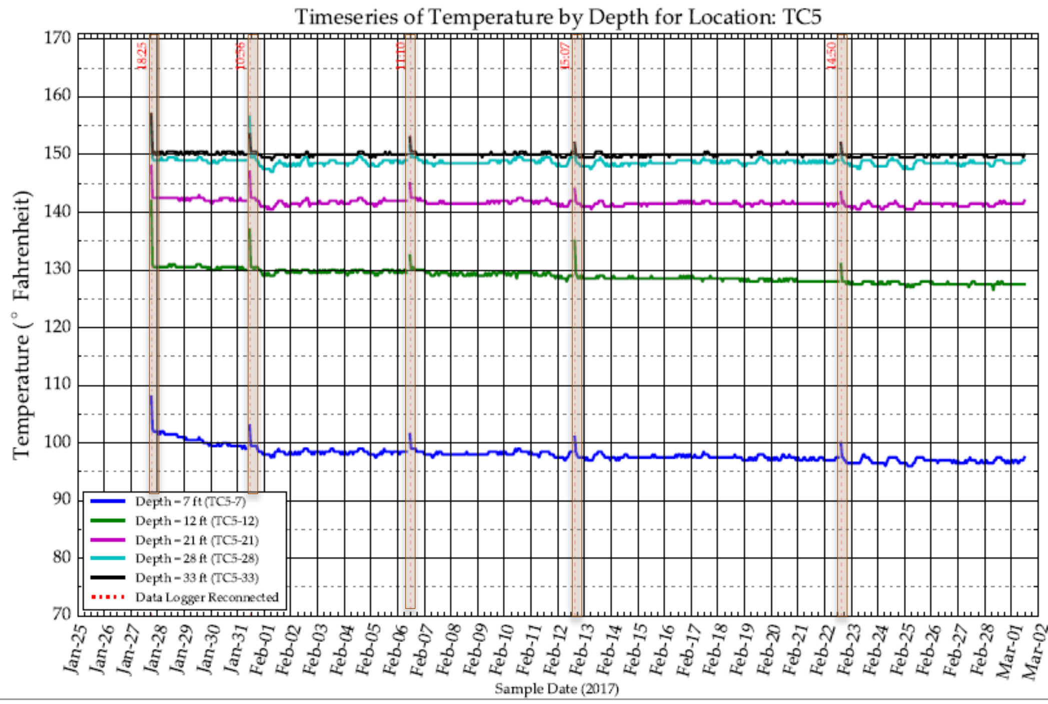
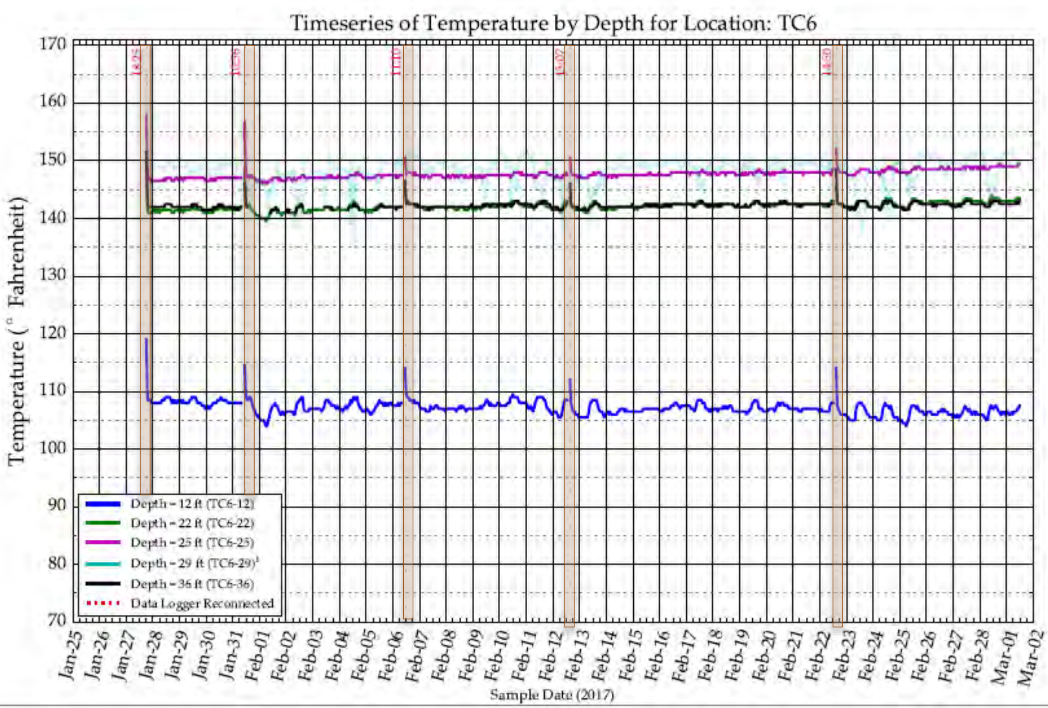


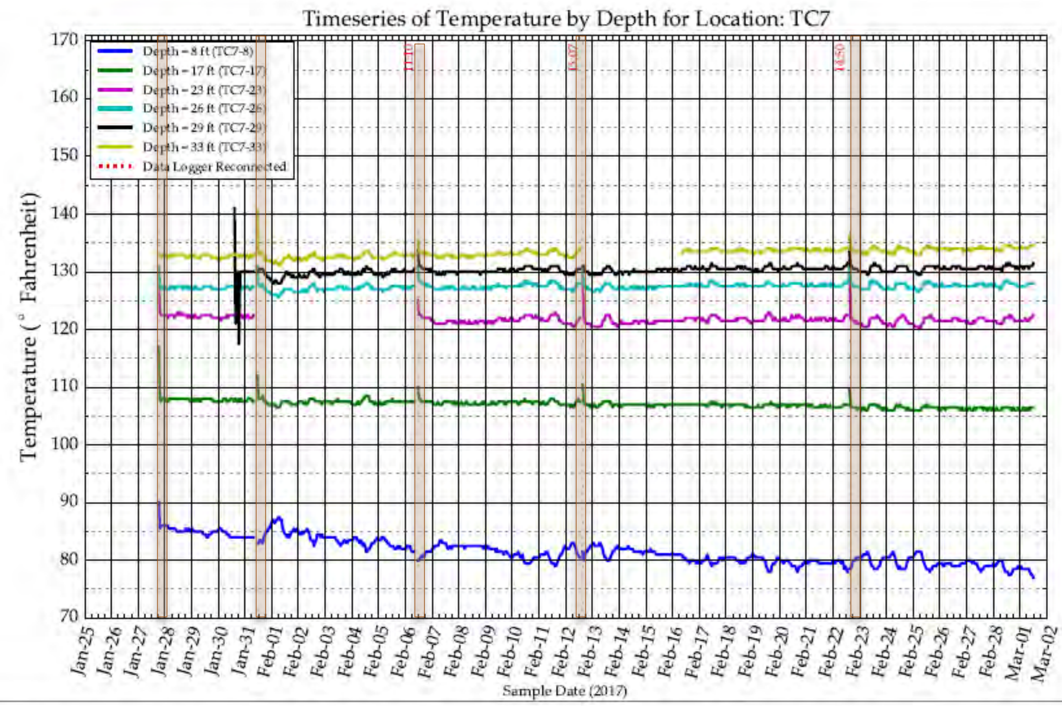
Notes:
1. Recorded values when data loggers were not connected to thermocouples are not shown on the plot.
2. The small, periodic uptick in temperature occurs at the time that a datalogger is reconnected to a thermocouple and does not represent a valid temperature measurement.



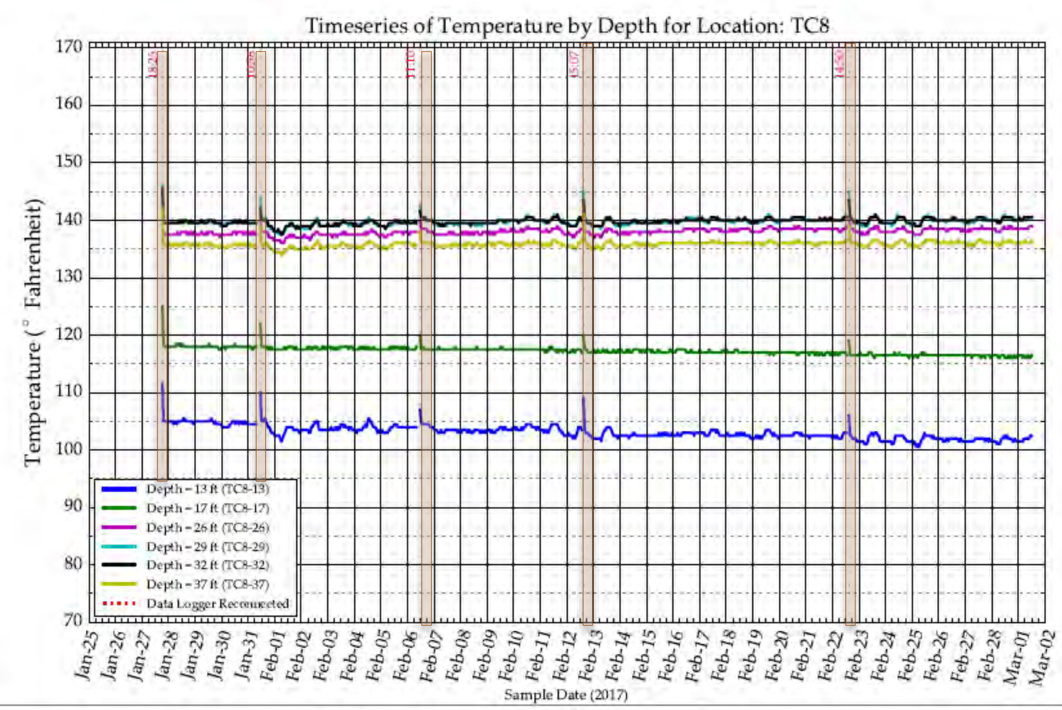
Notes:
1. Recorded values when data loggers were not connected to thermocouples are not shown on the plot.
2. The small, periodic uptick in temperature occurs at the time that a datalogger is reconnected to a thermocouple and does not represent a valid temperature measurement.



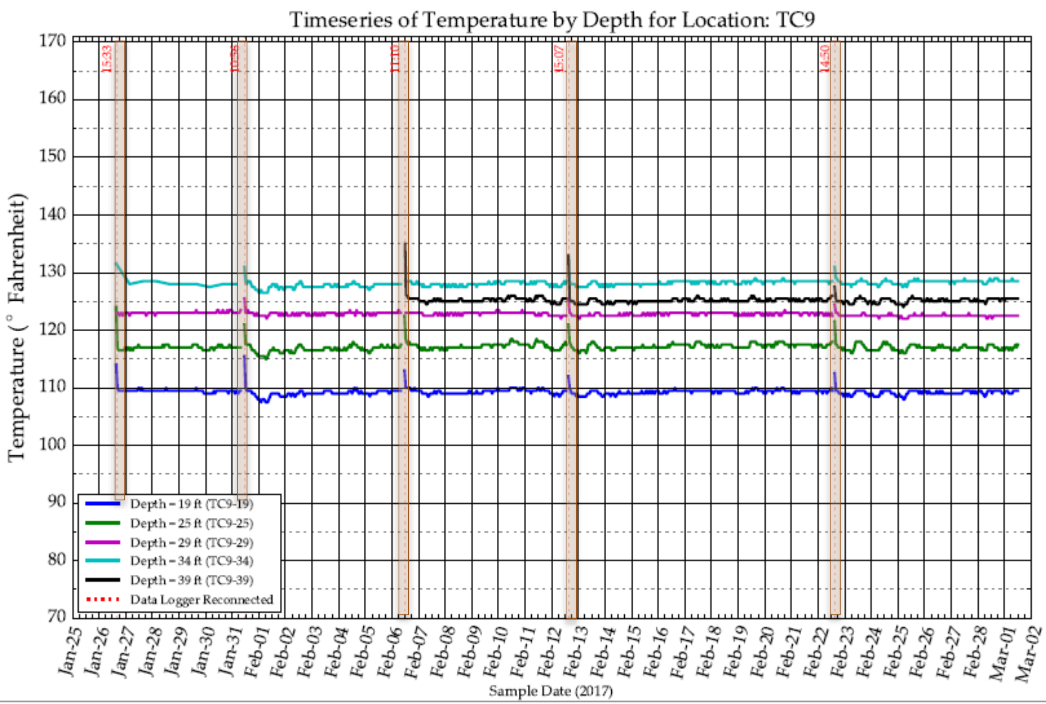
Notes:
1. Data shown as transparent lines due to non-valid measurements as a result of Type K extensions.
2. Recorded values when data loggers were not connected to thermocouples are not shown on the plot.
3. The small, periodic uptick in temperature occurs at the time that a datalogger is reconnected to a thermocouple and does not represent a valid temperature measurement.



Notes:
1. Recorded values when data loggers were not connected to thermocouples are not shown on the plot.
2. The small, periodic uptick in temperature occurs at the time that a datalogger is reconnected to a thermocouple and does not represent a valid temperature measurement.



Notes:
1. Recorded values when data loggers were not connected to thermocouples are not shown on the plot.
2. The small, periodic uptick in temperature occurs at the time that a datalogger is reconnected to a thermocouple and does not represent a valid temperature measurement.



Notes:
1. Recorded values when data loggers were not connected to thermocouples are not shown on the plot.
2. The small, periodic uptick in temperature occurs at the time that a datalogger is reconnected to a thermocouple and does not represent a valid temperature measurement.

April 24, 2017

ZONE A COMBUSTION EVALUATION REPORT
PASCO SANITARY LANDFILL

Pasco Sanitary Landfill
Pasco, WA

Appendices

Appendix E: Carbon Dioxide – Oxygen Ratios Stoichiometry

APPENDIX E. CARBON DIOXIDE – OXYGEN RATIOS STOICHIOMETRY

Complete combustion/oxidation of a fuel (e.g., hydrocarbon) in the presence of air (i.e., O_2) results in water (H_2O) and CO_2. The relationship between the O_2 consumed and CO_2 generated during the combustion/oxidation of a fuel, assuming steady state conditions and no biomass accumulation, can therefore, represent the typical behavior of that particular fuel during the combustion/oxidation process. This CO_2 to O_2 relationship can be determined by 1) first, stoichiometrically balancing the process, 2) then, calculating the slope of the CO_2 generated to the O_2 consumed, and 3) finally, estimating the regression line representing the combustion/oxidation process.

Generating regression lines representing the combustion/oxidation processes for various fuels can assist in determining which fuel the observed conditions at a particular site are more representative of. For Zone A, the fuels of interest include toluene, methane, 2-butanone, municipal solid waste (MSW), paper, and wood. Development of the combustion/oxidation regression line for each of these fuels is described below.

Toluene

The stoichiometric relation for the complete oxidation/combustion of toluene (C_7H_8) is:

$C_7H_8 + 9O_2 \rightarrow 7CO_2 + 4H_2O$ (1)

Based on Equation 1, slope of the CO_2/O_2 relationship for toluene is -7/9[1]. That is, every mole of C_7H_8 that is oxidized/combusted requires 9 moles of O_2 and generates 7 moles of CO_2 and 4 moles of water. Because moles are directly proportional to concentration (i.e., concentration = moles per volume), concentration data can be used to estimate the regression line based on the slope calculated above. Therefore, as shown on Figure 7.1, the toluene regression line extends from x = 20.9% and y = 0 to x = 0 and y = 16.3%[2].

Methane

For methane (CH_4), the stoichiometric relation for complete oxidation/combustion is:

$CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$ (2)

This yields a CO_2/O_2 slope for methane of -½ and a regression line that extends from x = 20.9% and y = 0 to x = 0 and y = 10.5% (Figure 7.1).

2-Butanone

For 2-butanone (C_4H_8O), the stoichiometric relation for the oxidation/combustion is:

$C_4H_8O + 5.5O_2 \rightarrow 4CO_2 + 4H_2O$ (3)

[1] The minus sign signifies decreasing O_2 content with increasing CO_2 content and vice versa.
[2] The y-intercept is calculated using the equation for a straight line: $y = mx+c$, where y = y-value, m = slope, x = x-value, and c = y-intercept. Rearranging the equation for c gives, $c = y-mx$. For toluene, m = -7/9. Therefore, when x = 20.92% (on a mole basis, air can be considered as comprised of ~20.92% O_2 and ~79.08% nitrogen) and y =0% then c = 16.27%.

The CO_2/O_2 slope for 2-butanone is -4/5.5 giving a regression line that extends from x = 20.9% and y = 0 to x = 0 and y = 15.21% (Figure 7.1).

Municipal Solid Waste

Assuming that the MSW in Zone A is a mix of organic waste, then the formula $C_6H_{10}O_4$ (Themelis et al., 2002) can be used to approximate it. Consequently, the stoichiometric relation for complete combustion/oxidation is:

$C_6H_{10}O_4 + 6.5O_2 \rightarrow 6CO_2 + 5H_2O$ (4)

This yields a CO_2/O_2 slope for MSW of -6/6.5 and a regression line that extends from x = 20.9% and y = 0 to x = 0 and y = 19.3% (Figure 7.1).

Paper

The formula $C_6H_{10}O_5$ can be used to represent paper assuming that it is comprised mainly of cellulose. Therefore, the stoichiometric relation for complete combustion/oxidation is:

$C_6H_{10}O_5 + 6O_2 \rightarrow 6CO_2 + 5H_2O$ (5)

This yields a CO_2/O_2 slope for paper of -1 and a regression line that extends from x = 20.9% and y = 0 to x = 0 and y = 20.9% (Figure 7.1).

Wood

Assuming that the wood buried in Zone A can be expressed as lignin using the formula $C_{31}H_{34}O_{11}$, the stoichiometric relation for complete combustion/oxidation is:

$C_{31}H_{34}O_{11} + 34O_2 \rightarrow 31CO_2 + 17H_2O$ (6)

For wood, the CO_2/O_2 slope is -31/34, giving a regression line that extends from x = 20.9% and y = 0 to x = 0 and y = 19.1%.

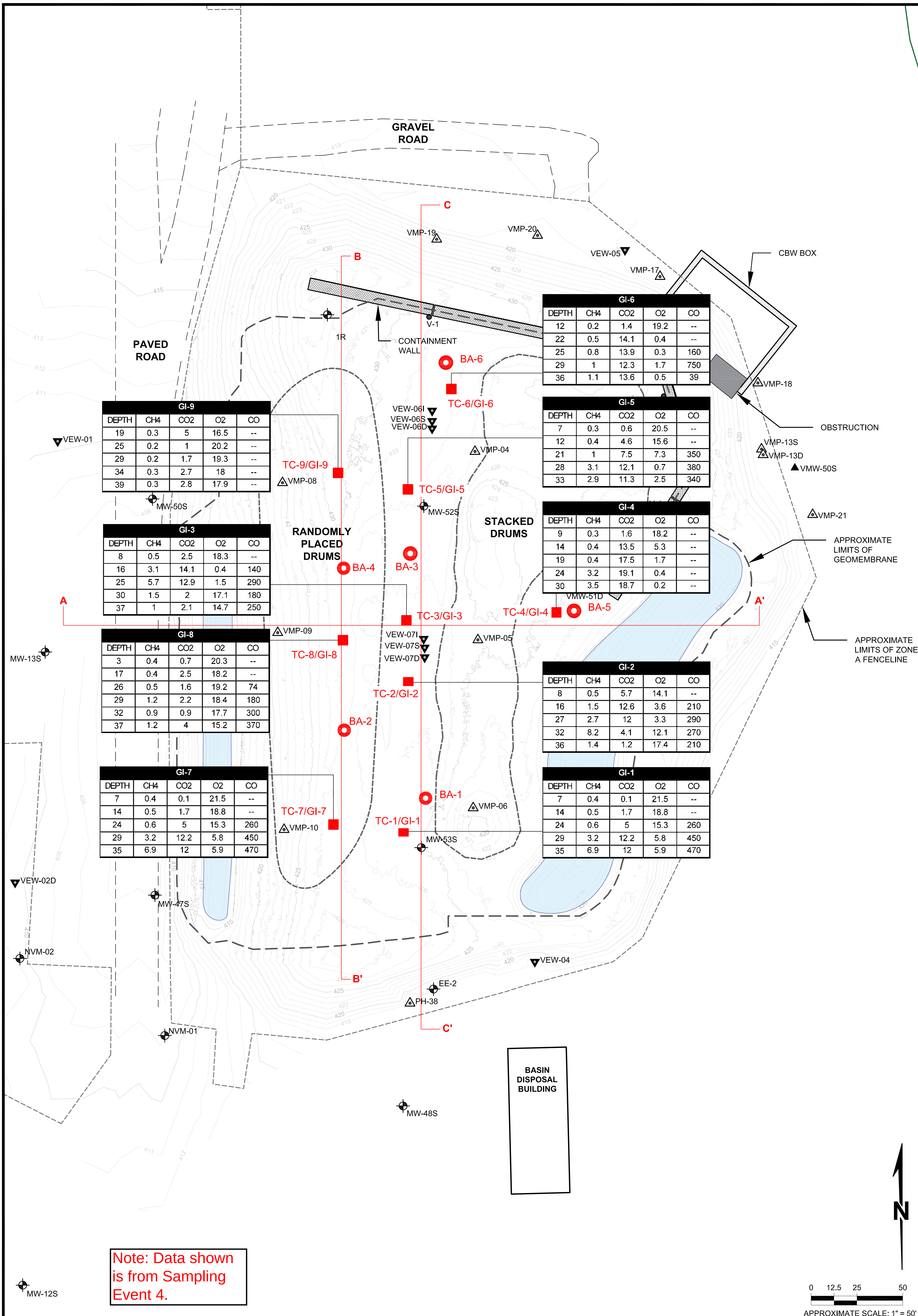
April 24, 2017

ZONE A COMBUSTION EVALUATION REPORT
PASCO SANITARY LANDFILL

Pasco Sanitary Landfill
Pasco, WA

Appendices

Appendix F: Soil Gas Analytical Data



GI-6

DEPTH	CH4	CO2	O2	CO
12	0.2	1.4	19.2	--
22	0.5	14.1	0.4	--
25	0.8	13.9	0.3	160
29	1	12.3	1.7	750
36	1.1	13.6	0.5	39

GI-5

DEPTH	CH4	CO2	O2	CO
7	0.3	0.6	20.5	--
12	0.4	4.6	15.6	--
21	1	7.5	7.3	350
28	3.1	12.1	0.7	380
33	2.9	11.3	2.5	340

GI-9

DEPTH	CH4	CO2	O2	CO
19	0.3	5	16.5	--
25	0.2	1	20.2	--
29	0.2	1.7	19.3	--
34	0.3	2.7	18	--
39	0.3	2.8	17.9	--

GI-4

DEPTH	CH4	CO2	O2	CO
9	0.3	1.6	18.2	--
14	0.4	13.5	5.3	--
19	0.4	17.5	1.7	--
24	3.2	19.1	0.4	--
30	3.5	18.7	0.2	--

GI-3

DEPTH	CH4	CO2	O2	CO
8	0.5	2.5	18.3	--
16	3.1	14.1	0.4	140
25	5.7	12.9	1.5	290
30	1.5	2	17.1	180
37	1	2.1	14.7	250

GI-8

DEPTH	CH4	CO2	O2	CO
3	0.4	0.7	20.3	--
17	0.4	2.5	18.2	--
26	0.5	1.6	19.2	74
29	1.2	2.2	18.4	180
32	0.9	0.9	17.7	300
37	1.2	4	15.2	370

GI-2

DEPTH	CH4	CO2	O2	CO
8	0.5	5.7	14.1	--
16	1.5	12.6	3.6	210
27	2.7	12	3.3	290
32	8.2	4.1	12.1	270
36	1.4	1.2	17.4	210

GI-7

DEPTH	CH4	CO2	O2	CO
7	0.4	0.1	21.5	--
14	0.5	1.7	18.8	--
24	0.6	5	15.3	260
29	3.2	12.2	5.8	450
35	6.9	12	5.9	470

GI-1

DEPTH	CH4	CO2	O2	CO
7	0.4	0.1	21.5	--
14	0.5	1.7	18.8	--
24	0.6	5	15.3	260
29	3.2	12.2	5.8	450
35	6.9	12	5.9	470

Note: Data shown is from Sampling Event 4.

NOTES

EB-1	EXPLORATORY BORING LOCATION
MW-53S	MONITORING WELL LOCATION
VMP-17	VACUUM MONITORING PROBE LOCATION
TC-1/GI-1	THERMOCOUPLE AND GAS MONITORING LOCATIONS
BA-1	BUCKET-AUGER BORINGS

A — A' CROSS SECTION LOCATION

CH4	METHANE (PERCENTAGE)
CO2	CARBON DIOXIDE (PERCENTAGE)
O2	OXYGEN (PERCENTAGE)
CO	LAB CARBON MONOXIDE (PARTS PER MILLION)
--	<100 BY METER

ENVIRONMENTAL PARTNERS INC

THERMOCOUPLE/GAS MONITORING AND BUCKET-AUGER BORING LOCATIONS

PROJECT	03916.0
PREPARED FOR	IWAG GROUP III PASCO LANDFILL
LOCATION	1901 DIETRICH ROAD PASCO, WASHINGTON

FIGURE	DRAWN BY	REVIEWED BY	DATE
3.1	VPB	ARM	4/20/17

Table F.1
Soil Gas Analytical Data

Sampling Location	Sample Date	Field Data							Laboratory			Temperature	
		CH_4 (%)	CO_2 (%)	O_2 (%)	CO_2/O_2 (-)	CO (ppmV)	LEL (%)	PID (ppm)	CO ppmV	Hydrogen ppmV	Nitrogen ppmV	Min °F	Max °F
Sampling Event 1													
GI1-7	2/8/2017	0.9	0.2	22.7	0.0	17	18	605				90	92
GI1-14	2/8/2017						0	0				129.5	130.5
GI1-24	2/8/2017	0.6	11.4	8.9	1.3	886	12	4016	11	<1,000	779,000	153	156
GI1-29	2/8/2017	2.2	13.6	4.4	3.1	693	44	3123	11	<1,000	779,000	151	153.5
GI1-35	2/8/2017	1.9	12.6	6.2	2.0	731	38	3807	93	<1,000	785,000	144.5	147.5
GI2-8	2/8/2017	0.3	7.4	12.4	0.6	3	6	340				107	110
GI2-16	2/8/2017	1.1	13.4	1.8	7.4	372	22	2189	270	<1,000	850,000	85.5	148
GI2-27	2/8/2017	3.0	11.4	3.3	3.4	533	60	2156	400*	<1,000	85,500	143	157
GI2-32	2/8/2017	7.3	10.4	3.1	3.4	1277	100	2535	**930**	6,350	865,000	148	151
GI2-36	2/8/2017	2.5	3.6	14.2	0.3	726	50	2661	750	4,620	837,000	142.5	145.5
GI3-8	2/7/2017	0.8	3.3	17.8	0.2	48	16	0				104	107
GI3-16	2/7/2017	2.6	14.8	0.0		304	52	0	78	4,130	842,000	142	144.5
GI3-25	2/7/2017	5.2	14.3	0.0		493	100	0	250	3,890	849,000	156.5	158
GI3-30	2/7/2017	5.3	13.7	0.2	68.5	694	100	0	440	3,810	853,000	152.5	155
GI3-37	2/7/2017	3.3	13.2	0.3	44.0	865	66	0	580	2,990	860,000	143	146
GI4-9	2/7/2017	0.0	3.7	17.2	0.2	0	0	152				93.5	97
GI4-14	2/7/2017	0.0	1.4	20.5	0.1	0	0	107				110.5	113
GI4-19	2/7/2017	0.3	5.1	16.9	0.3	0	6	115				120	122.5
GI4-24	2/7/2017	1.2	6.3	16.1	0.4	6	24	276				122	124.5
GI4-30	2/7/2017	1.1	5.5	16.9	0.3	1	22	125				118.5	123.5
GI5-7	2/7/2017	0.5	1.0	21.2	0.0	11	10	0				97.5	99.5
GI5-12	2/7/2017	0.5	6.3	14.8	0.4	20	10	0				129	130.5
GI5-21	2/7/2017	2.4	13.3	0.0		349	48	0	250	3,820	856,000	140.5	142.5
GI5-28	2/7/2017	5.2	13.9	0.0		427	100	0	230	5,040	848,000	147	150
GI5-33	2/7/2017	4.6	14.0	0.0		403	92	0	210	4,040	848,000	149	150.5
GI6-12	2/7/2017	0.2	0.9	21.7	0.0	0	4	15				104	109
GI6-22	2/7/2017	0.8	14.3	0.0		59	16	396				139.5	143
GI6-25	2/7/2017	0.7	13.4	0.0		298	14	0	230	4,720	852,000	146	148
GI6-29	2/7/2017	1.2	12.8	0.5	25.6	849	24	0	700	3,420	860,000	135	151
GI6-36	2/7/2017	1.9	13.8	0.0		118	38	0	18	4,020	850,000	3.5	142.5
GI7-8	2/8/2017	0.7	1.3	20.7	0.1	0	14	0				81.5	87.5
GI7-17	2/8/2017	0.4	3.5	17.7	0.2	0	8	0				106.5	108.5
GI7-23	2/8/2017	0.4	5.1	14.6	0.3	64	8	0				6.5	46.5
GI7-26	2/8/2017	0.6	3.0	14.1	0.2	183	12	2810	80	<1,000	801,000	125.5	128
GI7-29	2/8/2017	0.9	6.4	12.5	0.5	487	18	2402	200	<1,000	797,000	128	131
GI7-33	2/8/2017	0.9	3.4	12.1	0.3	543	18	2036	250	<1,000	811,000	131	133.5
GI8-13	2/8/2017	0.3	1.0	20.7	0.0	0	6	334				101.5	105.5
GI8-17	2/8/2017						0	0				117.5	118
GI8-26	2/8/2017	0.5	2.4	18.2	0.1	164	10	1184	95	<1,000	791,000	136	138.5
GI8-29	2/8/2017	1.5	3.7	16.9	0.2	462	30	3365	57	<1,000	781,000	137.5	140.5
GI8-32	2/8/2017	0.9	1.8	17.8	0.1	419	18	1536	150	<1,000	788,000	137.5	140
GI8-37	2/8/2017	1.4	4.8	13.1	0.4	765	28	1595	380	<1,000	803,000	134	136.5
GI9-19	2/8/2017	0.3	5.2	15.9	0.3	3	6	897				107.5	110
GI9-25	2/8/2017	0.2	2.0	18.9	0.1	4	4	623				115	118
GI9-29	2/8/2017	0.2	2.0	18.5	0.1	16	4	596				122	123.5
GI9-34	2/8/2017	0.3	3.1	17.3	0.2	19	6	798				126.5	128.5
GI9-39	2/8/2017	0.3	3.3	17.4	0.2	22	6	926				2.5	47
						Average	**27**	**888**	**266**	**4,238**	**794,604**	**118**	**127**
						Median	**16**	**276**	**220**	**4,030**	**839,500**	**128**	**131**
						Min	**0**	**0**	**11**	**2,990**	**85,500**	**3**	**47**
						Max	**100**	**4016**	**930**	**6,350**	**865,000**	**157**	**158**

Notes

* Sample collected on 2/8/17 was analyzed on 2/10/17 with concentration of 400 ppmv and on 2/27/17 with a concentration of 380 ppmv.

**Sample collected on 2/15/17 was analyzed on 2/16/17 with concentration of 5.2 ppmv and on 2/27/17 with a concentration of 5.4 ppmv.

1. CH4 Measurement may also include TNMO in vapor stream.
2. Temperature reported for the day sample was collected.
3. Samples associated with field issues are shown in gray.
4. Definitions:

CH_4 = Methane. CO = Carbon monoxide. CO_2 = Carbon dioxide. LEL = Lowest explosive limit.

O_2 = Oxygen. PID = Photoionization detector. ppmv = Parts per million volume.

Table F.1

Soil Gas Analytical Data

		Field Data							Laboratory			Temperature	
Sampling Location	Sample Date	CH_4 (%)	CO_2 (%)	O_2 (%)	CO_2/O_2 (-)	CO (ppmV)	LEL (%)	PID (ppm)	CO ppmV	Hydrogen ppmV	Nitrogen ppmV	Min °F	Max °F
Sampling Event 2													
GI1-7	2/14/2017	0.3	0.2	21.3	0.0	0	6	341				89	91
GI1-14	2/14/2017	0.7	1.5	20.1	0.1	12	14	284				129.5	130.5
GI1-24	2/14/2017	0.7	8.9	11.4	0.8	783	14	287	<5.0	<1,000	778,000	154.5	156.5
GI1-29	2/14/2017	2.3	12.8	5.3	2.4	729	46	210	<5.0	<1,000	778,000	152	153.5
GI1-35	2/14/2017	3.6	12.4	5.7	2.2	830	72	296	25	<1,000	780,000	146	148
GI2-8	2/15/2017	0.3	5.7	15.8	0.4	0	6	318				106.5	109.5
GI2-16	2/15/2017	1.9	13.5	1.2	11.3	187	38	459				101.5	165
GI2-27	2/15/2017	3.5	13.7	0.3	45.7	159	70	264	5.2**	<1,000	778,000	146.5	161.5
GI2-32	2/15/2017	1.4	2.5	15	0.2	322	28	272				149	150.5
GI2-36	2/15/2017	0.6	0.5	19.9	0.0	252	12	257	14	<1,000	780,000	143.5	146
GI3-8	2/14/2017	0.5	2.7	19	0.1	0	10	427				103.5	105.5
GI3-16	2/14/2017	2.1	14.6	0.3	48.7	296	42	990	<5.0	<1,000	778,000	142.5	144.5
GI3-25	2/14/2017	4.5	15.2	0.3	50.7	661	90	264	<5.0	<1,000	779,000	156.5	157.5
GI3-30	2/14/2017	3.2	2.4	16.3	0.1	387	64	214	<5.0	<1,000	778,000	153.5	155
GI3-37	2/14/2017	1.1	1.8	11.7	0.2	652	22	170	<5.0	<1,000	778,000	144	146
GI4-9	2/14/2017	0.3	3.3	18.7	0.2	5	6	392				93	96
GI4-14	2/14/2017	0.5	16.5	2.7	6.1	7	10	305				110.5	113
GI4-19	2/14/2017	0.5	17.8	1.1	16.2	7	10	313				121	122
GI4-24	2/14/2017	4.2	20.2	0.1	202.0	26	84	391				123	125
GI4-30	2/14/2017	4.2	19.8	0.2	99.0	28	84	453				121	123.5
GI5-7	2/14/2017	0.5	0.8	21.1	0.0	0	10	578				97	99
GI5-12	2/14/2017	0.4	5.5	15.4	0.4	4	8	418				128	130.5
GI5-21	2/14/2017	1.5	13.3	0.3	44.3	365	30	3571	120	2,430	827,000	141	142.5
GI5-28	2/14/2017	3.6	12.9	0.2	64.5	530	72	3375	<5.0	<1,000	779,000	148	150
GI5-33	2/14/2017	4	13.6	0.3	45.3	239	80	699	<5.0	<1,000	778,000	149.5	150.5
GI6-12	2/14/2017	0.3	1.8	19.8	0.1	7	6	318				105.5	109.5
GI6-22	2/14/2017	0.6	14.1	0.3	47.0	66	12	1071				141	143
GI6-25	2/14/2017	0.7	14	0.4	35.0	354	14	1215	<5.0	<1,000	778,000	147	148
GI6-29	2/14/2017	1	13.3	0.7	19.0	757	20	639	280	1,300	802,000	142	152.5
GI6-36	2/14/2017	1.2	13.7	0.3	45.7	156	24	426	7.1	<1,000	781,000	141.5	143
GI7-8	2/15/2017	0.3	1.3	20.8	0.1	1	6	392				79	83.5
GI7-17	2/15/2017	0.3	3.4	18	0.2	3	6	320				106.5	108
GI7-23	2/15/2017	0.2	4.7	15.7	0.3	42	4	322				120.5	123
GI7-26	2/15/2017	0.7	2.8	15.3	0.2	209	14	434	39	<1,000	789,000	126.5	128.5
GI7-29	2/15/2017	1	6	13.1	0.5	523	20	435	57	<1,000	783,000	129.5	131
GI7-33	2/15/2017	0.4	0.3	21.1	0.0	121	8	298	<5.0	<1,000	778,000	132.5	134
GI8-13	2/15/2017	0.2	1	20.7	0.0	3	4	334				102	104.5
GI8-17	2/15/2017	0.2	2.6	18.5	0.1	4	4	558				117	118
GI8-26	2/15/2017	0.6	2	18.3	0.1	205	12	364	12	<1,000	782,000	137	139
GI8-29	2/15/2017	2.8	2.9	17.2	0.2	501	56	564	61	<1,000	781,000	139	141
GI8-32	2/15/2017	1	1	19.1	0.1	343	20	868	100	<1,000	785,000	139	141
GI8-37	2/15/2017	0.9	3.7	13.6	0.3	638	18	822	320	<1,000	803,000	135	136.5
GI9-19	2/14/2017	0.3	5.3	18.4	0.3	9	6	794				108.5	110
GI9-25	2/14/2017	0.2	1.5	20.6	0.1	10	4	743				116.5	118.5
GI9-29	2/14/2017	0.2	1.8	20.1	0.1	27	4	721				122	123.5
GI9-34	2/14/2017	0.3	3	18.8	0.2	31	6	665				36.5	128.5
GI9-39	2/14/2017	0.3	3	18.5	0.2	33	6	780				124.5	126

Notes

* Sample collected on 2/8/17 was analyzed on 2/10/17 with concentration of 400 ppmv and on 2/27/17 with a concentration of 380 ppmv.

**Sample collected on 2/15/17 was analyzed on 2/16/17 with concentration of 5.2 ppmv and on 2/27/17 with a concentration of 5.4 ppmv.

1. CH4 Measurement may also include TNMO in vapor stream.
2. Temperature reported for the day sample was collected.
3. Samples associated with field issues are shown in gray.
4. Definitions:

CH_4 = Methane. CO = Carbon monoxide. CO_2 = Carbon dioxide. LEL = Lowest explosive limit.

O_2 = Oxygen. PID = Photoionization detector. ppmv = Parts per million volume.

Table F.1

Soil Gas Analytical Data

Sampling Location	Sample Date	Field Data CH_4 (%)	CO_2 (%)	O_2 (%)	CO_2/O_2 (-)	CO (ppmV)	LEL (%)	PID (ppm)	Laboratory CO ppmV	Hydrogen ppmV	Nitrogen ppmV	Temperature Min °F	Max °F
Sampling Event 3													
GI1-7	2/22/2017	0.4	0.2	20.9	0.0	0	8	1732				88.5	90.5
GI1-14	2/22/2017	0.3	3.1	16.7	0.2	0	6	1499				128.5	130
GI1-24	2/22/2017	0.6	5.6	14.5	0.4	562	12	1657	330	<1,000	791,000	154.5	156
GI1-29	2/22/2017	2.8	12.3	5.8	2.1	788	56	4954	440	<1,000	812,000	152	153.5
GI1-35	2/22/2017	5.7	12.2	5.7	2.1	865	100	6057	490	<1,000	812,000	146	148
GI2-8	2/21/2017	0.5	5.8	15.1	0.4	3	10	2415				106.5	108.5
GI2-16	2/21/2017	1.3	13.6	2.1	6.5	323	26	4801	180	<1,000	843,000	101.5	160
GI2-27	2/21/2017	2.9	12.4	2.0	6.2	542	58	9999	300	<1,000	845,000	147	161.5
GI2-32	2/21/2017	3.4	4.3	11.4	0.4	495	68	7845	290	1,860	832,000	149	151
GI2-36	2/21/2017	1.9	1.3	17.4	0.1	425	38	4761	190	1,950	798,000	143.5	146
GI3-8	2/22/2017	0.4	0.4	20.8	0.0	0	8	2950				102	104.5
GI3-16	2/22/2017	2.6	14.4	0.3	48.0	516	52	5003	120	4,210	842,000	142.5	144
GI3-25	2/22/2017	3.2	13.7	0.3	45.7	661	64	4771	270	3,320	847,000	156.5	158
GI3-30	2/22/2017	1.7	2.8	14.4	0.2	473	34	4721	230	1,480	813,000	153.5	155.5
GI3-37	2/22/2017	1.2	3.7	10.8	0.3	715	24	3960	340	1,330	826,000	144	146.5
GI4-9	2/22/2017	0.3	1.5	20.3	0.1	0	6	886				93	94.5
GI4-14	2/22/2017	0.4	14.2	6.2	2.3	1	8	712				110.5	112.5
GI4-19	2/22/2017	0.4	17.3	2.3	7.5	3	8	554				120.5	122
GI4-24	2/22/2017	2.7	19.0	1.1	17.3	20	54	683				123	124.5
GI4-30	2/22/2017	2.9	18.9	0.5	37.8	36	58	761				120.5	123.5
GI5-7	2/22/2017	0.3	0.8	19.9	0.0	1	6	1941				97	98.5
GI5-12	2/22/2017	0.3	4.6	15.5	0.3	4	6	1669				128	129
GI5-21	2/22/2017	1.3	8.4	5.7	1.5	409	26	3386	240	2,190	842,000	140.5	142
GI5-28	2/22/2017	3.0	13.0	0.3	43.3	602	60	4432	230	4,540	850,000	147.5	149.5
GI5-33	2/22/2017	2.6	13.2	0.3	44.0	567	52	4548	220	3,500	849,000	149.5	150.5
GI6-12	2/22/2017	0.3	1.3	19.5	0.1	3	6	411				105.5	108.5
GI6-22	2/22/2017	0.5	13.9	0.4	34.8	72	10	3249				141	143
GI6-25	2/22/2017	0.8	13.5	0.4	33.8	387	16	3611	160	3,910	844,000	147	148.5
GI6-29	2/22/2017	1.0	12.3	1.6	7.7	1146	20	3521	**780**	2,430	846,000	138.5	150.5
GI6-36	2/22/2017	0.9	13.4	0.5	26.8	207	18	3953	42	3,290	849,000	141.5	143
GI7-8	2/21/2017	0.4	1.5	20.4	0.1	0	8	0				78	83
GI7-17	2/21/2017	0.3	3.5	17.6	0.2	1	6	192				106.5	107.5
GI7-23	2/21/2017	0.3	4.8	15.1	0.3	52	6	543				120.5	123
GI7-26	2/21/2017	0.5	2.9	14.8	0.2	167	10	1139	120	<1,000	818,000	126.5	128.5
GI7-29	2/21/2017	0.8	5.8	12.7	0.5	477	16	2844	340	<1,000	812,000	129.5	131.5
GI7-33	2/21/2017	0.9	3.1	14.2	0.2	449	18	2262	270	<1,000	815,000	21	134
GI8-13	2/21/2017	0.3	0.7	21.4	0.0	3	6	919					
GI8-17	2/21/2017	0.3	2.6	18.8	0.1	10	6	562				116.5	117.5
GI8-26	2/21/2017	0.5	1.9	19.4	0.1	130	10	1329	81	<1,000	786,000	137	139
GI8-29	2/21/2017	0.9	2.8	18.6	0.2	271	18	3797	200	<1,000	787,000	138.5	141
GI8-32	2/21/2017	1.0	1.2	18.0	0.1	423	20	3910	300	<1,000	805,000	139	140.5
GI8-37	2/21/2017	1.2	4.7	14.5	0.3	633	24	4186	400	<1,000	804,000	135	136.5
GI9-19	2/22/2017	0.3	5.3	16.0	0.3	3	6	377				108.5	110
GI9-25	2/22/2017	0.3	1.5	19.6	0.1	8	6	309				116	118
GI9-29	2/22/2017	0.3	1.8	19.1	0.1	19	6	382				122	123.5
GI9-34	2/22/2017	0.3	2.7	18.1	0.1	20	6	525				127.5	129
GI9-39	2/22/2017	0.3	2.9	18.2	0.2	21	6	687				129.5	131.5
	Average	1.2	6.8	11.7	7.9	266	23	2668	273	2,834	823,667	125	131
	Median	0.6	4.6	14.5	0.3	130	12	2262	255	2,860	822,000	129	133
	Min	0.3	0.2	0.3	0.0	0	6	0	42	1,330	786,000	21	83
	Max	5.7	19.0	21.4	48.0	1146	100	9999	780	4,540	850,000	157	162

Notes

* Sample collected on 2/8/17 was analyzed on 2/10/17 with concentration of 400 ppmv and on 2/27/17 with a concentration of 380 ppmv.

**Sample collected on 2/15/17 was analyzed on 2/16/17 with concentration of 5.2 ppmv and on 2/27/17 with a concentration of 5.4 ppmv.

1. CH4 Measurement may also include TNMO in vapor stream.
2. Temperature reported for the day sample was collected.
3. Samples associated with field issues are shown in gray.
4. Definitions:

CH_4 = Methane. CO = Carbon monoxide. CO_2 = Carbon dioxide. LEL = Lowest explosive limit.

O_2 = Oxygen. PID = Photoionization detector. ppmv = Parts per million volume.

Table F.1
Soil Gas Analytical Data

Sampling Location	Sample Date	Field Data							Laboratory			Temperature	
		CH_4 (%)	CO_2 (%)	O_2 (%)	CO_2/O_2 (-)	CO (ppmV)	LEL (%)	PID (ppm)	CO ppmV	Hydrogen ppmV	Nitrogen ppmV	Min °F	Max °F
Sampling Event 4													
GI1-7	2/28/2017	0.4	0.1	21.5	0.0	2	8	2176				87.5	89.5
GI1-14	2/28/2017	0.5	1.7	18.8	0.1	3	10	1905				128	129
GI1-24	2/28/2017	0.6	5	15.3	0.3	492	12	1793	260	<1,000	790,000	154	156
GI1-29	2/28/2017	3.2	12.2	5.8	2.1	850	64	4528	450	<1,000	812,000	152	153.5
GI1-35	2/28/2017	6.9	12	5.9	2.0	923	100	4166	470	<1,000	812,000	146	148
GI2-8	3/1/2017	0.5	5.7	14.1	0.4	10	10	1632				106	108
GI2-16	3/1/2017	1.5	12.6	3.6	3.5	371	30	4332	210	<1,000	834,000	101.5	156
GI2-27	3/1/2017	2.7	12	3.3	3.6	507	54	4963	290	<1,000	841,000	147.5	161
GI2-32	3/1/2017	8.2	4.1	12.1	0.3	444	100	4502	270	1,550	826,000	150	151.5
GI2-36	3/1/2017	1.4	1.2	17.4	0.1	401	28	4262	210	1,720	800,000	144	146
GI3-8	2/28/2017	0.5	2.5	18.3	0.1	0	10	1603				101	103
GI3-16	2/28/2017	3.1	14.1	0.4	35.3	619	62	4565	140	4,000	841,000	142.5	144.5
GI3-25	2/28/2017	5.7	12.9	1.5	8.6	720	100	4345	290	2,860	847,000	157	158.5
GI3-30	2/28/2017	1.5	2	17.1	0.1	362	30	4286	180	1,280	804,000	154.5	156.5
GI3-37	2/28/2017	1	2.1	14.7	0.1	572	20	3551	250	1,210	814,000	144.5	146.5
GI4-9	2/28/2017	0.3	1.6	18.2	0.1	0	6	2491				91.5	93.5
GI4-14	2/28/2017	0.4	13.5	5.3	2.5	1	8	1992				109.5	111.5
GI4-19	2/28/2017	0.4	17.5	1.7	10.3	1	8	1572				31	103.5
GI4-24	2/28/2017	3.2	19.1	0.4	47.8	27	64	807				123	124.5
GI4-30	2/28/2017	3.5	18.7	0.2	93.5	38	70	1022				120	123.5
GI5-7	2/28/2017	0.3	0.6	20.5	0.0	0	6	1428				96	98
GI5-12	2/28/2017	0.4	4.6	15.6	0.3	3	8	1409				126.5	128
GI5-21	2/28/2017	1	7.5	7.3	1.0	563	20	3571	350	1,930	844,000	140.5	142
GI5-28	2/28/2017	3.1	12.1	0.7	17.3	896	62	4515	380	4,080	857,000	147.5	149.5
GI5-33	2/28/2017	2.9	11.3	2.5	4.5	744	58	4621	340	3,520	854,000	149.5	150
GI6-12	2/28/2017	0.2	1.4	19.2	0.1	4	4	496				104	108
GI6-22	2/28/2017	0.5	14.1	0.4	35.3	87	10	2671				141.5	144
GI6-25	2/28/2017	0.8	13.9	0.3	46.3	507	16	3103	160	4,010	840,000	147.5	149.5
GI6-29	2/28/2017	1	12.3	1.7	7.2	1231	20	3222	**750**	2,420	846,000	137.5	152
GI6-36	2/28/2017	1.1	13.6	0.5	27.2	284	22	3485	39	3,320	845,000	141.5	143
GI7-8	3/1/2017	0.3	1.3	19.8	0.1	0	6	865				77.5	81.5
GI7-17	3/1/2017	0.3	3.5	17	0.2	0	6	757				106	107
GI7-23	3/1/2017	0.3	4.5	15.4	0.3	37	6	1065				120	122.5
GI7-26	3/1/2017	0.6	2.9	15.1	0.2	147	12	1874	120	<1,000	810,000	126.5	128.5
GI7-29	3/1/2017	1	5.6	13.6	0.4	387	20	3149	300	<1,000	801,000	129.5	131.5
GI7-33	3/1/2017	0.8	3.4	13.1	0.3	418	16	2269	300	<1,000	824,000	133	134.5
GI8-13	3/1/2017	0.4	0.7	20.3	0.0	5	8	785				100.5	103
GI8-17	3/1/2017	0.4	2.5	18.2	0.1	6	8	653				116	117
GI8-26	3/1/2017	0.5	1.6	19.2	0.1	99	10	1525	74	<1,000	784,000	137.5	139
GI8-29	3/1/2017	1.2	2.2	18.4	0.1	237	24	3538	180	<1,000	787,000	139	141
GI8-32	3/1/2017	0.9	0.9	17.7	0.1	387	18	3149	300	<1,000	806,000	139	141
GI8-37	3/1/2017	1.2	4	15.2	0.3	560	24	4159	370	<1,000	801,000	135.5	136.5
GI9-19	2/28/2017	0.3	5	16.5	0.3	6	6	1215				108	109.5
GI9-25	2/28/2017	0.2	1	20.2	0.0	8	4	923				116	118
GI9-29	2/28/2017	0.2	1.7	19.3	0.1	23	4	900				122	123
GI9-34	2/28/2017	0.3	2.7	18	0.2	24	6	1068				127.5	129
GI9-39	2/28/2017	0.3	2.8	17.9	0.2	25	6	1070				124	126

Average	1.4	6.6	11.9	7.5	277	26	2510	278	2,658	821,667	125	130
Median	0.6	4.1	15.2	0.3	99	12	2176	280	2,640	819,000	128	132
Min	0.2	0.1	0.2	0.0	0	4	496	39	1,210	784,000	31	82
Max	8.2	19.1	21.5	93.5	1231	100	4963	750	4,080	857,000	157	161

Notes

* Sample collected on 2/8/17 was analyzed on 2/10/17 with concentration of 400 ppmv and on 2/27/17 with a concentration of 380 ppmv.

**Sample collected on 2/15/17 was analyzed on 2/16/17 with concentration of 5.2 ppmv and on 2/27/17 with a concentration of 5.4 ppmv.

1. CH4 Measurement may also include TNMO in vapor stream.
2. Temperature reported for the day sample was collected.
3. Samples associated with field issues are shown in gray.
4. Definitions:

CH_4 = Methane. CO = Carbon monoxide. CO_2 = Carbon dioxide. LEL = Lowest explosive limit.

O_2 = Oxygen. PID = Photoionization detector. ppmv = Parts per million volume.

Table F.1
Soil Gas Analytical Data

Sampling Location	Average Sample Date	Average Field Data CH_4 (%)	CO_2 (%)	O_2 (%)	CO_2/O_2 (-)	CO (ppmV)	LEL (%)	PID (ppm)	Average Laboratory CO ppmV	Hydrogen ppmV	Nitrogen ppmV	Average Temperature Min °F	Max °F
Averages of Sampling Events 3 and 4													
GI1-7	2/25/2017	0.4	0.2	21.2	0.0	1	8	1954				88	90
GI1-14	2/25/2017	0.4	2.4	17.75	0.1	2	8	1702				128.25	129.5
GI1-24	2/25/2017	0.6	5.3	14.9	0.4	527	12	1725	295		790,500	154.25	156
GI1-29	2/25/2017	3.0	12.3	5.8	2.1	819	60	4741	445		812,000	152	153.5
GI1-35	2/25/2017	6.3	12.1	5.8	2.1	894	100	5112	480		812,000	146	148
GI2-8	2/25/2017	0.5	5.8	14.6	0.4	7	10	2024				106.25	108.25
GI2-16	2/25/2017	1.4	13.1	2.9	5.0	347	28	4567	195		838,500	101.5	158
GI2-27	2/25/2017	2.8	12.2	2.7	4.9	525	56	7481	295		843,000	147.25	161.25
GI2-32	2/25/2017	5.8	4.2	11.8	0.4	470	84	6174	**280**	1,705	829,000	149.5	151.25
GI2-36	2/25/2017	1.7	1.3	17.4	0.1	413	33	4512	200	1,835	799,000	143.75	146
GI3-8	2/25/2017	0.5	1.5	19.6	0.1	0	9	2277				101.5	103.75
GI3-16	2/25/2017	2.9	14.3	0.4	41.6	568	57	4784	130	4,105	841,500	142.5	144.25
GI3-25	2/25/2017	4.5	13.3	0.9	27.1	691	82	4558	280	3,090	847,000	156.75	158.25
GI3-30	2/25/2017	1.6	2.4	15.8	0.2	418	32	4504	205	1,380	808,500	154	156
GI3-37	2/25/2017	1.1	2.9	12.8	0.2	644	22	3756	295	1,270	820,000	144.25	146.5
GI4-9	2/25/2017	0.3	1.6	19.3	0.1	0	6	1689				92.25	94
GI4-14	2/25/2017	0.4	13.9	5.8	2.4	1	8	1352				110	112
GI4-19	2/25/2017	0.4	17.4	2.0	8.9	2	8	1063				75.75	112.75
GI4-24	2/25/2017	3.0	19.1	0.8	32.5	24	59	745				123	124.5
GI4-30	2/25/2017	3.2	18.8	0.4	65.7	37	64	892				120.25	123.5
GI5-7	2/25/2017	0.3	0.7	20.2	0.0	1	6	1685				96.5	98.25
GI5-12	2/25/2017	0.4	4.6	15.6	0.3	4	7	1539				127.25	128.5
GI5-21	2/25/2017	1.2	8.0	6.5	1.3	486	23	3479	295	2,060	843,000	140.5	142
GI5-28	2/25/2017	3.1	12.6	0.5	30.3	749	61	4474	305	4,310	853,500	147.5	149.5
GI5-33	2/25/2017	2.8	12.3	1.4	24.3	656	55	4585	280	3,510	851,500	149.5	150.25
GI6-12	2/25/2017	0.3	1.4	19.4	0.1	4	5	454				104.75	108.25
GI6-22	2/25/2017	0.5	14.0	0.4	35.0	80	10	2960				141.25	143.5
GI6-25	2/25/2017	0.8	13.7	0.4	40.0	447	16	3357	160	3,960	842,000	147.25	149
GI6-29	2/25/2017	1.0	12.3	1.7	7.5	1189	20	3372	765	2,425	846,000	138	151.25
GI6-36	2/25/2017	1.0	13.5	0.5	27.0	246	20	3719	40.5	3,305	847,000	141.5	143
GI7-8	2/25/2017	0.4	1.4	20.1	0.1	0	7	433				77.75	82.25
GI7-17	2/25/2017	0.3	3.5	17.3	0.2	1	6	475				106.25	107.25
GI7-23	2/25/2017	0.3	4.7	15.3	0.3	45	6	804				120.25	122.75
GI7-26	2/25/2017	0.6	2.9	15.0	0.2	157	11	1507	120		814,000	126.5	128.5
GI7-29	2/25/2017	0.9	5.7	13.2	0.4	432	18	2997	320		806,500	129.5	131.5
GI7-33	2/25/2017	0.9	3.3	13.7	0.2	434	17	2266	285		819,500	77	134.25
GI8-13	2/25/2017	0.4	0.7	20.9	0.0	4	7	852				100.5	103
GI8-17	2/25/2017	0.35	2.55	18.5	0.1	8	7	608				116.25	117.25
GI8-26	2/25/2017	0.5	1.8	19.3	0.1	115	10	1427	77.5		785,000	137.25	139
GI8-29	2/25/2017	1.1	2.5	18.5	0.1	254	21	3668	190		787,000	138.75	141
GI8-32	2/25/2017	1.0	1.1	17.9	0.1	405	19	3530	300		805,500	139	140.75
GI8-37	2/25/2017	1.2	4.4	14.9	0.3	597	24	4173	385		802,500	135.25	136.5
GI9-19	2/25/2017	0.3	5.2	16.3	0.3	5	6	796				108.25	109.75
GI9-25	2/25/2017	0.3	1.3	19.9	0.1	8	5	616				116	118
GI9-29	2/25/2017	0.3	1.8	19.2	0.1	21	5	641				122	123.25
GI9-34	2/25/2017	0.3	2.7	18.1	0.1	22	6	797				127.5	129
GI9-39	2/25/2017	0.3	2.9	18.1	0.2	23	6	879				126.75	128.75

Notes

* Sample collected on 2/8/17 was analyzed on 2/10/17 with concentration of 400 ppmv and on 2/27/17 with a concentration of 380 ppmv.

**Sample collected on 2/15/17 was analyzed on 2/16/17 with concentration of 5.2 ppmv and on 2/27/17 with a concentration of 5.4 ppmv.

1. CH4 Measurement may also include TNMO in vapor stream.
2. Temperature reported for the day sample was collected.
3. Samples associated with field issues are shown in gray.
4. Definitions:

CH_4 = Methane. CO = Carbon monoxide. CO_2 = Carbon dioxide. LEL = Lowest explosive limit.
O_2 = Oxygen. PID = Photoionization detector. ppmv = Parts per million volume.

Table F.1
Soil Gas Analytical Data

Sampling Location	Sample Date	Laboratory CO ppmV	Laboratory Hydrogen ppmV	Laboratory Nitrogen ppmV
Sampling Event 1 - Duplicates				
Dup1-020717 (GI5-21)	2/7/2017	240	3850	856000
Dup2-020717 (GI3-37)	2/7/2017	620	2980	860000
Dup1-020817 (GI2-36)	2/8/2017	850	4660	837000
Dup2-020817 (GI8-26)	2/8/2017	96	<1,000	791000
Sampling Event 2 - Duplicates				
Dup1-021417 (GI6-25)	2/14/2017	<5.0	<1,000	778,000
Dup2-021417 (GI1-29)	2/14/2017	<5.0	<1,000	778,000
Dup1-021517 (GI7-26)	2/15/2017	32	<1,000	787,000
Dup2-021517 (GI2-32)	2/15/2017	8.2	<1,000	780,000
Sampling Event 3 - Duplicates				
Dup1-022117 (GI7-26)	2/21/2017	120	<1,000	818,000
Dup2-022117 (GI2-16)	2/21/2017	180	<1,000	842,000
Dup1-022217 (GI1-24)	2/22/2017	330	<1,000	791,000
Dup2-022217 (GI5-33)	2/22/2017	230	3,790	848,000
Sampling Event 4 - Duplicates				
Dup1-022817 (GI6-36)	2/28/2017	41	3,380	845,000
Dup2-022817 (GI3-25)	2/28/2017	290	2,980	847,000
Dup1-030117 (GI8-37)	3/1/2017	370	<1,000	801,000
Dup2-030117 (GI2-27)	3/1/2017	310	<1,000	842,000

Notes

* Sample collected on 2/8/17 was analyzed on 2/10/17 with concentration of 400 ppmv and on 2/27/17 with a concentration of 380 ppmv.

**Sample collected on 2/15/17 was analyzed on 2/16/17 with concentration of 5.2 ppmv and on 2/27/17 with a concentration of 5.4 ppmv.

1. CH4 Measurement may also include TNMO in vapor stream.

4. Definitions:

CH_4 = Methane. CO = Carbon monoxide. CO_2 = Carbon dioxide.

O_2 = Oxygen. ppmv = parts per million volume.

April 24, 2017

ZONE A COMBUSTION EVALUATION REPORT
PASCO SANITARY LANDFILL

Pasco Sanitary Landfill
Pasco, WA

Appendices

Appendix G: Autoignition Test VOC Data

Table G.1. GI Data from March 29, 2017
Pasco Sanitary Landfill

	Field Data									Laboratory Data				
Location	**Pressure (in w.c.)**	**Sample Time**	**Temp (ºF)**	**PID (ppmV)**	**CH_4 (%)**	**CO_2 (%)**	**O_2 (%)**	**CO (ppmV)**	**LEL (%)**	**CO (ppmV)**	**Hydrogen (ppmV)**	**Nitrogen (ppmV)**	**Total VOCs (µg/L)**	**Carbon Disulfide (µg/L)**
GI1-35	-0.63	1,230	146	9,999	7	11.5	6.1	1214	100	760	<0.10	816,000	18,413	1.4
GI2-27	-2.51	1,219	153	9,999	3	12.8	1.8	597	56	310	<0.10	846,000	14,118	0.3
GI2-32	-1.08	1,223	150.5	9,999	5	4.2	10.3	841	100	490	0.272	840,000	18,474	0.36
GI3-25	-0.91	1,208	156.5	5,153	7	13.4	0.3	795	100	480	0.311	852,000	17,452	ND
GI4-30	-0.76	1,138	122	768	3	18.8	0.2	15	60	6.4	<0.10	789,000	3,349	ND
GI5-28	-0.99	1,200	147	4,794	4	12.2	0.2	930	72	670	0.385	862,000	11,907	0.46
GI6-29	-0.77	1,150	152	3,079	1	13.3	0.9	1416	20	1,200	0.308	846,000	6,869	1.4
GI8-37	-0.71	1,240	135.5	4,894	1	3.2	14.7	1002	20	610	<0.10	810,000	7,868	0.35

Notes
1. Temperature measurements were collected from the corresponding TC at the time of sample collection. For example the thermocouple in the TC1-35 location was used for the temperature measurement in GI1-35. Data loggers were used to collect the temperature data. The data loggers were programmed for type T thermocouples and set to collect a temperature measurement every 15 minutes during the day.
2. Each GI was purged for 2 minutes before collecting data and Tedlar bag samples. One Tedlar bag went to ALS Everett for VOC 8260 analysis and the other Tedlar bag sample was shipped to ALS Simi Valley for CO, H2, and N2 analysis.
3. Definitions:

CH_4 = Methane. CO = Carbon monoxide. CO_2 = Carbon dioxide. LEL = Lowest explosive limit.

O_2 = Oxygen. PID = Photoionization detector. ppmv = Parts per million volume. µg/L = Micrograms per liter

in w.c = Inch water column.

April 5, 2017

Mr. Thom Morin
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

Dear Mr. Morin,

On March 30th, 2 samples were received by our laboratory and assigned our laboratory project number EV17030262. The project was identified as your 03916.3 Task 2.2. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS JOB#: ALS SAMPLE#:	4/5/2017 EV17030262 EV17030262-01
CLIENT CONTACT:	Thom Morin	DATE RECEIVED:	03/30/2017
CLIENT PROJECT:	03916.3 Task 2.2	COLLECTION DATE:	3/29/2017 12:23:00 PM
CLIENT SAMPLE ID	GI2-32-032917	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chloromethane	SW-846 8260C	**7.9**	0.20	1	UG/L	04/01/2017	DLC
Vinyl Chloride	SW-846 8260C	**1.3**	0.020	1	UG/L	04/01/2017	DLC
Bromomethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chloroethane	SW-846 8260C	**12**	0.20	1	UG/L	04/01/2017	DLC
Carbon Tetrachloride	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Trichlorofluoromethane	SW-846 8260C	**0.25**	0.20	1	UG/L	04/01/2017	DLC
Ethanol	SW-846 8260C	**1400**	20	1	UG/L	04/01/2017	DLC
Carbon Disulfide	SW-846 8260C	**0.36**	0.20	1	UG/L	04/01/2017	DLC
Acetone	SW-846 8260C	**3200**	1200	500	UG/L	03/31/2017	DLC
1,1-Dichloroethene	SW-846 8260C	**3.4**	0.20	1	UG/L	04/01/2017	DLC
Methylene Chloride	SW-846 8260C	**46**	5.0	10	UG/L	04/01/2017	DLC
Acrylonitrile	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC
Methyl tert-butyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
trans-1,2-Dichloroethene	SW-846 8260C	**0.87**	0.20	1	UG/L	04/01/2017	DLC
Isopropyl Ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Ethyl tert-butyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,1-Dichloroethane	SW-846 8260C	**64**	2.0	10	UG/L	04/01/2017	DLC
Methyl Ethyl Ketone	SW-846 8260C	**2600**	500	500	UG/L	03/31/2017	DLC
cis-1,2-Dichloroethene	SW-846 8260C	**13**	0.20	1	UG/L	04/01/2017	DLC
2,2-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromochloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chloroform	SW-846 8260C	**0.77**	0.20	1	UG/L	04/01/2017	DLC
1,1,1-Trichloroethane	SW-846 8260C	**9.8**	0.20	1	UG/L	04/01/2017	DLC
1,1-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichloroethane	SW-846 8260C	**3.5**	0.20	1	UG/L	04/01/2017	DLC
Benzene	SW-846 8260C	**7.9**	0.20	1	UG/L	04/01/2017	DLC
Trichloroethene	SW-846 8260C	**930**	100	500	UG/L	03/31/2017	DLC
tert-Amyl methyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
tert-Butyl Alcohol	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Dibromomethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromodichloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
trans-1,3-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
4-Methyl-2-pentanone	SW-846 8260C	**2400**	500	500	UG/L	03/31/2017	DLC
Toluene	SW-846 8260C	**3800**	200	1000	UG/L	03/31/2017	DLC
cis-1,3-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,1,2-Trichloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC

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ALS Group USA, Corp dba ALS Environmental

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CLIENT CONTACT:	Thom Morin	DATE RECEIVED:	03/30/2017
CLIENT PROJECT:	03916.3 Task 2.2	COLLECTION DATE:	3/29/2017 12:23:00 PM
CLIENT SAMPLE ID	GI2-32-032917	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2-Hexanone	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC
1,3-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Tetrachloroethene	SW-846 8260C	**51**	2.0	10	UG/L	04/01/2017	DLC
Dibromochloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dibromoethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chlorobenzene	SW-846 8260C	**1.5**	0.20	1	UG/L	04/01/2017	DLC
1,1,1,2-Tetrachloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Ethylbenzene	SW-846 8260C	**880**	100	500	UG/L	03/31/2017	DLC
m-&p-Xylenes	SW-846 8260C	**2300**	200	500	UG/L	03/31/2017	DLC
Styrene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
o-Xylene	SW-846 8260C	**550**	100	500	UG/L	03/31/2017	DLC
Bromoform	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Isopropylbenzene	SW-846 8260C	**16**	0.20	1	UG/L	04/01/2017	DLC
1,1,2,2-Tetrachloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2,3-Trichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
n-Propylbenzene	SW-846 8260C	**46**	2.0	10	UG/L	04/01/2017	DLC
2-Chlorotoluene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,3,5-Trimethylbenzene	SW-846 8260C	**50**	2.0	10	UG/L	04/01/2017	DLC
4-Chlorotoluene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
tert-Butylbenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2,4-Trimethylbenzene	SW-846 8260C	**73**	2.0	10	UG/L	04/01/2017	DLC
sec-Butylbenzene	SW-846 8260C	**1.1**	0.20	1	UG/L	04/01/2017	DLC
4-Isopropyltoluene	SW-846 8260C	**0.95**	0.20	1	UG/L	04/01/2017	DLC
1,3-Dichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,4-Dichlorobenzene	SW-846 8260C	**0.30**	0.20	1	UG/L	04/01/2017	DLC
n-Butylbenzene	SW-846 8260C	**0.87**	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichlorobenzene	SW-846 8260C	**2.3**	0.20	1	UG/L	04/01/2017	DLC
1,2-Dibromo-3-chloropropane	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC
1,2,4-Trichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Hexachlorobutadiene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Naphthalene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2,3-Trichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4 500X Dilution	SW-846 8260C	**102**	03/31/2017	DLC
1,2-Dichloroethane-d4 1000X Dilution	SW-846 8260C	**106**	03/31/2017	DLC
1,2-Dichloroethane-d4 10X Dilution	SW-846 8260C	**92.1**	04/01/2017	DLC

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CLIENT CONTACT:	Thom Morin	DATE RECEIVED:	03/30/2017
CLIENT PROJECT:	03916.3 Task 2.2	COLLECTION DATE:	3/29/2017 12:23:00 PM
CLIENT SAMPLE ID	GI2-32-032917	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	SW-846 8260C	**101**	04/01/2017	DLC
Toluene-d8 500X Dilution	SW-846 8260C	**91.6**	03/31/2017	DLC
Toluene-d8 1000X Dilution	SW-846 8260C	**98.4**	03/31/2017	DLC
Toluene-d8 10X Dilution	SW-846 8260C	**84.4**	04/01/2017	DLC
Toluene-d8	SW-846 8260C	**91.7**	04/01/2017	DLC
4-Bromofluorobenzene 500X Dilution	SW-846 8260C	**99.0**	03/31/2017	DLC
4-Bromofluorobenzene 1000X Dilution	SW-846 8260C	**101**	03/31/2017	DLC
4-Bromofluorobenzene 10X Dilution	SW-846 8260C	**95.5**	04/01/2017	DLC
4-Bromofluorobenzene	SW-846 8260C	**74.9**	04/01/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS JOB#: ALS SAMPLE#:	4/5/2017 EV17030262 EV17030262-02
CLIENT CONTACT:	Thom Morin	DATE RECEIVED:	03/30/2017
CLIENT PROJECT:	03916.3 Task 2.2	COLLECTION DATE:	3/29/2017 12:08:00 PM
CLIENT SAMPLE ID	GI3-25-032917	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chloromethane	SW-846 8260C	**16**	0.20	1	UG/L	04/01/2017	DLC
Vinyl Chloride	SW-846 8260C	**0.80**	0.020	1	UG/L	04/01/2017	DLC
Bromomethane	SW-846 8260C	**0.22**	0.20	1	UG/L	04/01/2017	DLC
Chloroethane	SW-846 8260C	**32**	2.0	10	UG/L	04/01/2017	DLC
Carbon Tetrachloride	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Trichlorofluoromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Ethanol	SW-846 8260C	**1400**	20	1	UG/L	04/01/2017	DLC
Carbon Disulfide	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Acetone	SW-846 8260C	**1700**	1200	500	UG/L	03/31/2017	DLC
1,1-Dichloroethene	SW-846 8260C	**2.5**	0.20	1	UG/L	04/01/2017	DLC
Methylene Chloride	SW-846 8260C	**32**	5.0	10	UG/L	04/01/2017	DLC
Acrylonitrile	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC
Methyl tert-butyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
trans-1,2-Dichloroethene	SW-846 8260C	**0.59**	0.20	1	UG/L	04/01/2017	DLC
Isopropyl Ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Ethyl tert-butyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,1-Dichloroethane	SW-846 8260C	**40**	2.0	10	UG/L	04/01/2017	DLC
Methyl Ethyl Ketone	SW-846 8260C	**2300**	500	500	UG/L	03/31/2017	DLC
cis-1,2-Dichloroethene	SW-846 8260C	**37**	2.0	10	UG/L	04/01/2017	DLC
2,2-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromochloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chloroform	SW-846 8260C	**0.54**	0.20	1	UG/L	04/01/2017	DLC
1,1,1-Trichloroethane	SW-846 8260C	**0.62**	0.20	1	UG/L	04/01/2017	DLC
1,1-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichloroethane	SW-846 8260C	**29**	2.0	10	UG/L	04/01/2017	DLC
Benzene	SW-846 8260C	**9.9**	0.20	1	UG/L	04/01/2017	DLC
Trichloroethene	SW-846 8260C	**480**	20	100	UG/L	03/30/2017	DLC
tert-Amyl methyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
tert-Butyl Alcohol	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Dibromomethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromodichloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
trans-1,3-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
4-Methyl-2-pentanone	SW-846 8260C	**1100**	500	500	UG/L	03/31/2017	DLC
Toluene	SW-846 8260C	**5400**	100	500	UG/L	03/31/2017	DLC
cis-1,3-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,1,2-Trichloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
2-Hexanone	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC

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ALS Group USA, Corp dba ALS Environmental

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CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS JOB#: ALS SAMPLE#:	4/5/2017 EV17030262 EV17030262-02
CLIENT CONTACT:	Thom Morin	DATE RECEIVED:	03/30/2017
CLIENT PROJECT:	03916.3 Task 2.2	COLLECTION DATE:	3/29/2017 12:08:00 PM
CLIENT SAMPLE ID	GI3-25-032917	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,3-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Tetrachloroethene	SW-846 8260C	**15**	0.20	1	UG/L	04/01/2017	DLC
Dibromochloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dibromoethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chlorobenzene	SW-846 8260C	**1.1**	0.20	1	UG/L	04/01/2017	DLC
1,1,1,2-Tetrachloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Ethylbenzene	SW-846 8260C	**1000**	20	100	UG/L	03/30/2017	DLC
m-&p-Xylenes	SW-846 8260C	**3000**	40	100	UG/L	03/30/2017	DLC
Styrene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
o-Xylene	SW-846 8260C	**710**	20	100	UG/L	03/30/2017	DLC
Bromoform	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Isopropylbenzene	SW-846 8260C	**11**	0.20	1	UG/L	04/01/2017	DLC
1,1,2,2-Tetrachloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2,3-Trichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
n-Propylbenzene	SW-846 8260C	**33**	2.0	10	UG/L	04/01/2017	DLC
2-Chlorotoluene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,3,5-Trimethylbenzene	SW-846 8260C	**38**	2.0	10	UG/L	04/01/2017	DLC
4-Chlorotoluene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
tert-Butylbenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2,4-Trimethylbenzene	SW-846 8260C	**58**	2.0	10	UG/L	04/01/2017	DLC
sec-Butylbenzene	SW-846 8260C	**1.2**	0.20	1	UG/L	04/01/2017	DLC
4-Isopropyltoluene	SW-846 8260C	**1.1**	0.20	1	UG/L	04/01/2017	DLC
1,3-Dichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,4-Dichlorobenzene	SW-846 8260C	**0.24**	0.20	1	UG/L	04/01/2017	DLC
n-Butylbenzene	SW-846 8260C	**0.86**	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichlorobenzene	SW-846 8260C	**1.4**	0.20	1	UG/L	04/01/2017	DLC
1,2-Dibromo-3-chloropropane	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC
1,2,4-Trichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Hexachlorobutadiene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Naphthalene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2,3-Trichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4 100X Dilution	SW-846 8260C	**107**	03/30/2017	DLC
1,2-Dichloroethane-d4 500X Dilution	SW-846 8260C	**99.5**	03/31/2017	DLC
1,2-Dichloroethane-d4 10X Dilution	SW-846 8260C	**89.7**	04/01/2017	DLC
1,2-Dichloroethane-d4	SW-846 8260C	**98.5**	04/01/2017	DLC

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS JOB#: ALS SAMPLE#:	4/5/2017 EV17030262 EV17030262-02
CLIENT CONTACT:	Thom Morin	DATE RECEIVED:	03/30/2017
CLIENT PROJECT:	03916.3 Task 2.2	COLLECTION DATE:	3/29/2017 12:08:00 PM
CLIENT SAMPLE ID	GI3-25-032917	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Toluene-d8 100X Dilution	SW-846 8260C	**88.3**	03/30/2017	DLC
Toluene-d8 500X Dilution	SW-846 8260C	**98.0**	03/31/2017	DLC
Toluene-d8 10X Dilution	SW-846 8260C	**83.4**	04/01/2017	DLC
Toluene-d8	SW-846 8260C	**95.4**	04/01/2017	DLC
4-Bromofluorobenzene 100X Dilution	SW-846 8260C	**97.0**	03/30/2017	DLC
4-Bromofluorobenzene 500X Dilution	SW-846 8260C	**99.9**	03/31/2017	DLC
4-Bromofluorobenzene 10X Dilution	SW-846 8260C	**95.8**	04/01/2017	DLC
4-Bromofluorobenzene	SW-846 8260C	**79.2**	04/01/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS SDG#: WDOE ACCREDITATION:	4/5/2017 EV17030262 C601
CLIENT CONTACT:	Thom Morin		
CLIENT PROJECT:	03916.3 Task 2.2		

LABORATORY BLANK RESULTS

MB-033017A - Batch 114939 - Air by SW-846 8260C

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Chloromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Vinyl Chloride	SW-846 8260C	U	UG/L	0.020	03/30/2017	DLC
Bromomethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Chloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Carbon Tetrachloride	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Trichlorofluoromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Ethanol	SW-846 8260C	U	UG/L	20	03/30/2017	DLC
Carbon Disulfide	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Acetone	SW-846 8260C	U	UG/L	2.5	03/30/2017	DLC
1,1-Dichloroethene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Methylene Chloride	SW-846 8260C	U	UG/L	0.50	03/30/2017	DLC
Acrylonitrile	SW-846 8260C	U	UG/L	1.0	03/30/2017	DLC
Methyl tert-butyl ether	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
trans-1,2-Dichloroethene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Isopropyl Ether	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Ethyl tert-butyl ether	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1-Dichloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Methyl Ethyl Ketone	SW-846 8260C	U	UG/L	1.0	03/30/2017	DLC
cis-1,2-Dichloroethene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
2,2-Dichloropropane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Bromochloromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Chloroform	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1,1-Trichloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1-Dichloropropene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2-Dichloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Benzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Trichloroethene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
tert-Amyl methyl ether	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
tert-Butyl Alcohol	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2-Dichloropropane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Dibromomethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Bromodichloromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
trans-1,3-Dichloropropene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
4-Methyl-2-pentanone	SW-846 8260C	U	UG/L	1.0	03/30/2017	DLC
Toluene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
cis-1,3-Dichloropropene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1,2-Trichloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
2-Hexanone	SW-846 8260C	U	UG/L	1.0	03/30/2017	DLC

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CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS SDG#: WDOE ACCREDITATION:	4/5/2017 EV17030262 C601
CLIENT CONTACT:	Thom Morin		
CLIENT PROJECT:	03916.3 Task 2.2		

LABORATORY BLANK RESULTS

MB-033017A - Batch 114939 - Air by SW-846 8260C

1,3-Dichloropropane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Tetrachloroethene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Dibromochloromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2-Dibromoethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Chlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1,1,2-Tetrachloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Ethylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
m-&p-Xylenes	SW-846 8260C	U	UG/L	0.40	03/30/2017	DLC
Styrene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
o-Xylene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Bromoform	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Isopropylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1,2,2-Tetrachloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2,3-Trichloropropane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Bromobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
n-Propylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
2-Chlorotoluene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,3,5-Trimethylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
4-Chlorotoluene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
tert-Butylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2,4-Trimethylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
sec-Butylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
4-Isopropyltoluene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,3-Dichlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,4-Dichlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
n-Butylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2-Dichlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2-Dibromo-3-chloropropane	SW-846 8260C	U	UG/L	1.0	03/30/2017	DLC
1,2,4-Trichlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Hexachlorobutadiene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Naphthalene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2,3-Trichlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS SDG#: WDOE ACCREDITATION:	4/5/2017 EV17030262 C601
CLIENT CONTACT:	Thom Morin		
CLIENT PROJECT:	03916.3 Task 2.2		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 114939 - Air by SW-846 8260C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	SW-846 8260C	**89.2**			75	135	03/30/2017	DLC
1,1-Dichloroethene - BSD	SW-846 8260C	**90.2**	**1**		75	135	03/30/2017	DLC
Benzene - BS	SW-846 8260C	**90.4**			75.1	135	03/30/2017	DLC
Benzene - BSD	SW-846 8260C	**92.0**	**2**		75.1	135	03/30/2017	DLC
Trichloroethene - BS	SW-846 8260C	**87.6**			80.8	136	03/30/2017	DLC
Trichloroethene - BSD	SW-846 8260C	**89.8**	**3**		80.8	136	03/30/2017	DLC
Toluene - BS	SW-846 8260C	**96.7**			67.3	128.9	03/30/2017	DLC
Toluene - BSD	SW-846 8260C	**98.9**	**2**		67.3	128.9	03/30/2017	DLC
Chlorobenzene - BS	SW-846 8260C	**100**			73.7	130	03/30/2017	DLC
Chlorobenzene - BSD	SW-846 8260C	**101**	**1**		73.7	130	03/30/2017	DLC

APPROVED BY

Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

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ALS Laboratory Group
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
(206) 292-9059 Seattle
(425) 356-2626 Fax
http://www.alsenviro.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV17030262

Date 03/29/17 Page 1 Of 1

PROJECT ID: 03916.3 Task 2.2
REPORT TO COMPANY: epi
PROJECT MANAGER: Thom Morin
ADDRESS: 1180 NW Maple St, Suite 310, Issaquah, WA 98027
PHONE: 425 395-0010 FAX:
P.O. NUMBER: 03916.3 Task 2.2 E-MAIL: Thomm@epi-wa.com
INVOICE TO COMPANY: IWAG Group III
ATTENTION: PBS
ADDRESS: 400 Bradley Blvd, Suite 300, Richland, WA 99352

ANALYSIS REQUESTED

	SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☐	PCB ☐ Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 ☐ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1	GI2-32-032917	03/29/17	1223	Air	1							X										1	
2	GI3-25-032917	03/29/17	1208	Air	2							X										1	
3.																							
4.																							
5.																							
6.																							
7.																							
8.																							
9.																							
10.																							

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):
1. Relinquished By: [signature], epi, 03/29/17, 1630 hrs
Received By: Shipped Fed Ex 7787 6655 4838, 03/29/17, 1630hrs
2. Relinquished By:
Received By: Shawn [signature] ALS 3/30/17 9:45 am

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: 10 (Standard) / (5) / 3 / 2 / 1 / SAME DAY

Fuels & Hydrocarbon Analysis: 5 (Standard) / 3 / 1 / SAME DAY

OTHER:
Specify:

* Turnaround request less than standard may incur Rush Charges

LABORATORY COPY

April 5, 2017

Mr. Thom Morin
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

Dear Mr. Morin,

On March 30th, 2 samples were received by our laboratory and assigned our laboratory project number EV17030263. The project was identified as your 03916.3 Task 2.2. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS JOB#: ALS SAMPLE#:	4/5/2017 EV17030263 EV17030263-01
CLIENT CONTACT:	Thom Morin	DATE RECEIVED:	03/30/2017
CLIENT PROJECT:	03916.3 Task 2.2	COLLECTION DATE:	3/29/2017 12:30:00 PM
CLIENT SAMPLE ID	GI1-35-032917	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chloromethane	SW-846 8260C	**1.6**	0.20	1	UG/L	04/01/2017	DLC
Vinyl Chloride	SW-846 8260C	**0.89**	0.020	1	UG/L	04/01/2017	DLC
Bromomethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chloroethane	SW-846 8260C	**3.4**	0.20	1	UG/L	04/01/2017	DLC
Carbon Tetrachloride	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Trichlorofluoromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Ethanol	SW-846 8260C	**1200**	20	1	UG/L	04/01/2017	DLC
Carbon Disulfide	SW-846 8260C	**1.4**	0.20	1	UG/L	04/01/2017	DLC
Acetone	SW-846 8260C	**3400**	1200	500	UG/L	03/31/2017	DLC
1,1-Dichloroethene	SW-846 8260C	**9.9**	0.20	1	UG/L	04/01/2017	DLC
Acrylonitrile	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC
Methyl tert-butyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
trans-1,2-Dichloroethene	SW-846 8260C	**2.2**	0.20	1	UG/L	04/01/2017	DLC
Isopropyl Ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Ethyl tert-butyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Methyl Ethyl Ketone	SW-846 8260C	**1700**	500	500	UG/L	03/31/2017	DLC
2,2-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromochloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chloroform	SW-846 8260C	**0.69**	0.20	1	UG/L	04/01/2017	DLC
1,1,1-Trichloroethane	SW-846 8260C	**1.4**	0.20	1	UG/L	04/01/2017	DLC
1,1-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichloroethane	SW-846 8260C	**3.9**	0.20	1	UG/L	04/01/2017	DLC
Benzene	SW-846 8260C	**10**	0.20	1	UG/L	04/01/2017	DLC
Trichloroethene	SW-846 8260C	**1500**	100	500	UG/L	03/31/2017	DLC
tert-Amyl methyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
tert-Butyl Alcohol	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Dibromomethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromodichloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
trans-1,3-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
4-Methyl-2-pentanone	SW-846 8260C	**1700**	500	500	UG/L	03/31/2017	DLC
Toluene	SW-846 8260C	**6100**	100	500	UG/L	03/31/2017	DLC
cis-1,3-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,1,2-Trichloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
2-Hexanone	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC
1,3-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Tetrachloroethene	SW-846 8260C	**270**	100	500	UG/L	03/31/2017	DLC

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ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS JOB#: ALS SAMPLE#:	4/5/2017 EV17030263 EV17030263-01
CLIENT CONTACT:	Thom Morin	DATE RECEIVED:	03/30/2017
CLIENT PROJECT:	03916.3 Task 2.2	COLLECTION DATE:	3/29/2017 12:30:00 PM
CLIENT SAMPLE ID	GI1-35-032917	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dibromochloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dibromoethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chlorobenzene	SW-846 8260C	**1.6**	0.20	1	UG/L	04/01/2017	DLC
1,1,1,2-Tetrachloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Ethylbenzene	SW-846 8260C	**570**	100	500	UG/L	03/31/2017	DLC
m-&p-Xylenes	SW-846 8260C	**1600**	200	500	UG/L	03/31/2017	DLC
Styrene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
o-Xylene	SW-846 8260C	**330**	100	500	UG/L	03/31/2017	DLC
Bromoform	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,1,2,2-Tetrachloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2,3-Trichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
2-Chlorotoluene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
4-Chlorotoluene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
tert-Butylbenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
sec-Butylbenzene	SW-846 8260C	**1.3**	0.20	1	UG/L	04/01/2017	DLC
4-Isopropyltoluene	SW-846 8260C	**0.98**	0.20	1	UG/L	04/01/2017	DLC
1,3-Dichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,4-Dichlorobenzene	SW-846 8260C	**0.31**	0.20	1	UG/L	04/01/2017	DLC
n-Butylbenzene	SW-846 8260C	**0.91**	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichlorobenzene	SW-846 8260C	**2.5**	0.20	1	UG/L	04/01/2017	DLC
1,2-Dibromo-3-chloropropane	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC
1,2,4-Trichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Hexachlorobutadiene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Naphthalene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2,3-Trichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4 500X Dilution	SW-846 8260C	**103**	03/31/2017	DLC
1,2-Dichloroethane-d4	SW-846 8260C	**101**	04/01/2017	DLC
Toluene-d8 500X Dilution	SW-846 8260C	**96.5**	03/31/2017	DLC
Toluene-d8	SW-846 8260C	**97.1**	04/01/2017	DLC
4-Bromofluorobenzene 500X Dilution	SW-846 8260C	**101**	03/31/2017	DLC
4-Bromofluorobenzene	SW-846 8260C	**73.8**	04/01/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS JOB#: ALS SAMPLE#:	4/5/2017 EV17030263 EV17030263-02
CLIENT CONTACT:	Thom Morin	DATE RECEIVED:	03/30/2017
CLIENT PROJECT:	03916.3 Task 2.2	COLLECTION DATE:	3/29/2017 12:19:00 PM
CLIENT SAMPLE ID	GI2-27-032917	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chloromethane	SW-846 8260C	**3.0**	0.20	1	UG/L	04/01/2017	DLC
Vinyl Chloride	SW-846 8260C	**0.56**	0.020	1	UG/L	04/01/2017	DLC
Bromomethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chloroethane	SW-846 8260C	**9.3**	0.20	1	UG/L	04/01/2017	DLC
Carbon Tetrachloride	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Trichlorofluoromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Ethanol	SW-846 8260C	**160**	20	1	UG/L	04/01/2017	DLC
Carbon Disulfide	SW-846 8260C	**0.26**	0.20	1	UG/L	04/01/2017	DLC
Acetone	SW-846 8260C	**3600**	1200	500	UG/L	03/31/2017	DLC
1,1-Dichloroethene	SW-846 8260C	**3.3**	0.20	1	UG/L	04/01/2017	DLC
Methylene Chloride	SW-846 8260C	**38 E**	0.50	1	UG/L	04/01/2017	DLC
Acrylonitrile	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC
Methyl tert-butyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
trans-1,2-Dichloroethene	SW-846 8260C	**0.37**	0.20	1	UG/L	04/01/2017	DLC
Isopropyl Ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Ethyl tert-butyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,1-Dichloroethane	SW-846 8260C	**40**	2.0	10	UG/L	03/31/2017	DLC
Methyl Ethyl Ketone	SW-846 8260C	**1600**	500	500	UG/L	03/31/2017	DLC
cis-1,2-Dichloroethene	SW-846 8260C	**8.1**	0.20	1	UG/L	04/01/2017	DLC
2,2-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromochloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chloroform	SW-846 8260C	**1.0**	0.20	1	UG/L	04/01/2017	DLC
1,1,1-Trichloroethane	SW-846 8260C	**14**	0.20	1	UG/L	04/01/2017	DLC
1,1-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichloroethane	SW-846 8260C	**4.1**	0.20	1	UG/L	04/01/2017	DLC
Benzene	SW-846 8260C	**8.4**	0.20	1	UG/L	04/01/2017	DLC
Trichloroethene	SW-846 8260C	**370**	100	500	UG/L	03/31/2017	DLC
tert-Amyl methyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
tert-Butyl Alcohol	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Dibromomethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromodichloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
trans-1,3-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
4-Methyl-2-pentanone	SW-846 8260C	**1300**	500	500	UG/L	03/31/2017	DLC
Toluene	SW-846 8260C	**4600**	100	500	UG/L	03/31/2017	DLC
cis-1,3-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,1,2-Trichloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
2-Hexanone	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC

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CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE:	4/5/2017
		ALS JOB#:	EV17030263
		ALS SAMPLE#:	EV17030263-02
CLIENT CONTACT:	Thom Morin	DATE RECEIVED:	03/30/2017
CLIENT PROJECT:	03916.3 Task 2.2	COLLECTION DATE:	3/29/2017 12:19:00 PM
CLIENT SAMPLE ID	GI2-27-032917	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,3-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Tetrachloroethene	SW-846 8260C	**26**	2.0	10	UG/L	03/31/2017	DLC
Dibromochloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dibromoethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chlorobenzene	SW-846 8260C	**0.96**	0.20	1	UG/L	04/01/2017	DLC
1,1,1,2-Tetrachloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Ethylbenzene	SW-846 8260C	**530**	100	500	UG/L	03/31/2017	DLC
m-&p-Xylenes	SW-846 8260C	**1400**	200	500	UG/L	03/31/2017	DLC
Styrene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
o-Xylene	SW-846 8260C	**330**	100	500	UG/L	03/31/2017	DLC
Bromoform	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Isopropylbenzene	SW-846 8260C	**10**	0.20	1	UG/L	04/01/2017	DLC
1,1,2,2-Tetrachloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2,3-Trichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
n-Propylbenzene	SW-846 8260C	**16**	0.20	1	UG/L	04/01/2017	DLC
2-Chlorotoluene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,3,5-Trimethylbenzene	SW-846 8260C	**31**	2.0	10	UG/L	03/31/2017	DLC
4-Chlorotoluene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
tert-Butylbenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2,4-Trimethylbenzene	SW-846 8260C	**48**	2.0	10	UG/L	03/31/2017	DLC
sec-Butylbenzene	SW-846 8260C	**0.87**	0.20	1	UG/L	04/01/2017	DLC
4-Isopropyltoluene	SW-846 8260C	**0.78**	0.20	1	UG/L	04/01/2017	DLC
1,3-Dichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,4-Dichlorobenzene	SW-846 8260C	**0.23**	0.20	1	UG/L	04/01/2017	DLC
n-Butylbenzene	SW-846 8260C	**0.65**	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichlorobenzene	SW-846 8260C	**1.5**	0.20	1	UG/L	04/01/2017	DLC
1,2-Dibromo-3-chloropropane	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC
1,2,4-Trichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Hexachlorobutadiene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Naphthalene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2,3-Trichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4 10X Dilution	SW-846 8260C	**99.1**	03/31/2017	DLC
1,2-Dichloroethane-d4 500X Dilution	SW-846 8260C	**103**	03/31/2017	DLC
1,2-Dichloroethane-d4	SW-846 8260C	**91.4**	04/01/2017	DLC
Toluene-d8 10X Dilution	SW-846 8260C	**85.0**	03/31/2017	DLC

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CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS JOB#: ALS SAMPLE#:	4/5/2017 EV17030263 EV17030263-02
CLIENT CONTACT:	Thom Morin	DATE RECEIVED:	03/30/2017
CLIENT PROJECT:	03916.3 Task 2.2	COLLECTION DATE:	3/29/2017 12:19:00 PM
CLIENT SAMPLE ID	GI2-27-032917	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Toluene-d8 500X Dilution	SW-846 8260C	**96.3**	03/31/2017	DLC
Toluene-d8	SW-846 8260C	**88.5**	04/01/2017	DLC
4-Bromofluorobenzene 10X Dilution	SW-846 8260C	**95.5**	03/31/2017	DLC
4-Bromofluorobenzene 500X Dilution	SW-846 8260C	**103**	03/31/2017	DLC
4-Bromofluorobenzene	SW-846 8260C	**81.1**	04/01/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.
E - Reported result is an estimate because it exceeds the calibration range.

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CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS SDG#: WDOE ACCREDITATION:	4/5/2017 EV17030263 C601
CLIENT CONTACT:	Thom Morin		
CLIENT PROJECT:	03916.3 Task 2.2		

LABORATORY BLANK RESULTS

MB-033017A - Batch 114939 - Air by SW-846 8260C

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Chloromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Vinyl Chloride	SW-846 8260C	U	UG/L	0.020	03/30/2017	DLC
Bromomethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Chloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Carbon Tetrachloride	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Trichlorofluoromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Ethanol	SW-846 8260C	U	UG/L	20	03/30/2017	DLC
Carbon Disulfide	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Acetone	SW-846 8260C	U	UG/L	2.5	03/30/2017	DLC
1,1-Dichloroethene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Methylene Chloride	SW-846 8260C	U	UG/L	0.50	03/30/2017	DLC
Acrylonitrile	SW-846 8260C	U	UG/L	1.0	03/30/2017	DLC
Methyl tert-butyl ether	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
trans-1,2-Dichloroethene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Isopropyl Ether	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Ethyl tert-butyl ether	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1-Dichloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Methyl Ethyl Ketone	SW-846 8260C	U	UG/L	1.0	03/30/2017	DLC
cis-1,2-Dichloroethene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
2,2-Dichloropropane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Bromochloromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Chloroform	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1,1-Trichloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1-Dichloropropene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2-Dichloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Benzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Trichloroethene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
tert-Amyl methyl ether	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
tert-Butyl Alcohol	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2-Dichloropropane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Dibromomethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Bromodichloromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
trans-1,3-Dichloropropene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
4-Methyl-2-pentanone	SW-846 8260C	U	UG/L	1.0	03/30/2017	DLC
Toluene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
cis-1,3-Dichloropropene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1,2-Trichloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
2-Hexanone	SW-846 8260C	U	UG/L	1.0	03/30/2017	DLC

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CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS SDG#: WDOE ACCREDITATION:	4/5/2017 EV17030263 C601
CLIENT CONTACT:	Thom Morin		
CLIENT PROJECT:	03916.3 Task 2.2		

LABORATORY BLANK RESULTS

MB-033017A - Batch 114939 - Air by SW-846 8260C

1,3-Dichloropropane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Tetrachloroethene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Dibromochloromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2-Dibromoethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Chlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1,1,2-Tetrachloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Ethylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
m-&p-Xylenes	SW-846 8260C	U	UG/L	0.40	03/30/2017	DLC
Styrene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
o-Xylene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Bromoform	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Isopropylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1,2,2-Tetrachloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2,3-Trichloropropane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Bromobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
n-Propylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
2-Chlorotoluene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,3,5-Trimethylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
4-Chlorotoluene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
tert-Butylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2,4-Trimethylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
sec-Butylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
4-Isopropyltoluene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,3-Dichlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,4-Dichlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
n-Butylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2-Dichlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2-Dibromo-3-chloropropane	SW-846 8260C	U	UG/L	1.0	03/30/2017	DLC
1,2,4-Trichlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Hexachlorobutadiene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Naphthalene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2,3-Trichlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS SDG#: WDOE ACCREDITATION:	4/5/2017 EV17030263 C601
CLIENT CONTACT:	Thom Morin		
CLIENT PROJECT:	03916.3 Task 2.2		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 114939 - Air by SW-846 8260C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	SW-846 8260C	**89.2**			75	135	03/30/2017	DLC
1,1-Dichloroethene - BSD	SW-846 8260C	**90.2**	**1**		75	135	03/30/2017	DLC
Benzene - BS	SW-846 8260C	**90.4**			75.1	135	03/30/2017	DLC
Benzene - BSD	SW-846 8260C	**92.0**	**2**		75.1	135	03/30/2017	DLC
Trichloroethene - BS	SW-846 8260C	**87.6**			80.8	136	03/30/2017	DLC
Trichloroethene - BSD	SW-846 8260C	**89.8**	**3**		80.8	136	03/30/2017	DLC
Toluene - BS	SW-846 8260C	**96.7**			67.3	128.9	03/30/2017	DLC
Toluene - BSD	SW-846 8260C	**98.9**	**2**		67.3	128.9	03/30/2017	DLC
Chlorobenzene - BS	SW-846 8260C	**100**			73.7	130	03/30/2017	DLC
Chlorobenzene - BSD	SW-846 8260C	**101**	**1**		73.7	130	03/30/2017	DLC

APPROVED BY

Laboratory Director

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Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV17030263

Date 03/29/17 Page 1 Of 1

PROJECT ID: 03916.3 Task 2.2
REPORT TO COMPANY: epi
PROJECT MANAGER: Thom Morin
ADDRESS: 1180 NW Maple St. Suite 310
Issaquah, WA 98027
PHONE: 425 395-0010 FAX:
P.O. #: 03916.3 Task 2.2 E-MAIL:
INVOICE TO COMPANY: IWAG III
ATTENTION: PBS
ADDRESS: 400 Bradley Blvd., Suite 300
Richland, WA 99352

ANALYSIS REQUESTED / OTHER (Specify)

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☐	PCB ☐ Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 ☐ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. GI1-35-032917	03/29/17	1230	Air	1							X																1	
2. GI2-27-032917	03/29/17	1219	Air	2							X																1	
3.																												
4.																												
5.																												
6.																												
7.																												
8.																												
9.																												
10.																												

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):
1. Relinquished By: [signature], epi, 03/29/17, 1630 hrs
Received By: Shipped FedEx 7787 6655 2879, 03/29/17, 1630 hrs
2. Relinquished By: Shawn [signature] ALS 3/30/17 9:45 am
Received By:

TURNAROUND REQUESTED in Business Days*
Organic, Metals & Inorganic Analysis: 10 (Standard) / 5 (circled) / 3 / 2 / 1 / SAME DAY
Fuels & Hydrocarbon Analysis: 5 (Standard) / 3 / 1 / SAME DAY
OTHER:
Specify:

April 5, 2017

Mr. Thom Morin
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

Dear Mr. Morin,

On March 30th, 2 samples were received by our laboratory and assigned our laboratory project number EV17030264. The project was identified as your 03916.3 . The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS JOB#: ALS SAMPLE#:	4/5/2017 EV17030264 EV17030264-01
CLIENT CONTACT:	Thom Morin	DATE RECEIVED:	03/30/2017
CLIENT PROJECT:	03916.3	COLLECTION DATE:	3/29/2017 11:38:00 AM
CLIENT SAMPLE ID	GI4-30-032917	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	SW-846 8260C	**0.27**	0.20	1	UG/L	04/01/2017	DLC
Chloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Vinyl Chloride	SW-846 8260C	**0.75**	0.020	1	UG/L	04/01/2017	DLC
Bromomethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Carbon Tetrachloride	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Trichlorofluoromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Ethanol	SW-846 8260C	**67**	20	1	UG/L	04/01/2017	DLC
Carbon Disulfide	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Acetone	SW-846 8260C	**450**	250	100	UG/L	03/31/2017	DLC
1,1-Dichloroethene	SW-846 8260C	**0.26**	0.20	1	UG/L	04/01/2017	DLC
Methylene Chloride	SW-846 8260C	**3.4**	0.50	1	UG/L	04/01/2017	DLC
Acrylonitrile	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC
Methyl tert-butyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
trans-1,2-Dichloroethene	SW-846 8260C	**0.20**	0.20	1	UG/L	04/01/2017	DLC
Isopropyl Ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Ethyl tert-butyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,1-Dichloroethane	SW-846 8260C	**2.6**	0.20	1	UG/L	04/01/2017	DLC
Methyl Ethyl Ketone	SW-846 8260C	**260**	100	100	UG/L	03/31/2017	DLC
cis-1,2-Dichloroethene	SW-846 8260C	**4.4**	0.20	1	UG/L	04/01/2017	DLC
2,2-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromochloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chloroform	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,1,1-Trichloroethane	SW-846 8260C	**0.33**	0.20	1	UG/L	04/01/2017	DLC
1,1-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichloroethane	SW-846 8260C	**0.87**	0.20	1	UG/L	04/01/2017	DLC
Benzene	SW-846 8260C	**3.6**	0.20	1	UG/L	04/01/2017	DLC
Trichloroethene	SW-846 8260C	**32**	2.0	10	UG/L	03/31/2017	DLC
tert-Amyl methyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
tert-Butyl Alcohol	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Dibromomethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromodichloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
trans-1,3-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
4-Methyl-2-pentanone	SW-846 8260C	**330**	100	100	UG/L	03/31/2017	DLC
Toluene	SW-846 8260C	**930**	20	100	UG/L	03/31/2017	DLC
cis-1,3-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,1,2-Trichloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC

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ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS JOB#: ALS SAMPLE#:	4/5/2017 EV17030264 EV17030264-01
CLIENT CONTACT:	Thom Morin	DATE RECEIVED:	03/30/2017
CLIENT PROJECT:	03916.3	COLLECTION DATE:	3/29/2017 11:38:00 AM
CLIENT SAMPLE ID	GI4-30-032917	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2-Hexanone	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC
1,3-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Tetrachloroethene	SW-846 8260C	**5.8**	0.20	1	UG/L	04/01/2017	DLC
Dibromochloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dibromoethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chlorobenzene	SW-846 8260C	**0.40**	0.20	1	UG/L	04/01/2017	DLC
1,1,1,2-Tetrachloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Ethylbenzene	SW-846 8260C	**130**	2.0	10	UG/L	03/31/2017	DLC
m-&p-Xylenes	SW-846 8260C	**990**	40	100	UG/L	03/31/2017	DLC
Styrene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
o-Xylene	SW-846 8260C	**49**	2.0	10	UG/L	03/31/2017	DLC
Bromoform	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Isopropylbenzene	SW-846 8260C	**6.2**	0.20	1	UG/L	04/01/2017	DLC
1,1,2,2-Tetrachloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2,3-Trichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
n-Propylbenzene	SW-846 8260C	**13**	0.20	1	UG/L	04/01/2017	DLC
2-Chlorotoluene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,3,5-Trimethylbenzene	SW-846 8260C	**25**	2.0	10	UG/L	03/31/2017	DLC
4-Chlorotoluene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
tert-Butylbenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2,4-Trimethylbenzene	SW-846 8260C	**40**	2.0	10	UG/L	03/31/2017	DLC
sec-Butylbenzene	SW-846 8260C	**0.90**	0.20	1	UG/L	04/01/2017	DLC
4-Isopropyltoluene	SW-846 8260C	**0.90**	0.20	1	UG/L	04/01/2017	DLC
1,3-Dichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,4-Dichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
n-Butylbenzene	SW-846 8260C	**0.62**	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichlorobenzene	SW-846 8260C	**1.0**	0.20	1	UG/L	04/01/2017	DLC
1,2-Dibromo-3-chloropropane	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC
1,2,4-Trichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Hexachlorobutadiene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Naphthalene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2,3-Trichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4 10X Dilution	SW-846 8260C	**102**	03/31/2017	DLC
1,2-Dichloroethane-d4 100X Dilution	SW-846 8260C	**107**	03/31/2017	DLC
1,2-Dichloroethane-d4	SW-846 8260C	**93.3**	04/01/2017	DLC

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CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS JOB#: ALS SAMPLE#:	4/5/2017 EV17030264 EV17030264-01
CLIENT CONTACT:	Thom Morin	DATE RECEIVED:	03/30/2017
CLIENT PROJECT:	03916.3	COLLECTION DATE:	3/29/2017 11:38:00 AM
CLIENT SAMPLE ID	GI4-30-032917	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Toluene-d8 10X Dilution	SW-846 8260C	**87.4**	03/31/2017	DLC
Toluene-d8 100X Dilution	SW-846 8260C	**94.4**	03/31/2017	DLC
Toluene-d8	SW-846 8260C	**87.9**	04/01/2017	DLC
4-Bromofluorobenzene 10X Dilution	SW-846 8260C	**94.4**	03/31/2017	DLC
4-Bromofluorobenzene 100X Dilution	SW-846 8260C	**101**	03/31/2017	DLC
4-Bromofluorobenzene	SW-846 8260C	**84.2**	04/01/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE:	4/5/2017
		ALS JOB#:	EV17030264
		ALS SAMPLE#:	EV17030264-02
CLIENT CONTACT:	Thom Morin	DATE RECEIVED:	03/30/2017
CLIENT PROJECT:	03916.3	COLLECTION DATE:	3/29/2017 12:00:00 PM
CLIENT SAMPLE ID	GI5-28-032917	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chloromethane	SW-846 8260C	**7.8**	0.20	1	UG/L	04/01/2017	DLC
Vinyl Chloride	SW-846 8260C	**0.67**	0.020	1	UG/L	04/01/2017	DLC
Bromomethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chloroethane	SW-846 8260C	**44**	2.0	10	UG/L	03/31/2017	DLC
Carbon Tetrachloride	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Trichlorofluoromethane	SW-846 8260C	**0.23**	0.20	1	UG/L	04/01/2017	DLC
Ethanol	SW-846 8260C	**880**	20	1	UG/L	04/01/2017	DLC
Carbon Disulfide	SW-846 8260C	**0.46**	0.20	1	UG/L	04/01/2017	DLC
Acetone	SW-846 8260C	**1000**	110	500	UG/L	03/31/2017	DLC
1,1-Dichloroethene	SW-846 8260C	**2.1**	0.20	1	UG/L	04/01/2017	DLC
Methylene Chloride	SW-846 8260C	**35 E**	0.50	1	UG/L	04/01/2017	DLC
Acrylonitrile	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC
Methyl tert-butyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
trans-1,2-Dichloroethene	SW-846 8260C	**1.0**	0.20	1	UG/L	04/01/2017	DLC
Isopropyl Ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Ethyl tert-butyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,1-Dichloroethane	SW-846 8260C	**38**	2.0	10	UG/L	03/31/2017	DLC
Methyl Ethyl Ketone	SW-846 8260C	**1300**	500	500	UG/L	03/31/2017	DLC
cis-1,2-Dichloroethene	SW-846 8260C	**29**	2.0	10	UG/L	03/31/2017	DLC
2,2-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromochloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chloroform	SW-846 8260C	**0.78**	0.20	1	UG/L	04/01/2017	DLC
1,1,1-Trichloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,1-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichloroethane	SW-846 8260C	**41**	2.0	10	UG/L	03/31/2017	DLC
Benzene	SW-846 8260C	**14**	0.20	1	UG/L	04/01/2017	DLC
Trichloroethene	SW-846 8260C	**580**	100	500	UG/L	03/31/2017	DLC
tert-Amyl methyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
tert-Butyl Alcohol	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Dibromomethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromodichloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
trans-1,3-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
4-Methyl-2-pentanone	SW-846 8260C	**1000**	500	500	UG/L	03/31/2017	DLC
Toluene	SW-846 8260C	**5500**	100	500	UG/L	03/31/2017	DLC
cis-1,3-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,1,2-Trichloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
2-Hexanone	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC

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CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS JOB#: ALS SAMPLE#:	4/5/2017 EV17030264 EV17030264-02
CLIENT CONTACT:	Thom Morin	DATE RECEIVED:	03/30/2017
CLIENT PROJECT:	03916.3	COLLECTION DATE:	3/29/2017 12:00:00 PM
CLIENT SAMPLE ID	GI5-28-032917	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,3-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Tetrachloroethene	SW-846 8260C	**25**	2.0	10	UG/L	03/31/2017	DLC
Dibromochloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dibromoethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chlorobenzene	SW-846 8260C	**0.77**	0.20	1	UG/L	04/01/2017	DLC
1,1,1,2-Tetrachloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Ethylbenzene	SW-846 8260C	**330**	100	500	UG/L	03/31/2017	DLC
m-&p-Xylenes	SW-846 8260C	**840**	200	500	UG/L	03/31/2017	DLC
Styrene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
o-Xylene	SW-846 8260C	**200**	100	500	UG/L	03/31/2017	DLC
Bromoform	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Isopropylbenzene	SW-846 8260C	**6.1**	0.20	1	UG/L	04/01/2017	DLC
1,1,2,2-Tetrachloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2,3-Trichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
n-Propylbenzene	SW-846 8260C	**11**	0.20	1	UG/L	04/01/2017	DLC
2-Chlorotoluene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,3,5-Trimethylbenzene	SW-846 8260C	**14**	0.20	1	UG/L	04/01/2017	DLC
4-Chlorotoluene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
tert-Butylbenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2,4-Trimethylbenzene	SW-846 8260C	**38**	2.0	10	UG/L	03/31/2017	DLC
sec-Butylbenzene	SW-846 8260C	**0.78**	0.20	1	UG/L	04/01/2017	DLC
4-Isopropyltoluene	SW-846 8260C	**0.70**	0.20	1	UG/L	04/01/2017	DLC
1,3-Dichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,4-Dichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
n-Butylbenzene	SW-846 8260C	**0.51**	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichlorobenzene	SW-846 8260C	**1.0**	0.20	1	UG/L	04/01/2017	DLC
1,2-Dibromo-3-chloropropane	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC
1,2,4-Trichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Hexachlorobutadiene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Naphthalene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2,3-Trichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4 500X Dilution	SW-846 8260C	**99.9**	03/31/2017	DLC
1,2-Dichloroethane-d4 10X Dilution	SW-846 8260C	**98.2**	03/31/2017	DLC
1,2-Dichloroethane-d4	SW-846 8260C	**93.0**	04/01/2017	DLC
Toluene-d8 500X Dilution	SW-846 8260C	**96.9**	03/31/2017	DLC

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CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE:	4/5/2017
		ALS JOB#:	EV17030264
		ALS SAMPLE#:	EV17030264-02
CLIENT CONTACT:	Thom Morin	DATE RECEIVED:	03/30/2017
CLIENT PROJECT:	03916.3	COLLECTION DATE:	3/29/2017 12:00:00 PM
CLIENT SAMPLE ID	GI5-28-032917	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Toluene-d8 10X Dilution	SW-846 8260C	**98.5**	03/31/2017	DLC
Toluene-d8	SW-846 8260C	**89.9**	04/01/2017	DLC
4-Bromofluorobenzene 500X Dilution	SW-846 8260C	**102**	03/31/2017	DLC
4-Bromofluorobenzene 10X Dilution	SW-846 8260C	**94.6**	03/31/2017	DLC
4-Bromofluorobenzene	SW-846 8260C	**79.3**	04/01/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.
E - Reported result is an estimate because it exceeds the calibration range.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS SDG#: WDOE ACCREDITATION:	4/5/2017 EV17030264 C601
CLIENT CONTACT:	Thom Morin		
CLIENT PROJECT:	03916.3		

LABORATORY BLANK RESULTS

MB-033017A - Batch 114939 - Air by SW-846 8260C

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Chloromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Vinyl Chloride	SW-846 8260C	U	UG/L	0.020	03/30/2017	DLC
Bromomethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Chloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Carbon Tetrachloride	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Trichlorofluoromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Ethanol	SW-846 8260C	U	UG/L	20	03/30/2017	DLC
Carbon Disulfide	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Acetone	SW-846 8260C	U	UG/L	2.5	03/30/2017	DLC
1,1-Dichloroethene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Methylene Chloride	SW-846 8260C	U	UG/L	0.50	03/30/2017	DLC
Acrylonitrile	SW-846 8260C	U	UG/L	1.0	03/30/2017	DLC
Methyl tert-butyl ether	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
trans-1,2-Dichloroethene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Isopropyl Ether	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Ethyl tert-butyl ether	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1-Dichloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Methyl Ethyl Ketone	SW-846 8260C	U	UG/L	1.0	03/30/2017	DLC
cis-1,2-Dichloroethene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
2,2-Dichloropropane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Bromochloromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Chloroform	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1,1-Trichloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1-Dichloropropene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2-Dichloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Benzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Trichloroethene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
tert-Amyl methyl ether	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
tert-Butyl Alcohol	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2-Dichloropropane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Dibromomethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Bromodichloromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
trans-1,3-Dichloropropene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
4-Methyl-2-pentanone	SW-846 8260C	U	UG/L	1.0	03/30/2017	DLC
Toluene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
cis-1,3-Dichloropropene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1,2-Trichloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
2-Hexanone	SW-846 8260C	U	UG/L	1.0	03/30/2017	DLC

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS SDG#: WDOE ACCREDITATION:	4/5/2017 EV17030264 C601
CLIENT CONTACT:	Thom Morin		
CLIENT PROJECT:	03916.3		

LABORATORY BLANK RESULTS

MB-033017A - Batch 114939 - Air by SW-846 8260C

1,3-Dichloropropane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Tetrachloroethene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Dibromochloromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2-Dibromoethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Chlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1,1,2-Tetrachloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Ethylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
m-&p-Xylenes	SW-846 8260C	U	UG/L	0.40	03/30/2017	DLC
Styrene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
o-Xylene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Bromoform	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Isopropylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1,2,2-Tetrachloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2,3-Trichloropropane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Bromobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
n-Propylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
2-Chlorotoluene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,3,5-Trimethylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
4-Chlorotoluene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
tert-Butylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2,4-Trimethylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
sec-Butylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
4-Isopropyltoluene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,3-Dichlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,4-Dichlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
n-Butylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2-Dichlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2-Dibromo-3-chloropropane	SW-846 8260C	U	UG/L	1.0	03/30/2017	DLC
1,2,4-Trichlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Hexachlorobutadiene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Naphthalene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2,3-Trichlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS SDG#: WDOE ACCREDITATION:	4/5/2017 EV17030264 C601
CLIENT CONTACT:	Thom Morin		
CLIENT PROJECT:	03916.3		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 114939 - Air by SW-846 8260C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	SW-846 8260C	**89.2**			75	135	03/30/2017	DLC
1,1-Dichloroethene - BSD	SW-846 8260C	**90.2**	**1**		75	135	03/30/2017	DLC
Benzene - BS	SW-846 8260C	**90.4**			75.1	135	03/30/2017	DLC
Benzene - BSD	SW-846 8260C	**92.0**	**2**		75.1	135	03/30/2017	DLC
Trichloroethene - BS	SW-846 8260C	**87.6**			80.8	136	03/30/2017	DLC
Trichloroethene - BSD	SW-846 8260C	**89.8**	**3**		80.8	136	03/30/2017	DLC
Toluene - BS	SW-846 8260C	**96.7**			67.3	128.9	03/30/2017	DLC
Toluene - BSD	SW-846 8260C	**98.9**	**2**		67.3	128.9	03/30/2017	DLC
Chlorobenzene - BS	SW-846 8260C	**100**			73.7	130	03/30/2017	DLC
Chlorobenzene - BSD	SW-846 8260C	**101**	**1**		73.7	130	03/30/2017	DLC

APPROVED BY

Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

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ALS Laboratory Group
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
(206) 292-9059 Seattle
(425) 356-2626 Fax
http://www.alsenviro.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only) EV17030264

Date 03/29/17 Page 1 Of 1

PROJECT ID: 03916.3
REPORT TO COMPANY: epi
PROJECT MANAGER: Thom Morin
ADDRESS: 1180 NW Maple St, Suite 310
Issaquah, WA 98027
PHONE: 425 395-0010 FAX:
P.O. NUMBER: 03916.3 Task 2.2 E-MAIL: Thomm@epi-wa.com
INVOICE TO COMPANY: IWAG Group III
ATTENTION: PBS
ADDRESS: 400 Bradley Blvd, Suite 300
Richland, WA 99352

ANALYSIS REQUESTED: NWTPH-HCID; NWTPH-DX; NWTPH-GX; BTEX by EPA-8021; MTBE by EPA-8021 ☐ EPA-8260 ☐; Halogenated Volatiles by EPA 8260; Volatile Organic Compounds by EPA 8260; EDB / EDC by EPA 8260 SIM (water); EDB / EDC by EPA 8260 (soil); Semivolatile Organic Compounds by EPA 8270; Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☐; PCB ☐ Pesticides ☐ by EPA 8081/8082; Metals-MTCA-5 ☐ RCRA-8 ☐ Pri Pol ☐ TAL ☐; Metals Other (Specify); TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐

OTHER (Specify)

	SAMPLE I.D.	DATE	TIME	TYPE	LAB#	Volatile Organic Compounds by EPA 8260	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1	EI4-30-032917	03/29/17	1138	Air	1	X	1	
2	EI5-28-032917	03/29/17	1200	Air	2	X	1	
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):
1. Relinquished By: [signature], epi, 03/29/17, 1630hrs
Received By: Shipped FedEx 7787 6655 1585, 03/29/17, 1630hrs
2. Relinquished By:
Received By: Shaun [signature] ALS 3/30/17 9:45am

TURNAROUND REQUESTED in Business Days*
Organic, Metals & Inorganic Analysis: 10 (Standard) | (5) circled | 3 | 2 | 1 | SAME DAY
Fuels & Hydrocarbon Analysis: 5 (Standard) | 3 | 1 | SAME DAY
OTHER:
Specify:

* Turnaround request less than standard may incur Rush Charges

LABORATORY COPY

April 5, 2017

Mr. Thom Morin
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

Dear Mr. Morin,

On March 30th, 2 samples were received by our laboratory and assigned our laboratory project number EV17030265. The project was identified as your 03916.3 . The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS JOB#: ALS SAMPLE#:	4/5/2017 EV17030265 EV17030265-01
CLIENT CONTACT:	Thom Morin	DATE RECEIVED:	03/30/2017
CLIENT PROJECT:	03916.3	COLLECTION DATE:	3/29/2017 11:50:00 AM
CLIENT SAMPLE ID	GI6-29-032917	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chloromethane	SW-846 8260C	**31**	2.0	10	UG/L	03/31/2017	DLC
Vinyl Chloride	SW-846 8260C	**0.21**	0.020	1	UG/L	04/01/2017	DLC
Bromomethane	SW-846 8260C	**0.50**	0.20	1	UG/L	04/01/2017	DLC
Chloroethane	SW-846 8260C	**9.4**	0.20	1	UG/L	04/01/2017	DLC
Carbon Tetrachloride	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Trichlorofluoromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Ethanol	SW-846 8260C	**110**	20	1	UG/L	04/01/2017	DLC
Carbon Disulfide	SW-846 8260C	**1.4**	0.20	1	UG/L	04/01/2017	DLC
Acetone	SW-846 8260C	**1100**	250	100	UG/L	03/31/2017	DLC
1,1-Dichloroethene	SW-846 8260C	**0.55**	0.20	1	UG/L	04/01/2017	DLC
Methylene Chloride	SW-846 8260C	**7.4**	0.50	1	UG/L	04/01/2017	DLC
Acrylonitrile	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC
Methyl tert-butyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
trans-1,2-Dichloroethene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Isopropyl Ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Ethyl tert-butyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,1-Dichloroethane	SW-846 8260C	**5.7**	0.20	1	UG/L	04/01/2017	DLC
Methyl Ethyl Ketone	SW-846 8260C	**440**	100	100	UG/L	03/31/2017	DLC
cis-1,2-Dichloroethene	SW-846 8260C	**2.8**	0.20	1	UG/L	04/01/2017	DLC
2,2-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromochloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chloroform	SW-846 8260C	**0.76**	0.20	1	UG/L	04/01/2017	DLC
1,1,1-Trichloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,1-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichloroethane	SW-846 8260C	**4.8**	0.20	1	UG/L	04/01/2017	DLC
Benzene	SW-846 8260C	**8.7**	0.20	1	UG/L	04/01/2017	DLC
Trichloroethene	SW-846 8260C	**45**	2.0	10	UG/L	03/31/2017	DLC
tert-Amyl methyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
tert-Butyl Alcohol	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Dibromomethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromodichloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
trans-1,3-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
4-Methyl-2-pentanone	SW-846 8260C	**660**	100	100	UG/L	03/31/2017	DLC
Toluene	SW-846 8260C	**1300**	40	200	UG/L	04/01/2017	DLC
cis-1,3-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,1,2-Trichloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC

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ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE:	4/5/2017
		ALS JOB#:	EV17030265
		ALS SAMPLE#:	EV17030265-01
CLIENT CONTACT:	Thom Morin	DATE RECEIVED:	03/30/2017
CLIENT PROJECT:	03916.3	COLLECTION DATE:	3/29/2017 11:50:00 AM
CLIENT SAMPLE ID	GI6-29-032917	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
2-Hexanone	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC
1,3-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Tetrachloroethene	SW-846 8260C	**10**	0.20	1	UG/L	04/01/2017	DLC
Dibromochloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dibromoethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chlorobenzene	SW-846 8260C	**1.0**	0.20	1	UG/L	04/01/2017	DLC
1,1,1,2-Tetrachloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Ethylbenzene	SW-846 8260C	**570**	20	100	UG/L	03/31/2017	DLC
m-&p-Xylenes	SW-846 8260C	**1900**	40	100	UG/L	03/31/2017	DLC
Styrene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
o-Xylene	SW-846 8260C	**580**	20	100	UG/L	03/31/2017	DLC
Bromoform	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Isopropylbenzene	SW-846 8260C	**7.2**	0.20	1	UG/L	04/01/2017	DLC
1,1,2,2-Tetrachloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2,3-Trichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
n-Propylbenzene	SW-846 8260C	**13**	0.20	1	UG/L	04/01/2017	DLC
2-Chlorotoluene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,3,5-Trimethylbenzene	SW-846 8260C	**20**	2.0	10	UG/L	03/31/2017	DLC
4-Chlorotoluene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
tert-Butylbenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2,4-Trimethylbenzene	SW-846 8260C	**35**	2.0	10	UG/L	03/31/2017	DLC
sec-Butylbenzene	SW-846 8260C	**0.94**	0.20	1	UG/L	04/01/2017	DLC
4-Isopropyltoluene	SW-846 8260C	**0.96**	0.20	1	UG/L	04/01/2017	DLC
1,3-Dichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,4-Dichlorobenzene	SW-846 8260C	**0.28**	0.20	1	UG/L	04/01/2017	DLC
n-Butylbenzene	SW-846 8260C	**0.77**	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichlorobenzene	SW-846 8260C	**1.3**	0.20	1	UG/L	04/01/2017	DLC
1,2-Dibromo-3-chloropropane	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC
1,2,4-Trichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Hexachlorobutadiene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Naphthalene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2,3-Trichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4 10X Dilution	SW-846 8260C	**104**	03/31/2017	DLC
1,2-Dichloroethane-d4 100X Dilution	SW-846 8260C	**107**	03/31/2017	DLC
1,2-Dichloroethane-d4 200X Dilution	SW-846 8260C	**99.9**	04/01/2017	DLC

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE:	4/5/2017
		ALS JOB#:	EV17030265
		ALS SAMPLE#:	EV17030265-01
CLIENT CONTACT:	Thom Morin	DATE RECEIVED:	03/30/2017
CLIENT PROJECT:	03916.3	COLLECTION DATE:	3/29/2017 11:50:00 AM
CLIENT SAMPLE ID	GI6-29-032917	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	SW-846 8260C	**90.7**	04/01/2017	DLC
Toluene-d8 10X Dilution	SW-846 8260C	**90.5**	03/31/2017	DLC
Toluene-d8 100X Dilution	SW-846 8260C	**94.2**	03/31/2017	DLC
Toluene-d8 200X Dilution	SW-846 8260C	**97.1**	04/01/2017	DLC
Toluene-d8	SW-846 8260C	**88.6**	04/01/2017	DLC
4-Bromofluorobenzene 10X Dilution	SW-846 8260C	**86.8**	03/31/2017	DLC
4-Bromofluorobenzene 100X Dilution	SW-846 8260C	**97.6**	03/31/2017	DLC
4-Bromofluorobenzene 200X Dilution	SW-846 8260C	**97.0**	04/01/2017	DLC
4-Bromofluorobenzene	SW-846 8260C	**73.8**	04/01/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE:	4/5/2017
		ALS JOB#:	EV17030265
		ALS SAMPLE#:	EV17030265-02
CLIENT CONTACT:	Thom Morin	DATE RECEIVED:	03/30/2017
CLIENT PROJECT:	03916.3	COLLECTION DATE:	3/29/2017 12:40:00 PM
CLIENT SAMPLE ID	GI8-37-032917	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chloromethane	SW-846 8260C	**21**	2.0	10	UG/L	03/31/2017	DLC
Vinyl Chloride	SW-846 8260C	**0.17**	0.020	1	UG/L	04/01/2017	DLC
Bromomethane	SW-846 8260C	**0.33**	0.20	1	UG/L	04/01/2017	DLC
Chloroethane	SW-846 8260C	**26**	2.0	10	UG/L	03/31/2017	DLC
Carbon Tetrachloride	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Trichlorofluoromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Ethanol	SW-846 8260C	**200**	20	1	UG/L	04/01/2017	DLC
Carbon Disulfide	SW-846 8260C	**0.35**	0.20	1	UG/L	04/01/2017	DLC
Acetone	SW-846 8260C	**230**	22	100	UG/L	03/31/2017	DLC
1,1-Dichloroethene	SW-846 8260C	**0.43**	0.20	1	UG/L	04/01/2017	DLC
Methylene Chloride	SW-846 8260C	**10**	0.50	1	UG/L	04/01/2017	DLC
Acrylonitrile	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC
Methyl tert-butyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
trans-1,2-Dichloroethene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Isopropyl Ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Ethyl tert-butyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,1-Dichloroethane	SW-846 8260C	**6.9**	0.20	1	UG/L	04/01/2017	DLC
Methyl Ethyl Ketone	SW-846 8260C	**150**	100	100	UG/L	03/31/2017	DLC
cis-1,2-Dichloroethene	SW-846 8260C	**2.3**	0.20	1	UG/L	04/01/2017	DLC
2,2-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromochloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chloroform	SW-846 8260C	**0.83**	0.20	1	UG/L	04/01/2017	DLC
1,1,1-Trichloroethane	SW-846 8260C	**0.32**	0.20	1	UG/L	04/01/2017	DLC
1,1-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichloroethane	SW-846 8260C	**1.9**	0.20	1	UG/L	04/01/2017	DLC
Benzene	SW-846 8260C	**9.4**	0.20	1	UG/L	04/01/2017	DLC
Trichloroethene	SW-846 8260C	**120**	2.0	10	UG/L	03/31/2017	DLC
tert-Amyl methyl ether	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
tert-Butyl Alcohol	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Dibromomethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromodichloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
trans-1,3-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
4-Methyl-2-pentanone	SW-846 8260C	**1100**	100	100	UG/L	03/31/2017	DLC
Toluene	SW-846 8260C	**2100**	40	200	UG/L	03/31/2017	DLC
cis-1,3-Dichloropropene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,1,2-Trichloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
2-Hexanone	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC

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ALS Group USA, Corp dba ALS Environmental

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CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS JOB#: ALS SAMPLE#:	4/5/2017 EV17030265 EV17030265-02
CLIENT CONTACT:	Thom Morin	DATE RECEIVED:	03/30/2017
CLIENT PROJECT:	03916.3	COLLECTION DATE:	3/29/2017 12:40:00 PM
CLIENT SAMPLE ID	GI8-37-032917	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,3-Dichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Tetrachloroethene	SW-846 8260C	**53**	2.0	10	UG/L	03/31/2017	DLC
Dibromochloromethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2-Dibromoethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Chlorobenzene	SW-846 8260C	**2.0**	0.20	1	UG/L	04/01/2017	DLC
1,1,1,2-Tetrachloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Ethylbenzene	SW-846 8260C	**1300**	20	100	UG/L	03/31/2017	DLC
m-&p-Xylenes	SW-846 8260C	**1100**	80	200	UG/L	03/31/2017	DLC
Styrene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
o-Xylene	SW-846 8260C	**1300**	20	100	UG/L	03/31/2017	DLC
Bromoform	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Isopropylbenzene	SW-846 8260C	**14**	2.0	10	UG/L	03/31/2017	DLC
1,1,2,2-Tetrachloroethane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2,3-Trichloropropane	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Bromobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
n-Propylbenzene	SW-846 8260C	**26**	2.0	10	UG/L	03/31/2017	DLC
2-Chlorotoluene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,3,5-Trimethylbenzene	SW-846 8260C	**33**	2.0	10	UG/L	03/31/2017	DLC
4-Chlorotoluene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
tert-Butylbenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2,4-Trimethylbenzene	SW-846 8260C	**52**	2.0	10	UG/L	03/31/2017	DLC
sec-Butylbenzene	SW-846 8260C	**1.9**	0.20	1	UG/L	04/01/2017	DLC
4-Isopropyltoluene	SW-846 8260C	**1.4**	0.20	1	UG/L	04/01/2017	DLC
1,3-Dichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,4-Dichlorobenzene	SW-846 8260C	**0.33**	0.20	1	UG/L	04/01/2017	DLC
n-Butylbenzene	SW-846 8260C	**1.4**	0.20	1	UG/L	04/01/2017	DLC
1,2-Dichlorobenzene	SW-846 8260C	**2.9**	0.20	1	UG/L	04/01/2017	DLC
1,2-Dibromo-3-chloropropane	SW-846 8260C	U	1.0	1	UG/L	04/01/2017	DLC
1,2,4-Trichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Hexachlorobutadiene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
Naphthalene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC
1,2,3-Trichlorobenzene	SW-846 8260C	U	0.20	1	UG/L	04/01/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4 200X Dilution	SW-846 8260C	**104**	03/31/2017	DLC
1,2-Dichloroethane-d4 10X Dilution	SW-846 8260C	**99.3**	03/31/2017	DLC
1,2-Dichloroethane-d4 100X Dilution	SW-846 8260C	**104**	03/31/2017	DLC
1,2-Dichloroethane-d4	SW-846 8260C	**98.0**	04/01/2017	DLC

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ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS JOB#: ALS SAMPLE#:	4/5/2017 EV17030265 EV17030265-02
CLIENT CONTACT:	Thom Morin	DATE RECEIVED:	03/30/2017
CLIENT PROJECT:	03916.3	COLLECTION DATE:	3/29/2017 12:40:00 PM
CLIENT SAMPLE ID	GI8-37-032917	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
Toluene-d8 200X Dilution	SW-846 8260C	**97.5**	03/31/2017	DLC
Toluene-d8 10X Dilution	SW-846 8260C	**86.5**	03/31/2017	DLC
Toluene-d8 100X Dilution	SW-846 8260C	**91.1**	03/31/2017	DLC
Toluene-d8	SW-846 8260C	**94.2**	04/01/2017	DLC
4-Bromofluorobenzene 200X Dilution	SW-846 8260C	**102**	03/31/2017	DLC
4-Bromofluorobenzene 10X Dilution	SW-846 8260C	**109**	03/31/2017	DLC
4-Bromofluorobenzene 100X Dilution	SW-846 8260C	**98.3**	03/31/2017	DLC
4-Bromofluorobenzene	SW-846 8260C	**59.3**	04/01/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS SDG#: WDOE ACCREDITATION:	4/5/2017 EV17030265 C601
CLIENT CONTACT:	Thom Morin		
CLIENT PROJECT:	03916.3		

LABORATORY BLANK RESULTS

MB-033017A - Batch 114939 - Air by SW-846 8260C

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Chloromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Vinyl Chloride	SW-846 8260C	U	UG/L	0.020	03/30/2017	DLC
Bromomethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Chloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Carbon Tetrachloride	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Trichlorofluoromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Ethanol	SW-846 8260C	U	UG/L	20	03/30/2017	DLC
Carbon Disulfide	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Acetone	SW-846 8260C	U	UG/L	2.5	03/30/2017	DLC
1,1-Dichloroethene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Methylene Chloride	SW-846 8260C	U	UG/L	0.50	03/30/2017	DLC
Acrylonitrile	SW-846 8260C	U	UG/L	1.0	03/30/2017	DLC
Methyl tert-butyl ether	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
trans-1,2-Dichloroethene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Isopropyl Ether	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Ethyl tert-butyl ether	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1-Dichloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Methyl Ethyl Ketone	SW-846 8260C	U	UG/L	1.0	03/30/2017	DLC
cis-1,2-Dichloroethene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
2,2-Dichloropropane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Bromochloromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Chloroform	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1,1-Trichloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1-Dichloropropene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2-Dichloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Benzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Trichloroethene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
tert-Amyl methyl ether	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
tert-Butyl Alcohol	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2-Dichloropropane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Dibromomethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Bromodichloromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
trans-1,3-Dichloropropene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
4-Methyl-2-pentanone	SW-846 8260C	U	UG/L	1.0	03/30/2017	DLC
Toluene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
cis-1,3-Dichloropropene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1,2-Trichloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
2-Hexanone	SW-846 8260C	U	UG/L	1.0	03/30/2017	DLC

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CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE: ALS SDG#: WDOE ACCREDITATION:	4/5/2017 EV17030265 C601
CLIENT CONTACT:	Thom Morin		
CLIENT PROJECT:	03916.3		

LABORATORY BLANK RESULTS

MB-033017A - Batch 114939 - Air by SW-846 8260C

1,3-Dichloropropane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Tetrachloroethene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Dibromochloromethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2-Dibromoethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Chlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1,1,2-Tetrachloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Ethylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
m-&p-Xylenes	SW-846 8260C	U	UG/L	0.40	03/30/2017	DLC
Styrene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
o-Xylene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Bromoform	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Isopropylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,1,2,2-Tetrachloroethane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2,3-Trichloropropane	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Bromobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
n-Propylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
2-Chlorotoluene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,3,5-Trimethylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
4-Chlorotoluene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
tert-Butylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2,4-Trimethylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
sec-Butylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
4-Isopropyltoluene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,3-Dichlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,4-Dichlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
n-Butylbenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2-Dichlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2-Dibromo-3-chloropropane	SW-846 8260C	U	UG/L	1.0	03/30/2017	DLC
1,2,4-Trichlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Hexachlorobutadiene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
Naphthalene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC
1,2,3-Trichlorobenzene	SW-846 8260C	U	UG/L	0.20	03/30/2017	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Environmental Partners, Inc. 1180 NW Maple St, Suite 310 Issaquah, WA 98027	DATE:	4/5/2017
		ALS SDG#:	EV17030265
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Thom Morin		
CLIENT PROJECT:	03916.3		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 114939 - Air by SW-846 8260C

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	SW-846 8260C	**89.2**			75	135	03/30/2017	DLC
1,1-Dichloroethene - BSD	SW-846 8260C	**90.2**	**1**		75	135	03/30/2017	DLC
Benzene - BS	SW-846 8260C	**90.4**			75.1	135	03/30/2017	DLC
Benzene - BSD	SW-846 8260C	**92.0**	**2**		75.1	135	03/30/2017	DLC
Trichloroethene - BS	SW-846 8260C	**87.6**			80.8	136	03/30/2017	DLC
Trichloroethene - BSD	SW-846 8260C	**89.8**	**3**		80.8	136	03/30/2017	DLC
Toluene - BS	SW-846 8260C	**96.7**			67.3	128.9	03/30/2017	DLC
Toluene - BSD	SW-846 8260C	**98.9**	**2**		67.3	128.9	03/30/2017	DLC
Chlorobenzene - BS	SW-846 8260C	**100**			73.7	130	03/30/2017	DLC
Chlorobenzene - BSD	SW-846 8260C	**101**	**1**		73.7	130	03/30/2017	DLC

APPROVED BY

Laboratory Director

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ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
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Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only) EV17030265

Date 03/29/17 Page 1 Of 1

PROJECT ID: 03916.3
REPORT TO COMPANY: epi
PROJECT MANAGER: Thom Morin
ADDRESS: 1180 NW Maple St, Suite 310 Issaquah, WA 98027
PHONE: 425 395-0010 FAX:
P.O. #: 03916.3 Task 2.7 E-MAIL: Thomm@epi-wa.com
INVOICE TO COMPANY: IWAG III
ATTENTION: PBS
ADDRESS: 400 Bradley Blvd, Suite 300 Richland, WA 99352

ANALYSIS REQUESTED

	SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☐	PCB ☐ Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 ☐ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1	GI6-29-032917	03/29/17	1150	Air	1							X										1	
2	GI8-37-032917	03/29/17	1240	Air	2							X										1	
3.																							
4.																							
5.																							
6.																							
7.																							
8.																							
9.																							
10.																							

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):
1. Relinquished By: GJ, epi, 03/29/17, 1630 hrs
Received By: Shipped FedEx 7787 6655 4128, 03/29/17, 1630 hrs
2. Relinquished By:
Received By: [signature] ALS 3/30/17 10:40

TURNAROUND REQUESTED in Business Days*
Organic, Metals & Inorganic Analysis: 10 (Standard) / 5 (circled) / 3 / 2 / 1 / SAME DAY
Fuels & Hydrocarbon Analysis: 5 (Standard) / 3 / 1 / SAME DAY
OTHER:
Specify:

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
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F: +1 805 526 7270
www.alsglobal.com

LABORATORY REPORT

April 6, 2017

Thom Morin
Environmental Partners, Inc.
1180 NW Maple Street, Suite 310
Issaquah, WA 98027

RE: Pasco Landfill / 03916.3

Dear Thom:

Enclosed are the results of the samples submitted to our laboratory on March 30, 2017. For your reference, these analyses have been assigned our service request number P1701517.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Kate Kaneko
By Kate Kaneko at 2:51 pm, 04/06/17

Kate Kaneko
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

Client: Environmental Partners, Inc.
Project: Pasco Landfill / 03916.3

Service Request No: P1701517

CASE NARRATIVE

The samples were received intact under chain of custody on March 30, 2017 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Carbon Monoxide Analysis

The samples were analyzed for carbon monoxide according to modified EPA Method 25C. The analyses included a single sample injection (method modification) analyzed by gas chromatography using flame ionization detection/total combustion analysis. This method is not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

Fixed Gases Analysis

The samples were also analyzed for fixed gases (hydrogen and nitrogen) according to modified EPA Method 3C (single injection) using a gas chromatograph equipped with a thermal conductivity detector (TCD). This procedure is described in laboratory SOP VOA-EPA3C. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP accreditation.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2016036
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1177034
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-004
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-16-7
Utah DOH (NELAP)	http://health.utah.gov/lab/environmental-lab-certification/	CA016272016-6
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Environmental Partners, Inc. Service Request: P1701517
Project ID: Pasco Landfill / 03916.3

Date Received: 3/30/2017
Time Received: 09:45

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	3C Modified - Fxd Gases Bag	25C Modified - TGNMO+ 1X Bag
GI1-35-032917	P1701517-001	Air	3/29/2017	12:30	X	X
GI2-27-032917	P1701517-002	Air	3/29/2017	12:19	X	X

Air - Chain of Custody Record & Analytical Service Request

ALS

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Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Page 1 of 1

Requested Turnaround Time in Business Days (Surcharges) please circle: 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

ALS Project No. P1701517

ALS Contact: Kate Kaneko

Company Name & Address (Reporting Information): ~~PBS 400 Bradley Blvd, Suite 308 Richland WA 99352~~ epi 1180 NW Maple St Suite 310 Issaquah, WA 98027

Project Manager: ~~Mary McElheron~~ Thom Morin

Phone: ~~509-492-6593~~ 425 — Fax: 395-0010

Email Address for Result Reporting: ~~mary.mcelheron@pbsusa.com~~ Thom.m@epi-wa.com

Project Name: Pasco Landfill

Project Number: ~~64180.017.0003~~ 039163

P.O. # / Billing Information: IWAG Group III c/o PBS 400 Bradley Blvd Suite 300 Richland WA 99352

Sampler (Print & Sign): Eric Jensen 509 554-1247

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Analysis Method: CO	Analysis Method: N_2 H_2	Comments e.g. Actual Preservative or specific instructions
GI1-35-032917	1	03/29/17	1230					0.5L	X	X	
GI2-27-032917	2	03/29/17	1219					0.5L	X	X	

Report Tier Levels - please select
Tier I - Results (Default if not specified) ____ Tier III (Results + QC & Calibration Summaries) ____
Tier II (Results + QC Summaries) ____ Tier IV (Data Validation Package) 10% Surcharge ____

EDD required (Yes) / No
Type: ____ Units: ____

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
[signature]	03/29/17	1630 hrs			
Shipped FedEx 7797 6654 4620	03/29/17	1630 hrs	[signature]	3/30/17	0945

Cooler / Blank Temperature ____ °C

ALS Environmental
Sample Acceptance Check Form

Client: Environmental Partners, Inc. Work order: P1701517
Project: Pasco Landfill / 03916.3
Sample(s) received on: 3/30/17 Date opened: 3/30/17 by: KKELPE

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

#	Question	Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? ______ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1701517-001.01	1.0 L Tedlar Bag					
P1701517-002.01	1.0 L Tedlar Bag					

Explain any discrepancies: (include lab sample ID numbers):
Sent in exemption shippers.

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Partners, Inc.**
Client Project ID: **Pasco Landfill / 03916.3**
ALS Project ID: P1701517

Carbon Monoxide

Test Code: EPA Method 25C Modified
Instrument ID: HP5890 II/GC1/FID/TCA
Analyst: Mike Conejo
Sampling Media: 1.0 L Tedlar Bag(s)
Test Notes:

Date(s) Collected: 3/29/17
Date Received: 3/30/17
Date Analyzed: 3/31/17

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	**Result ppmV**	MRL ppmV	Data Qualifier
GI1-35-032917	P1701517-001	0.50	**760**	5.0	
GI2-27-032917	P1701517-002	0.50	**310**	5.0	
Method Blank	P170331-MB	0.50	ND	5.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Partners, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1701517
Client Project ID: **Pasco Landfill / 03916.3** ALS Sample ID: P170331-LCS

Test Code: EPA Method 25C Modified Date Collected: NA
Instrument ID: HP5890 II/GC1/FID/TCA Date Received: NA
Analyst: Mike Conejo Date Analyzed: 3/31/17
Sampling Media: 1.0 L Tedlar Bag Volume(s) Analyzed: NA ml(s)
Test Notes:

Compound	Spike Amount ppmV	**Result ppmV**	**% Recovery**	ALS Acceptance Limits	Data Qualifier
Carbon Monoxide	1,000	**999**	**100**	85-118	

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **Environmental Partners, Inc.**
Client Sample ID: **GI1-35-032917** ALS Project ID: P1701517
Client Project ID: **Pasco Landfill / 03916.3** ALS Sample ID: P1701517-001

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Mike Conejo
Sample Type: 1.0 L Tedlar Bag
Test Notes:

Date Collected: 3/29/17
Date Received: 3/30/17
Date Analyzed: 3/31/17
Volume(s) Analyzed: 0.10 ml(s)

CAS #	**Compound**	**Result** **%, v/v**	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7727-37-9	**Nitrogen**	**81.6**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Partners, Inc.**
Client Sample ID: **GI2-27-032917**
Client Project ID: **Pasco Landfill / 03916.3**

ALS Project ID: P1701517
ALS Sample ID: P1701517-002

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Mike Conejo
Sample Type: 1.0 L Tedlar Bag
Test Notes:

Date Collected: 3/29/17
Date Received: 3/30/17
Date Analyzed: 3/31/17
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7727-37-9	**Nitrogen**	**84.6**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Partners, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1701517
Client Project ID: **Pasco Landfill / 03916.3** ALS Sample ID: P170331-MB

Test Code: EPA Method 3C Modified Date Collected: NA
Instrument ID: HP5890 II/GC1/TCD Date Received: NA
Analyst: Mike Conejo Date Analyzed: 3/31/17
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	**Compound**	**Result %, v/v**	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7727-37-9	Nitrogen	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Partners, Inc.**
Client Sample ID: **Lab Control Sample**
Client Project ID: **Pasco Landfill / 03916.3**

ALS Project ID: P1701517
ALS Sample ID: P170331-LCS

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Mike Conejo
Sample Type: 1.0 L Tedlar Bag
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 3/31/17
Volume(s) Analyzed: NA ml(s)

CAS #	**Compound**	Spike Amount ppmV	**Result ppmV**	**% Recovery**	ALS Acceptance Limits	Data Qualifier
1333-74-0	Hydrogen	40,000	**39,800**	**100**	94-105	
7727-37-9	Nitrogen	50,000	**51,500**	**103**	89-113	

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LABORATORY REPORT

April 6, 2017

Thom Morin
Environmental Partners, Inc.
1180 NW Maple Street, Suite 310
Issaquah, WA 98027

RE: Pasco Landfill / 03916.3

Dear Thom:

Enclosed are the results of the samples submitted to our laboratory on March 30, 2017. For your reference, these analyses have been assigned our service request number P1701518.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Kate Kaneko
By Kate Kaneko at 2:52 pm, 04/06/17

Kate Kaneko
Project Manager

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www.alsglobal.com

Client: Environmental Partners, Inc.
Project: Pasco Landfill / 03916.3

Service Request No: P1701518

CASE NARRATIVE

The samples were received intact under chain of custody on March 30, 2017 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Carbon Monoxide Analysis

The samples were analyzed for carbon monoxide according to modified EPA Method 25C. The analyses included a single sample injection (method modification) analyzed by gas chromatography using flame ionization detection/total combustion analysis. This method is not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

Fixed Gases Analysis

The samples were also analyzed for fixed gases (hydrogen and nitrogen) according to modified EPA Method 3C (single injection) using a gas chromatograph equipped with a thermal conductivity detector (TCD). This procedure is described in laboratory SOP VOA-EPA3C. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP accreditation.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2016036
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1177034
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-004
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-16-7
Utah DOH (NELAP)	http://health.utah.gov/lab/environmental-lab-certification/	CA016272016-6
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Environmental Partners, Inc.

Service Request: P1701518

Project ID: Pasco Landfill / 03916.3

Date Received: 3/30/2017

Time Received: 09:45

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	3C Modified - Fxd Gases Bag	25C Modified - TGNMO+ 1X Bag
GI2-32-032917	P1701518-001	Air	3/29/2017	12:23	X	X
GI3-25-032917	P1701518-002	Air	3/29/2017	12:08	X	X

2

Air - Chain of Custody Record & Analytical Service Request

Page 1 of 1

ALS
2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

ALS Project No. P1701518

ALS Contact: Kate Kaneko

Company Name & Address (Reporting Information): ~~PBS 400 Bradley Blvd, Suite 308 Richland WA 99352~~ epi 1180 NW Maple st. Suite, 310 Issaquah, WA 98027

Project Manager: ~~Mary M. Ellsworth~~ Thom Morin

Phone: ~~509-492-6598~~ 425 | Fax: 395-0010

Email Address for Result Reporting: ~~mary.mcelhenon@pbsusa.com~~ Thomm@epi-WA.com

Project Name: Pasco Landfill

Project Number: ~~6480.017.0003~~ 03916.3

P.O. # / Billing Information: IWAG Group III c/o PBS 400 Bradley Blvd Suite 300 Richland WA 99352

Sampler (Print & Sign): Eric Jensen 509 554-1247

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Analysis Method: CO	Analysis Method: N_2 H_2	Comments e.g. Actual Preservative or specific instructions
GI2-32-032917	1	03/29/17	1223					0.5L	X	X	
GI3-25-032917	2	03/29/17	1208					0.5L	X	X	

Report Tier Levels - please select
Tier I - Results (Default if not specified) ____
Tier II (Results + QC Summaries) ____
Tier III (Results + QC & Calibration Summaries) ____
Tier IV (Data Validation Package) 10% Surcharge ____

EDD required (Yes) / No
Type: ____ Units: ____

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time
[signature]	03/29/17	1630 hrs			
Shipped Fed Ex 7787 6654 5535	03/29/17	1630 hrs	[signature]	3/30/17	0945

Cooler / Blank Temperature ____ °C

ALS Environmental
Sample Acceptance Check Form

Client: Environmental Partners, Inc. Work order: P1701518
Project: Pasco Landfill
Sample(s) received on: 3/30/17 Date opened: 3/30/17 by: ADAVID

Note: This form is used for <u>all</u> samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? ______ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **<u>VOA vials</u>** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and <u>if necessary</u> alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1701518-001.01	1.0 L Tedlar Bag					
P1701518-002.01	1.0 L Tedlar Bag					

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **Environmental Partners, Inc.**
Client Project ID: **Pasco Landfill / 03916.3** ALS Project ID: P1701518

Carbon Monoxide

Test Code: EPA Method 25C Modified
Instrument ID: HP5890 II/GC1/FID/TCA Date(s) Collected: 3/29/17
Analyst: Mike Conejo Date Received: 3/30/17
Sampling Media: 1.0 L Tedlar Bag(s) Date Analyzed: 3/31/17
Test Notes:

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	**Result ppmV**	MRL ppmV	Data Qualifier
GI2-32-032917	P1701518-001	0.50	**490**	5.0	
GI3-25-032917	P1701518-002	0.50	**480**	5.0	
Method Blank	P170331-MB	0.50	ND	5.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Page 1 of 1

Client: **Environmental Partners, Inc.**
Client Sample ID: **Lab Control Sample**
Client Project ID: **Pasco Landfill / 03916.3**

ALS Project ID: P1701518
ALS Sample ID: P170331-LCS

Test Code: EPA Method 25C Modified
Instrument ID: HP5890 II/GC1/FID/TCA
Analyst: Mike Conejo
Sampling Media: 1.0 L Tedlar Bag
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 3/31/17
Volume(s) Analyzed: NA ml(s)

Compound	Spike Amount ppmV	**Result ppmV**	**% Recovery**	ALS Acceptance Limits	Data Qualifier
Carbon Monoxide	1,000	**999**	**100**	85-118	

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Partners, Inc.**
Client Sample ID: **GI2-32-032917**
Client Project ID: **Pasco Landfill / 03916.3**

ALS Project ID: P1701518
ALS Sample ID: P1701518-001

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Mike Conejo
Sample Type: 1.0 L Tedlar Bag
Test Notes:

Date Collected: 3/29/17
Date Received: 3/30/17
Date Analyzed: 3/31/17
Volume(s) Analyzed: 0.10 ml(s)

CAS #	**Compound**	**Result %, v/v**	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**0.272**	0.10	
7727-37-9	**Nitrogen**	**84.0**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Partners, Inc.**
Client Sample ID: **GI3-25-032917** ALS Project ID: P1701518
Client Project ID: **Pasco Landfill / 03916.3** ALS Sample ID: P1701518-002

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Mike Conejo
Sample Type: 1.0 L Tedlar Bag
Test Notes:

Date Collected: 3/29/17
Date Received: 3/30/17
Date Analyzed: 3/31/17
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**0.311**	0.10	
7727-37-9	**Nitrogen**	**85.2**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **Environmental Partners, Inc.**
Client Sample ID: **Method Blank**
Client Project ID: **Pasco Landfill / 03916.3**

ALS Project ID: P1701518
ALS Sample ID: P170331-MB

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Mike Conejo
Sample Type: 1.0 L Tedlar Bag
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 3/31/17
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7727-37-9	Nitrogen	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Partners, Inc.**
Client Sample ID: **Lab Control Sample**
Client Project ID: **Pasco Landfill / 03916.3**

ALS Project ID: P1701518
ALS Sample ID: P170331-LCS

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Mike Conejo
Sample Type: 1.0 L Tedlar Bag
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 3/31/17
Volume(s) Analyzed: NA ml(s)

CAS #	**Compound**	Spike Amount ppmV	**Result ppmV**	**% Recovery**	ALS Acceptance Limits	Data Qualifier
1333-74-0	Hydrogen	40,000	**39,800**	**100**	94-105	
7727-37-9	Nitrogen	50,000	**51,500**	**103**	89-113	

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LABORATORY REPORT

April 6, 2017

Thom Morin
Environmental Partners, Inc.
1180 NW Maple Street, Suite 310
Issaquah, WA 98027

RE: Pasco Landfill / 03916.3

Dear Thom:

Enclosed are the results of the samples submitted to our laboratory on March 30, 2017. For your reference, these analyses have been assigned our service request number P1701519.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Kate Kaneko
By Kate Kaneko at 2:52 pm, 04/06/17

Kate Kaneko
Project Manager

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www.alsglobal.com

Client: Environmental Partners, Inc. Service Request No: P1701519
Project: Pasco Landfill / 03916.3

CASE NARRATIVE

The samples were received intact under chain of custody on March 30, 2017 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Carbon Monoxide Analysis

The samples were analyzed for carbon monoxide according to modified EPA Method 25C. The analyses included a single sample injection (method modification) analyzed by gas chromatography using flame ionization detection/total combustion analysis. This method is not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

Fixed Gases Analysis

The samples were also analyzed for fixed gases (hydrogen and nitrogen) according to modified EPA Method 3C (single injection) using a gas chromatograph equipped with a thermal conductivity detector (TCD). This procedure is described in laboratory SOP VOA-EPA3C. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP accreditation.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2016036
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1177034
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-004
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-16-7
Utah DOH (NELAP)	http://health.utah.gov/lab/environmental-lab-certification/	CA016272016-6
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Environmental Partners, Inc.
Project ID: Pasco Landfill / 03916.3

Service Request: P1701519

Date Received: 3/30/2017
Time Received: 09:45

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	3C Modified - Fxd Gases Bag	25C Modified - TGNMO+ 1X Bag
GI6-29-032917	P1701519-001	Air	3/29/2017	11:50	X	X
GI8-37-032917	P1701519-002	Air	3/29/2017	12:40	X	X

4

Air - Chain of Custody Record & Analytical Service Request

Page 1 of 1

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

ALS Project No. P1700519

ALS Contact: Kate Kaneko

Company Name & Address (Reporting Information): ~~PBS 400 Bradley Blvd, Suite 300 Richland WA 99352~~ epi 1180 NW Maple St Suite 310 Issaquah WA 98027

Project Name: Pasco Landfill

Project Number: ~~64180.017.0003~~ 039163

Project Manager: ~~Mary McElheron~~ Thom Morin

Phone: ~~509-492-6593~~ 425 395-0010

Fax:

P.O. # / Billing Information: IWAG Group III c/o PBS 400 Bradley Blvd Suite 300 Richland WA 99352

Email Address for Result Reporting: ~~mary.mcelheron@pbsusa.com~~ Thomm@epi-wa.com

Sampler (Print & Sign): Eric Jensen 509 554-1247

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Analysis Method: CO	Analysis Method: N_2 H_2	Comments e.g. Actual Preservative or specific instructions
GI6-29-032917	1	03/29/17	1150					0.5L	X	X	
GI8-37-032917	2	03/29/17	1240					0.5L	X	X	

Report Tier Levels - please select
Tier I - Results (Default if not specified) ____
Tier II (Results + QC Summaries) ____
Tier III (Results + QC & Calibration Summaries) ____
Tier IV (Data Validation Package) 10% Surcharge ____

EDD required (Yes) / No
Type: ____ Units: ____

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
[signature]	03/29/17	1630 hrs			
Shipped FedEx 7787 6654 1768	03/29/17	1630 hrs	[signature]	3/30/17	0945

Cooler / Blank Temperature ____°C

ALS Environmental
Sample Acceptance Check Form

Client: Environmental Partners, Inc. Work order: P1701519
Project: Pasco Landfill / 03916.3
Sample(s) received on: 3/30/17 Date opened: 3/30/17 by: KKELPE

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? ______ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1701519-001.01	1.0 L Tedlar Bag					
P1701519-002.01	1.0 L Tedlar Bag					

Explain any discrepancies: (include lab sample ID numbers):
Sent in exemption shipper.

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Partners, Inc.**
Client Project ID: **Pasco Landfill / 03916.3** ALS Project ID: P1701519

Carbon Monoxide

Test Code: EPA Method 25C Modified
Instrument ID: HP5890 II/GC1/FID/TCA Date(s) Collected: 3/29/17
Analyst: Mike Conejo Date Received: 3/30/17
Sampling Media: 1.0 L Tedlar Bag(s) Date Analyzed: 3/31/17
Test Notes:

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	**Result ppmV**	MRL ppmV	Data Qualifier
GI6-29-032917	P1701519-001	0.50	**1,200**	5.0	
GI8-37-032917	P1701519-002	0.50	**610**	5.0	
Method Blank	P170331-MB	0.50	ND	5.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Partners, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1701519
Client Project ID: **Pasco Landfill / 03916.3** ALS Sample ID: P170331-LCS

Test Code: EPA Method 25C Modified Date Collected: NA
Instrument ID: HP5890 II/GC1/FID/TCA Date Received: NA
Analyst: Mike Conejo Date Analyzed: 3/31/17
Sampling Media: 1.0 L Tedlar Bag Volume(s) Analyzed: NA ml(s)
Test Notes:

Compound	Spike Amount ppmV	**Result ppmV**	**% Recovery**	ALS Acceptance Limits	Data Qualifier
Carbon Monoxide	1,000	**999**	**100**	85-118	

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **Environmental Partners, Inc.**
Client Sample ID: **GI6-29-032917** ALS Project ID: P1701519
Client Project ID: **Pasco Landfill / 03916.3** ALS Sample ID: P1701519-001

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Mike Conejo
Sample Type: 1.0 L Tedlar Bag
Test Notes:

Date Collected: 3/29/17
Date Received: 3/30/17
Date Analyzed: 3/31/17
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**0.308**	0.10	
7727-37-9	**Nitrogen**	**84.6**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Partners, Inc.**
Client Sample ID: **GI8-37-032917**
Client Project ID: **Pasco Landfill / 03916.3**

ALS Project ID: P1701519
ALS Sample ID: P1701519-002

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Mike Conejo
Sample Type: 1.0 L Tedlar Bag
Test Notes:

Date Collected: 3/29/17
Date Received: 3/30/17
Date Analyzed: 3/31/17
Volume(s) Analyzed: 0.10 ml(s)

CAS #	**Compound**	**Result %, v/v**	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7727-37-9	**Nitrogen**	**81.0**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS
Page 1 of 1

Client: **Environmental Partners, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1701519
Client Project ID: **Pasco Landfill / 03916.3** ALS Sample ID: P170331-MB

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Mike Conejo
Sample Type: 1.0 L Tedlar Bag
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 3/31/17
Volume(s) Analyzed: 0.10 ml(s)

CAS #	**Compound**	**Result %, v/v**	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7727-37-9	Nitrogen	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Partners, Inc.**
Client Sample ID: **Lab Control Sample**
Client Project ID: **Pasco Landfill / 03916.3**

ALS Project ID: P1701519
ALS Sample ID: P170331-LCS

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Mike Conejo
Sample Type: 1.0 L Tedlar Bag
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 3/31/17
Volume(s) Analyzed: NA ml(s)

CAS #	Compound	Spike Amount ppmV	Result ppmV	% Recovery	ALS Acceptance Limits	Data Qualifier
1333-74-0	Hydrogen	40,000	**39,800**	**100**	94-105	
7727-37-9	Nitrogen	50,000	**51,500**	**103**	89-113	

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LABORATORY REPORT

April 6, 2017

Thom Morin
Environmental Partners, Inc.
1180 NW Maple Street, Suite 310
Issaquah, WA 98027

RE: Pasco Landfill / 03916.3

Dear Thom:

Enclosed are the results of the samples submitted to our laboratory on March 30, 2017. For your reference, these analyses have been assigned our service request number P1701520.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Kate Kaneko
By Kate Kaneko at 2:52 pm, 04/06/17

Kate Kaneko
Project Manager

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Client: Environmental Partners, Inc. Service Request No: P1701520
Project: Pasco Landfill / 03916.3

CASE NARRATIVE

The samples were received intact under chain of custody on March 30, 2017 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Carbon Monoxide Analysis

The samples were analyzed for carbon monoxide according to modified EPA Method 25C. The analyses included a single sample injection (method modification) analyzed by gas chromatography using flame ionization detection/total combustion analysis. This method is not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

Fixed Gases Analysis

The samples were also analyzed for fixed gases (hydrogen and nitrogen) according to modified EPA Method 3C (single injection) using a gas chromatograph equipped with a thermal conductivity detector (TCD). This procedure is described in laboratory SOP VOA-EPA3C. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP accreditation.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2016036
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1177034
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-004
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-16-7
Utah DOH (NELAP)	http://health.utah.gov/lab/environmental-lab-certification/	CA016272016-6
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Environmental Partners, Inc.
Project ID: Pasco Landfill / 03916.3

Service Request: P1701520

Date Received: 3/30/2017
Time Received: 09:45

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	3C Modified - Fxd Gases Bag	25C Modified - TGNMO+ 1X Bag
GI4-30-032917	P1701520-001	Air	3/29/2017	11:38	X	X
GI5-28-032917	P1701520-002	Air	3/29/2017	12:00	X	X

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Air - Chain of Custody Record & Analytical Service Request

Page 1 of 1

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

ALS Project No. P1701520

ALS Contact: Kate Kaneko

Company Name & Address (Reporting Information): ~~PBS 400 Bradley Blvd, Suite 300 Richland WA 99352~~ epi 1190 NW Maple St, Suite 310 Issaquah, WA 98027

Project Manager: ~~Mary McElheron~~ Thom Morin

Phone: ~~509-492-6593~~ 425 395-0010 Fax:

Email Address for Result Reporting: ~~Mary.McElheron@pbsusa.com~~ Thomm@epi-WA.com

Project Name: Pasco Landfill

Project Number: ~~64180.017.0008~~ 03916.3

P.O. # / Billing Information: IWAG Group III c/o PBS 400 Bradley Blvd Suite 300 Richland WA 99352

Sampler (Print & Sign): Eric Jensen 509 554-1247

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Analysis Method: CO	Analysis Method: N_2 H_2	Comments e.g. Actual Preservative or specific instructions
GI4-30-032917	1	03/29/17	1138					0.5L	X	X	
GI5-28-032917	2	03/29/17	1200					0.5L	X	X	

Report Tier Levels - please select
Tier I - Results (Default if not specified) ____ Tier III (Results + QC & Calibration Summaries) ____
Tier II (Results + QC Summaries) ____ Tier IV (Data Validation Package) 10% Surcharge ____

EDD required (Yes) / No
Type: ____ Units: ____

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	03/29/17	1630 hrs			
Shipped FedEx 7787 6654 6380	03/29/17	1630 hrs	[signature]	3/30/17	0945

Cooler / Blank Temperature ____ °C

ALS Environmental
Sample Acceptance Check Form

Client: Environmental Partners, Inc. Work order: P1701520
Project: Pasco Landfill / 03916.3
Sample(s) received on: 3/30/17 Date opened: 3/30/17 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

#	Question	Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? ______ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1701520-001.01	1.0 L Tedlar Bag					
P1701520-002.01	1.0 L Tedlar Bag					

Explain any discrepancies: (include lab sample ID numbers): ______

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Partners, Inc.**
Client Project ID: **Pasco Landfill / 03916.3**
ALS Project ID: P1701520

Carbon Monoxide

Test Code: EPA Method 25C Modified
Instrument ID: HP5890 II/GC1/FID/TCA
Analyst: Mike Conejo
Sampling Media: 1.0 L Tedlar Bag(s)
Test Notes:

Date(s) Collected: 3/29/17
Date Received: 3/30/17
Date Analyzed: 3/31/17

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	**Result ppmV**	MRL ppmV	Data Qualifier
GI4-30-032917	P1701520-001	0.50	**6.4**	5.0	
GI5-28-032917	P1701520-002	0.50	**670**	5.0	
Method Blank	P170331-MB	0.50	ND	5.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Partners, Inc.**
Client Sample ID: **Lab Control Sample**
Client Project ID: **Pasco Landfill / 03916.3**

ALS Project ID: P1701520
ALS Sample ID: P170331-LCS

Test Code: EPA Method 25C Modified
Instrument ID: HP5890 II/GC1/FID/TCA
Analyst: Mike Conejo
Sampling Media: 1.0 L Tedlar Bag
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 3/31/17
Volume(s) Analyzed: NA ml(s)

Compound	Spike Amount ppmV	**Result ppmV**	**% Recovery**	ALS Acceptance Limits	Data Qualifier
Carbon Monoxide	1,000	**999**	**100**	85-118	

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Environmental Partners, Inc.**
Client Sample ID: **GI4-30-032917**
Client Project ID: **Pasco Landfill / 03916.3**

ALS Project ID: P1701520
ALS Sample ID: P1701520-001

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Mike Conejo
Sample Type: 1.0 L Tedlar Bag
Test Notes:

Date Collected: 3/29/17
Date Received: 3/30/17
Date Analyzed: 3/31/17
Volume(s) Analyzed: 0.10 ml(s)

CAS #	**Compound**	**Result %, v/v**	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7727-37-9	**Nitrogen**	**78.9**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: **Environmental Partners, Inc.**
Client Sample ID: **GI5-28-032917**
Client Project ID: **Pasco Landfill / 03916.3**

ALS Project ID: P1701520
ALS Sample ID: P1701520-002

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Mike Conejo
Sample Type: 1.0 L Tedlar Bag
Test Notes:

Date Collected: 3/29/17
Date Received: 3/30/17
Date Analyzed: 3/31/17
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	**Hydrogen**	**0.385**	0.10	
7727-37-9	**Nitrogen**	**86.2**	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

RESULTS OF ANALYSIS

Page 1 of 1

Client: **Environmental Partners, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1701520
Client Project ID: **Pasco Landfill / 03916.3** ALS Sample ID: P170331-MB

Test Code: EPA Method 3C Modified Date Collected: NA
Instrument ID: HP5890 II/GC1/TCD Date Received: NA
Analyst: Mike Conejo Date Analyzed: 3/31/17
Sample Type: 1.0 L Tedlar Bag Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7727-37-9	Nitrogen	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Environmental Partners, Inc.**
Client Sample ID: **Lab Control Sample**
Client Project ID: **Pasco Landfill / 03916.3**

ALS Project ID: P1701520
ALS Sample ID: P170331-LCS

Test Code: EPA Method 3C Modified
Instrument ID: HP5890 II/GC1/TCD
Analyst: Mike Conejo
Sample Type: 1.0 L Tedlar Bag
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 3/31/17
Volume(s) Analyzed: NA ml(s)

CAS #	**Compound**	Spike Amount ppmV	**Result ppmV**	**% Recovery**	ALS Acceptance Limits	Data Qualifier
1333-74-0	Hydrogen	40,000	**39,800**	**100**	94-105	
7727-37-9	Nitrogen	50,000	**51,500**	**103**	89-113	

APPENDIX N
BALEFILL COMBUSTION CAUSATION MEMORANDUM
PASCO LANDFILL NPL SITE

Prepared for

Industrial Waste Area Generator Group III

Prepared by

Anchor QEA, LLC

720 Olive Way, Suite 1900

Seattle, Washington 98101

August 2017

ANCHOR QEA

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Seattle, Washington 98101
Phone 206.287.9130
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MEMORANDUM

To:	IWAG Group III	**Date:**	January 25, 2016
From:	Mike Riley, Ph.D., Anchor QEA	**Project:**	100722-01.05
Re:	Balefill Combustion Causation Memorandum		

INTRODUCTION

Landfill fires are not uncommon. Waste Management World estimates that there are about 8,300 landfill fires per year in the United States (Waste Management World 2010). Pasco Sanitary Landfill (PSL) is no exception to the occurrence or likelihood of fires. PSL operated for many years as a garbage burning operation, and several surface and subsurface fire events have been documented in public records and interviews with landfill operators. The following accounts were taken from these public records and interviews:

- On July 19, 1979, Franklin County Fire District No. 3 (FCFD3) responded to a brush fire at the landfill on the "North East side of the dump" (FCFD3 1979). The fire was allowed to burn out.
- On May 11, 1980, FCFD3 responded to a truck fire at the landfill (FCFD3 1980). The exhaust pipe of a pickup ignited garbage. The fire was extinguished using approximately 1000 gallons of water. The location of the fire within the landfill was not noted.
- On June 20, 1985, a Washington State Department of Ecology (Ecology) inspector noted a large depression on the property dedicated to burning with a fire in progress at the time (Peterson 1985). The inspector noted that combusted residue indicated that prohibited material had been burned, including garbage, paint cans, and tires and that a private citizen was unloading household garbage into the fire. The inspector further noted that there was no evidence of fire suppression equipment in the work area. The inspector found that the burning of prohibited material constituted a violation of the Washington Clean Air Act.
- An evaluation of Pasco Landfill waste disposal practices noted historical fires in 1978 and 1979 (JUB Engineeers 1981). Water was used to put out both fires.
- Mr. Larry Dietrich, PSL owner and operator, noted a fire in 1979 during a 1993 interview (EPI 1993). The fire was in the Balefill Area. Mr. Dietrich noted that the

fire lasted about a week and was put out with water. "The area of the fire had to be dug out, but was burning inside." The top layer of bales had to be removed from the entire Balefill Area. In some places, two or three overlying bales had to be removed.

- During examination of a 1976 aerial photo, Mr. Dietrich stated "On the municipal side of the property, over the old burn area, there was a hot spot for years. Eventually the hot spot worked its way out into fresh garbage and the garbage was spread out to put out the fire" (EPI 1993). The location of this fire is uncertain as there were several old burn areas on the property.
- The Landfill Group (LFG) also discussed a fire in the Balefill Area that occurred in 1981, which was described as a single "hot" bale that was removed (Trueblood 2015).

BACKGROUND ON CURRENT COMBUSTION EVENT[1]

The current combustion event was first noticed on November 27, 2013, when a surface expression of subsurface combustion became evident. The surface expression included the formation of an approximately 1-foot depression in the ground surface and radial surface cracking over an area approximately 20 feet in diameter where municipal solid waste had been disposed. Contrary to assertions by the LFG, surface cracks in the settlement area emitted vapors and odors during a period of time when the soil vapor extraction system was in operation. On November 27, 2013, all soil vapor extraction (SVE) wells were operating and vapor emission from the cracks in the settlement area was observed (Jensen 2013). A communication from the LFG to Ecology on December 2, 2013, stated "there was smoke present in the depression and that it had a burning paper odor to it" (Bannister 2013).

ANATOMY OF LANDFILL COMBUSTION

Four components necessary to sustain combustion have been defined in industry literature:

- source of heat
- fuel source
- oxygen
- chemical chain reaction that sustains the combustion

[1] The term combustion is used in this memorandum in keeping with terminology used in previous documents on this topic. However as presented below, combustion is not an accurate description of the process involved in this event.

These four components are known as the combustion tetrahedron (NFPA 2016).

In the present combustion event, the following components of the tetrahedron have been identified and will be discussed in more detail in this memorandum:

- Source of fuel: Tires and some municipal waste located between the baled waste and Zone A.
- Source of oxygen: Extensive surface cracks and uncovered waste in the vicinity of the combustion area.
- Source of heat: Historical fires in the Balefill Area that were not successfully extinguished and buried under tires and municipal waste.
- Chemical reaction: The primary chemical reaction is the pyrolysis of tire material. Pyrolysis is defined as thermal degradation in the absence of oxygen. The result is that the thermal degradation occurs at relatively low temperatures in the range of 500 to 1300°F (William et al 1990). In contrast, open burning of tires generates heat well in excess of 2000°F (FEMA 1998).

SOURCE OF FUEL

Initial investigations following the discovery of combustion in November 2013 assumed that the subsurface combustion area was directly under the area where the surface expression occurred. Subsequent investigations identified the main location of combustion to be approximately 20 feet northwest of the surface expression, at a depth of 20 to 30 feet below ground surface (see Figure 1). Investigations and excavation in the combustion area have shown that the primary source of combustible material was buried whole and shredded tires. Tires were an abundant fuel source and more than 22 roll-off bins of tires were removed from the excavation in the combustion area.

Tire material as the primary source of fuel has been identified by the following three separate observations:

- Hot and partially melted tire material was observed in samples collected during drilling investigations in the combustion area.
- Hot and partially melted tires were observed during excavation of the combustion area.

- Detailed examination of material obtained during drilling investigations through electron microscopy and laboratory chemical analyses identified that a black-powder residue covering sand grains was the result of pyrolytic degradation of tires (see Attachment 1).

The black-powder residue observed in soil-boring samples was also observed during excavation of the combustion area. At times during excavation, the slurry used to stabilize the excavation would turn black when the excavator would encounter black-powder residue in the excavation.

The volume of the pyrolytic combustion areas was identified through soil boring investigation and excavation. The approximate area in a northwest to southeast cross section through the combustion area is shown in Figure 2. The combustion area encompassed more than 10,000 cubic feet. Yet, the combustion zone only included a fraction of the tires in the excavation area, so the pyrolytic combustion could have continued for many more years if the surface expression had not occurred.

SOURCE OF OXYGEN

The primary source of oxygen is the poorly and incompletely constructed cover of the Balefill Area and adjacent tire and loose municipal wastes. The covered areas of the Balefill Area have not been maintained since closure activities were terminated in 1990, resulting in a network of large cracks in the cover (see Attachment 2). The surface expression of the subsurface combustion occurred at the end of one such crack in the Balefill Area cover (see Figure 3).

The mechanisms for oxygen intrusion include barometric pressure fluctuations and the operation of the SVE system. Barometric effects are orders of magnitude greater than the weak subsurface vacuum induced near the combustion zone by the SVE system (see Figure 4). The effect of barometric pressure changes on subsurface temperature was evident at the thermocouple located closest to the surface expression of the combustion zone (see Figure 5). The data show a close correspondence between changes in temperature and barometric pressure changes. The correspondence ended when a geomembrane was installed as part of the effort to extinguish the combustion by injecting liquid carbon dioxide into the ground.

SOURCE OF HEAT

A tire fire only needs a source of heat to begin combustion. Once started, the tires serve as a heat sink that make it difficult for combustion to go out or be put out (FEMA 1998). As discussed above, there were numerous instances of fires on the PSL property. In fact, fires were a routine part of operation of the landfill. Burning of municipal and other wastes continued long after it was supposed to have been terminated.

There is also documentation of multiple fire events in the Balefill Area. During an interview in 1993, Mr. Larry Dietrich described the process of attempting to put out one such fire by flooding the area at the face of the bales (EPI 1993). No confirmation temperature data were collected to verify that the combustion had been successfully extinguished. This is the same area as the location of the current combustion (Dietrich 2015).

Mr. Dietrich stated that the same area was subsequently used to dispose a large volume of shredded tires. It appears from boring logs and cuttings from hollow-stem auger drilling that loose municipal waste was disposed on top of and adjacent to the tires. From the excavation of the combustion area, it also appears that many of the tires were intact and not shredded.

The ignition temperature for tires is greater than 600°F (Bridgestone 2016), which is much higher than the auto-ignition temperature for municipal waste. Consequently, an external heat source would have been needed to trigger tire combustion.

It should also be noted that approximately 60 percent of landfill fires are attributed to incendiary or smoldering material disposed at landfills and only 5 percent have been attributed to spontaneous combustion of wastes (FEMA 2002).

CHEMICAL REACTION: TIRE PYROLYSIS PROCESS

Tire pyrolysis typically occurs at temperatures above 500°F although pyrolysis below 500°F has not been well studied (Williams et al 1990, Nkosi and Muzenda 2014, CIWMB 2006).

Tire pyrolysis produces solid material (char), liquid (oils), and gas. As shown in Figure 6, at low temperature, tire pyrolysis produces over 90 percent char with very low amounts of liquid and gas produced. As the temperature increases, the percent char decreases and percent liquid increases up to approximately 1,100°F, after which there are only small changes in the char and liquid composition. Gas production is relatively insensitive to temperature, accounting for only a few percent of the mass loss during pyrolysis regardless of temperature.

Temperatures measured at thermocouples in the Balefill Area combustion area occasionally exceeded 600°F, but were typically at about 500°F in the areas where the most extensive elevated temperatures were found (VB-2, VB-18, and VB-19). Based on the relationship between temperature and products from tire pyrolysis, pyrolysis in the combustion zone would produce more than 90 percent char with little production of liquids or gas.

Char comprises carbon black, metal oxides, and a solid hydrocarbon fraction (Williams et al. 1990), consistent with the analytical results of the black powder residue found in soil borings within the combustion area (see Attachment 1).

Because there is little production of liquids and gas in low temperature tire pyrolysis, there is little loss of solid mass in the process. Void spaces produced would likely be due to incomplete compaction of tires during disposal rather than void spaces created by combustion of waste material. This may explain the relatively small amount of settlement in the combustion area and the limited number of void spaces encountered during the numerous drilling investigations conducted in the combustion area.

PYROLYSIS PROCESS AT THE PSL BALEFILL AREA

Soil borings indicate that pyrolyzed waste is interspersed with soil. Because the soil is not combustible, pyrolysis propagates along waste pathways. During excavation of the elevated temperature area, tires were the predominant waste encountered. The pyrolysis propagated through the tire waste, leaving behind char as a powder that coated the soil/mineral grains in the same area.

The propagation of pyrolysis along this tire/char interface was definitively observed in one of the soil borings collected from the center of the combustion area (see Figure 7). Soil boring SB-5 was drilled through the approximate center of the deep combustion zone (see Figure 1) and encountered over 12 feet of tire material. The core sample collected from SB-5 at approximately 28 feet below ground surface consisted of three distinct intervals:

- Shredded tire material at the top of the core
- A high temperature zone in excess of 300°F
- Black-powder coated mineral grains in the bottom of the core

This core captured a snapshot of the low temperature pyrolysis process, which converts tire material into char. The fine char powder coats the mineral grains of the soil matrix, but can be washed off and analyzed in the laboratory (see Attachment 1).

The snapshot observed in Figure 7 also shows the pyrolysis zone is very small. In this case it is approximately a 2-inch interface between the fuel source and the char residue from the pyrolysis process. This small pyrolysis interface would have continued to propagate upward into the overlying tire debris.

CONCEPTUAL MODEL OF THE BALEFILL AREA COMBUSTION EVENT

As noted above, there are several historical references to combustion events in the Balefill Area in the time period for 1978 to 1981. At least one of these events was substantial enough to require removal of many bales to reach the fire zone and a considerable amount of water was used in an attempt to flood and extinguish the fire (EPI 1993). Bales that did not stay intact during removal were disposed along the face of the bales in the area where the current combustion event was observed (Dietrich 2015).

Based on observations during excavation, a large amount of tire material, both shredded and intact, was disposed in this same area. The tires and loose municipal solid waste from broken bales were buried subsequent to attempts to extinguish the fires in the 1978 to 1981 period. However, there is no documentation that the fires were successfully extinguished, but there is evidence that a buried fire on site festered for years before being evident at the surface (EPI 1993).

Tires, once ignited, would retain heat, making it difficult to put out the fire and unlikely that the fire would go out on its own. Once buried, the low oxygen environment and insulation by dirt and tires, pyrolysis would become the combustion process. Based on the volume in which char was found in the subsurface, the pyrolysis has been progressing for years. The low pyrolysis temperature would have only generated a small amount of gas and given the depth of the deep pyrolysis area, the gas would probably be dissipated in the subsurface.

Eventually, the pyrolysis propagated from the deeper zone, where the pyrolysis started, to the shallow zone and reached close enough to the surface to cause a shallow depression, about 1 foot deep. The surface expression occurred at the end of one of the large cracks in the Balefill Area cover, which would have served as a source of oxygen to the shallow combustion zone and provided a preferential pathway for pyrolysis propagation.

CONCLUSION

Based on the above facts from industry literature and Pasco Balefill Area data, it may be concluded that the pyrolysis of tires (and other solid waste) disposed in the Balefill Area occurred over many years after being triggered by a combustion event caused by routine PSL operational practices. Incomplete extinguishment of the historical fires in the Balefill Area, disposal of unextinguished material at the face of the Balefill Area, and disposal of large quantities of tires (whole and shredded) in the same area created a condition for triggering and perpetuating low-temperature tire pyrolysis. The pyrolysis slowly propagated in the subsurface until it reached a point of surface expression many years after it started.

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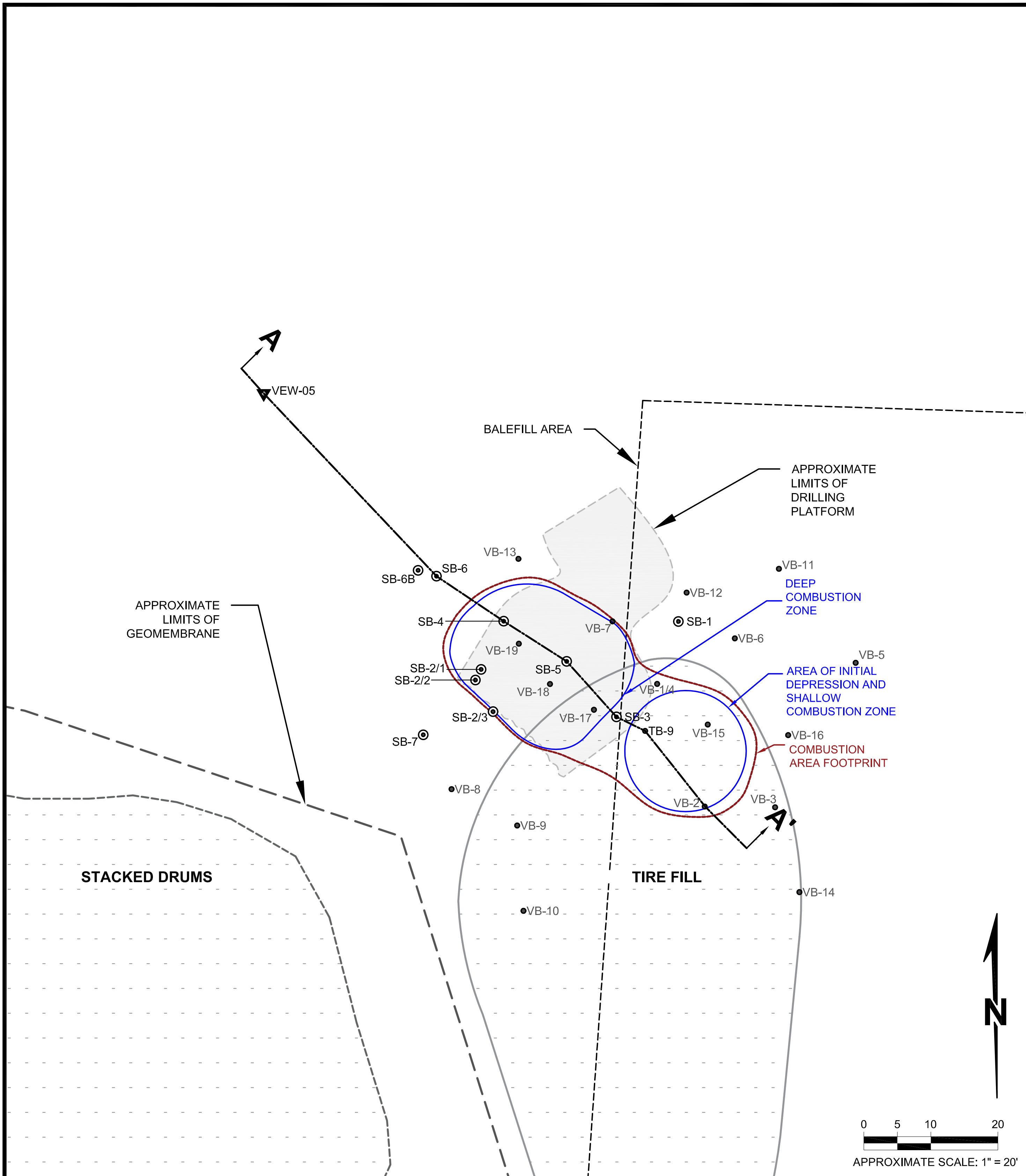
FIGURES



NOTES

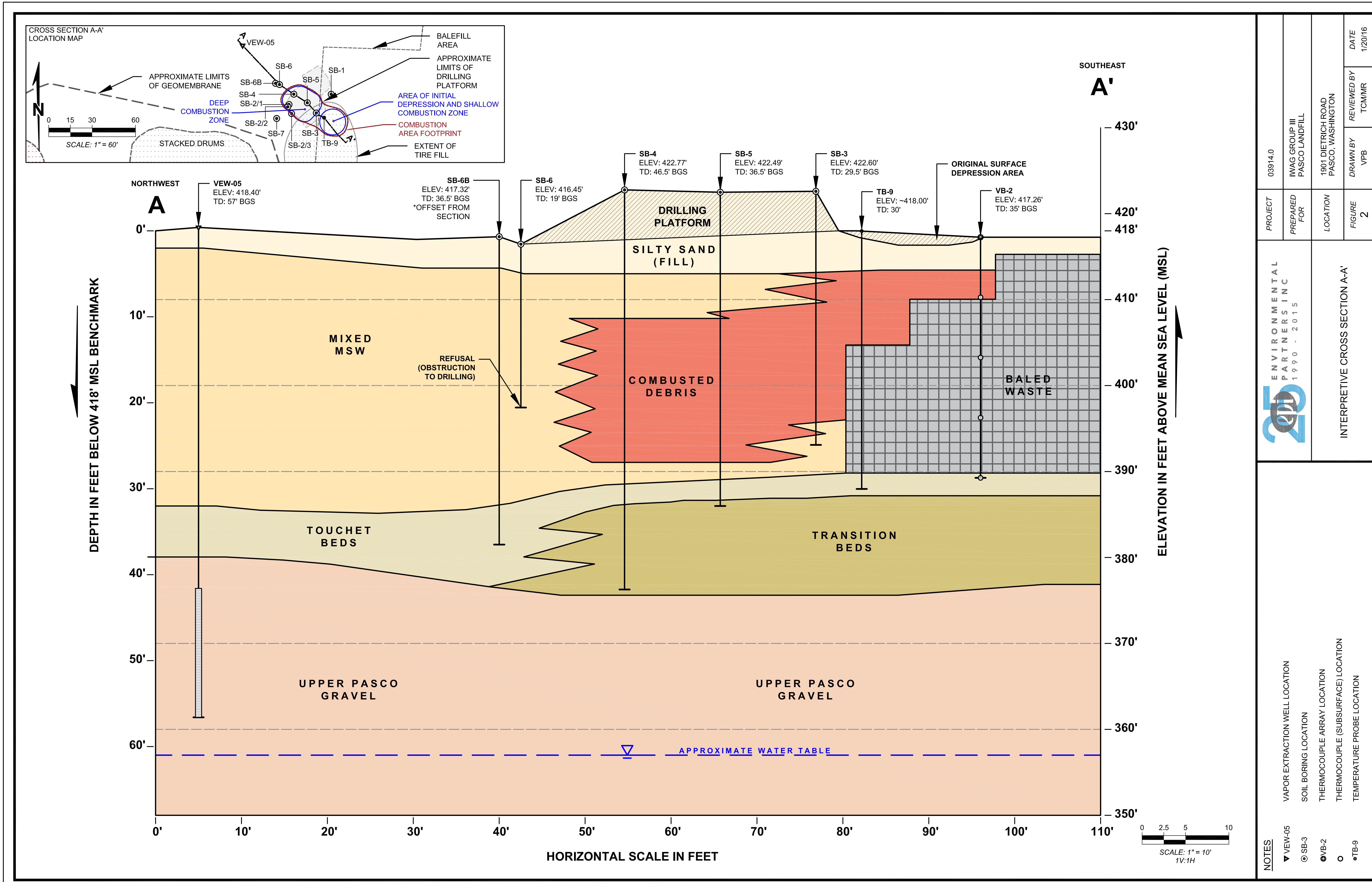
- SB-1 — EXPLORATORY BORING LOCATION
- MW-53S — MONITORING WELL LOCATION
- VEW-07S — VAPOR EXTRACTION WELL LOCATION
- VB-20 — THERMOCOUPLE ARRAY LOCATION
- TB-9 — TEMPERATURE PROBE LOCATION
- A — A' CROSS SECTION INDICATOR

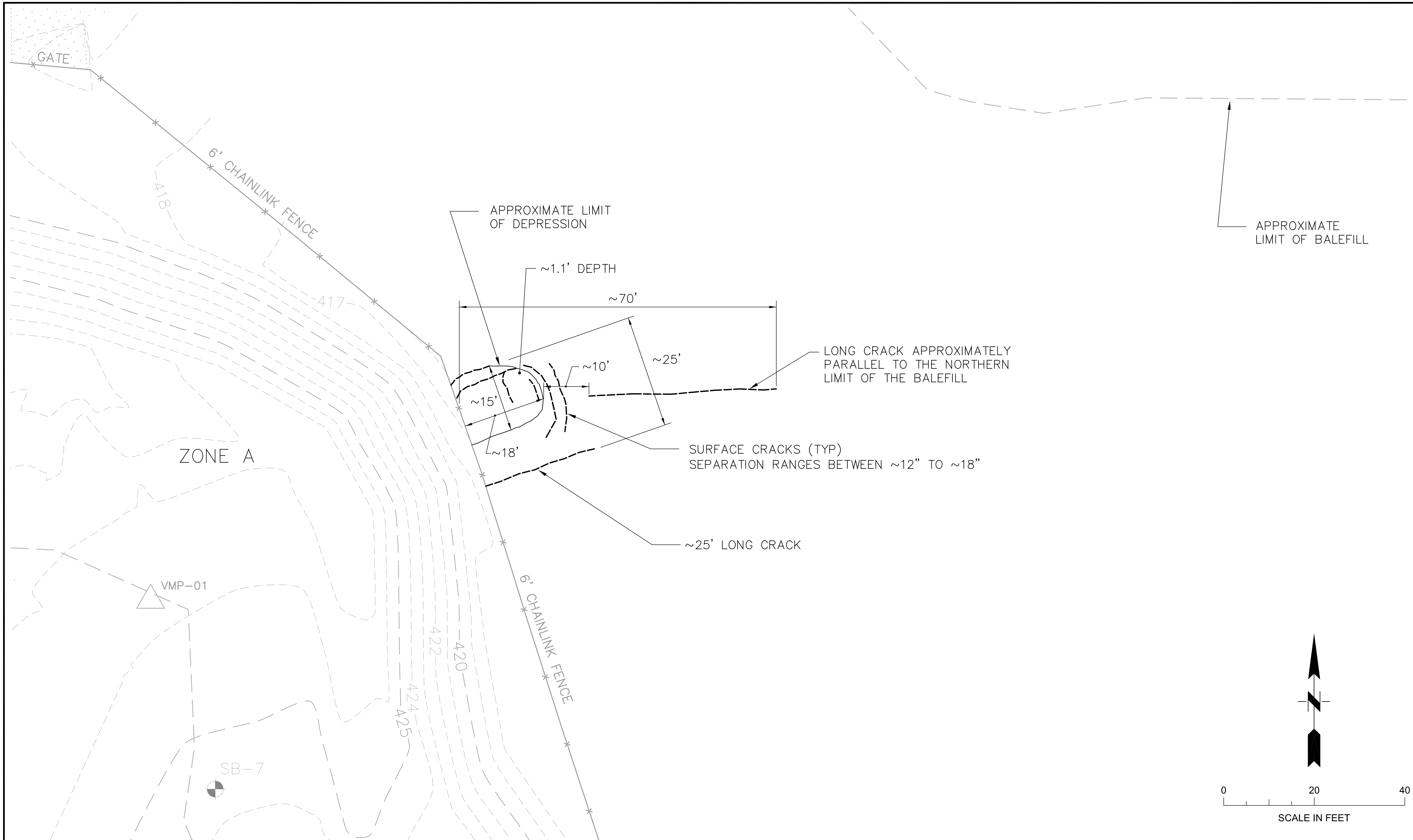
ENVIRONMENTAL PARTNERS INC
1990 - 2015

AREA OF APPARENT COMBUSTION

PROJECT	03914.1
PREPARED FOR	IWAG GROUP III PASCO LANDFILL
LOCATION	1901 DIETRICH ROAD PASCO, WASHINGTON

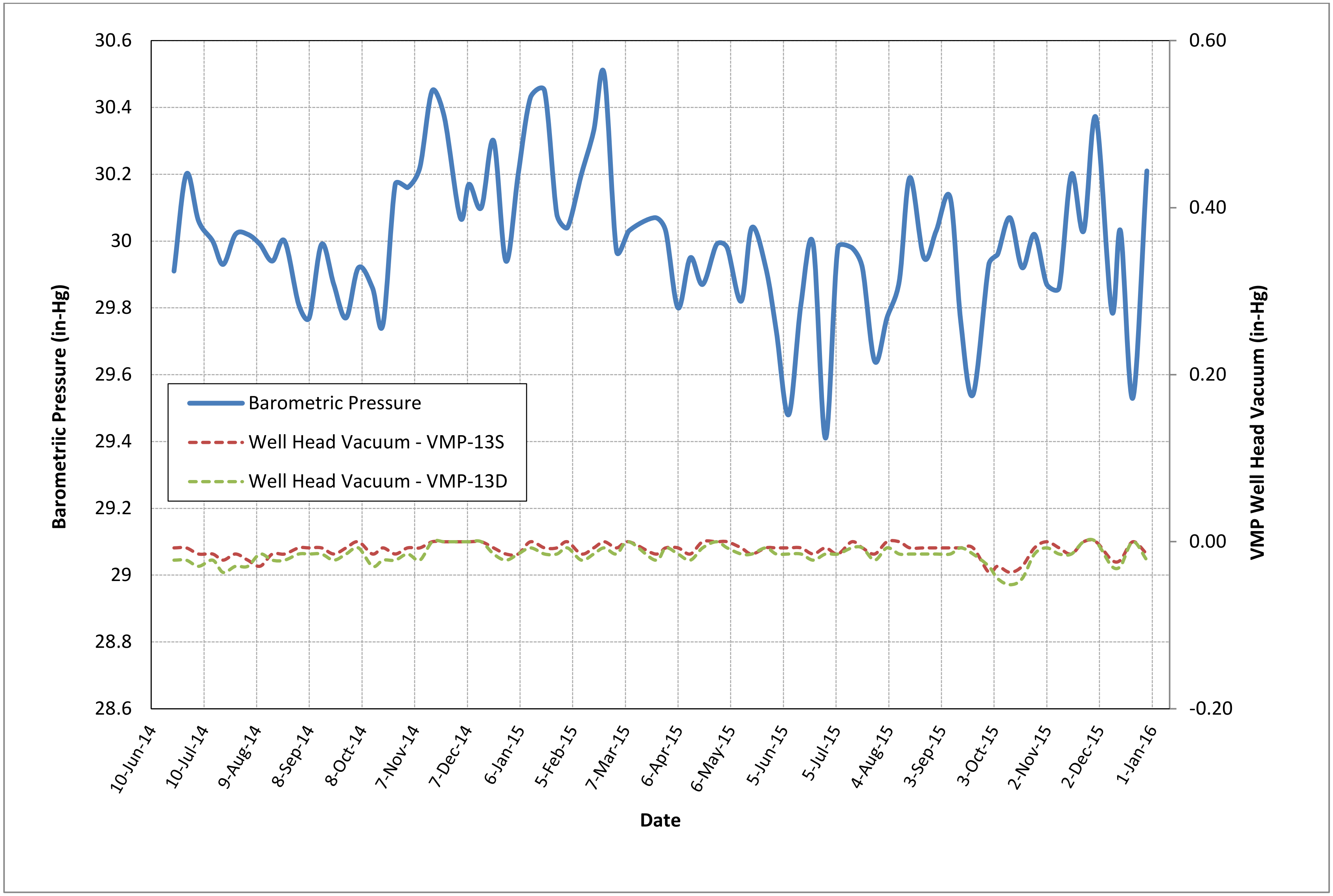
FIGURE	DRAWN BY	REVIEWED BY	DATE
1	VPB	TCM/MR	1/20/16


CROSS SECTION A-A'
LOCATION MAP
VEW-05
SB-6
SB-5
SB-1
SB-6B
SB-4
SB-2/1
SB-2/2
SB-7
SB-3
SB-2/3
TB-9
BALEFILL AREA
APPROXIMATE LIMITS OF DRILLING PLATFORM
AREA OF INITIAL DEPRESSION AND SHALLOW COMBUSTION ZONE
COMBUSTION AREA FOOTPRINT
EXTENT OF TIRE FILL
APPROXIMATE LIMITS OF GEOMEMBRANE
DEEP COMBUSTION ZONE
STACKED DRUMS
N
0 15 30 60
SCALE: 1" = 60'
NORTHWEST
A
SOUTHEAST
A'
VEW-05 ELEV: 418.40' TD: 57' BGS
SB-6B ELEV: 417.32' TD: 36.5' BGS *OFFSET FROM SECTION
SB-6 ELEV: 416.45' TD: 19' BGS
SB-4 ELEV: 422.77' TD: 46.5' BGS
SB-5 ELEV: 422.49' TD: 36.5' BGS
SB-3 ELEV: 422.60' TD: 29.5' BGS
TB-9 ELEV: ~418.00' TD: 30'
ORIGINAL SURFACE DEPRESSION AREA
VB-2 ELEV: 417.26' TD: 35' BGS
DRILLING PLATFORM
SILTY SAND (FILL)
MIXED MSW
REFUSAL (OBSTRUCTION TO DRILLING)
COMBUSTED DEBRIS
BALED WASTE
TOUCHET BEDS
TRANSITION BEDS
UPPER PASCO GRAVEL
UPPER PASCO GRAVEL
APPROXIMATE WATER TABLE
DEPTH IN FEET BELOW 418' MSL BENCHMARK
0' 10' 20' 30' 40' 50' 60'
ELEVATION IN FEET ABOVE MEAN SEA LEVEL (MSL)
430' 420' 418' 410' 400' 390' 380' 370' 360' 350'
0' 10' 20' 30' 40' 50' 60' 70' 80' 90' 100' 110'
HORIZONTAL SCALE IN FEET
0 2.5 5 10
SCALE: 1" = 10'
1V:1H
PROJECT 03914.0
PREPARED FOR IWAG GROUP III PASCO LANDFILL
LOCATION 1901 DIETRICH ROAD PASCO, WASHINGTON
DATE 1/20/16
REVIEWED BY TCM/MIR
DRAWN BY VPB
FIGURE 2
ENVIRONMENTAL PARTNERS INC
1990 - 2015
INTERPRETIVE CROSS SECTION A-A'
NOTES
VEW-05 VAPOR EXTRACTION WELL LOCATION
SB-3 SOIL BORING LOCATION
VB-2 THERMOCOUPLE ARRAY LOCATION
THERMOCOUPLE (SUBSURFACE) LOCATION
TB-9 TEMPERATURE PROBE LOCATION



SCS ENGINEERS
Environmental Consultants and Contractors
2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005
(425) 746-4600 FAX: (425) 746-6747

PROJECT NO. 04209046.01	DES BY JMR	ZONE A/BALEFILL AREA OF DIFFERENTIAL SETTLEMENT	DATE 2013-12-04
SCALE 1"=20'	CHK BY JMR	PASCO LANDFILL PASCO, WASHINGTON	FIGURE 3
CAD FILE FIGURE 1	APP BY JMR		



ANCHOR QEA

Figure 4
Historical Barometric Pressure and Well Head Vacuum at VMP-13S and VMP-13D
Pasco, WA

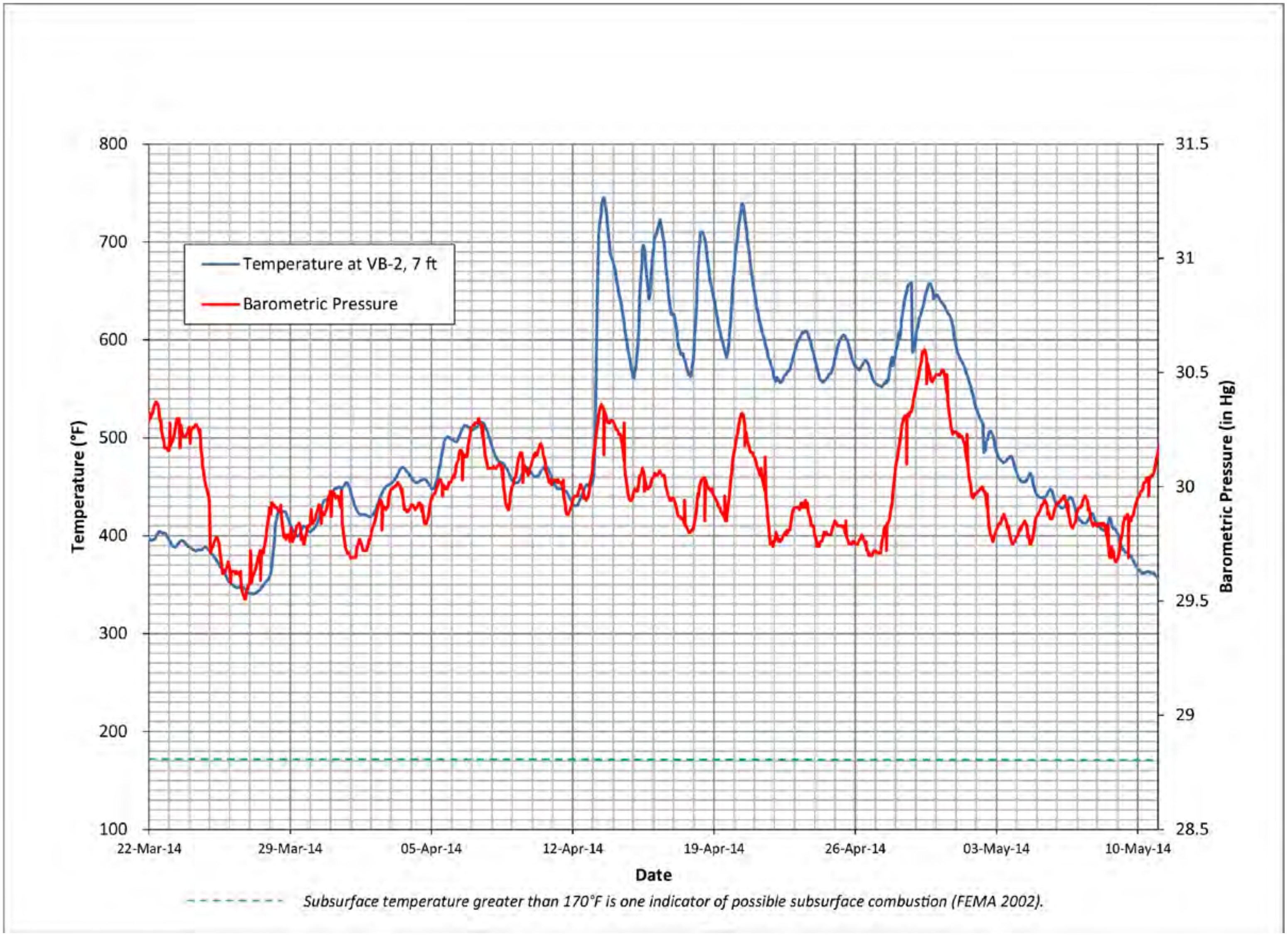


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Figure 5
Barometric Pressure and Temperature Over Time at VB-2, 7 feet (April 2014)
Pasco, WA

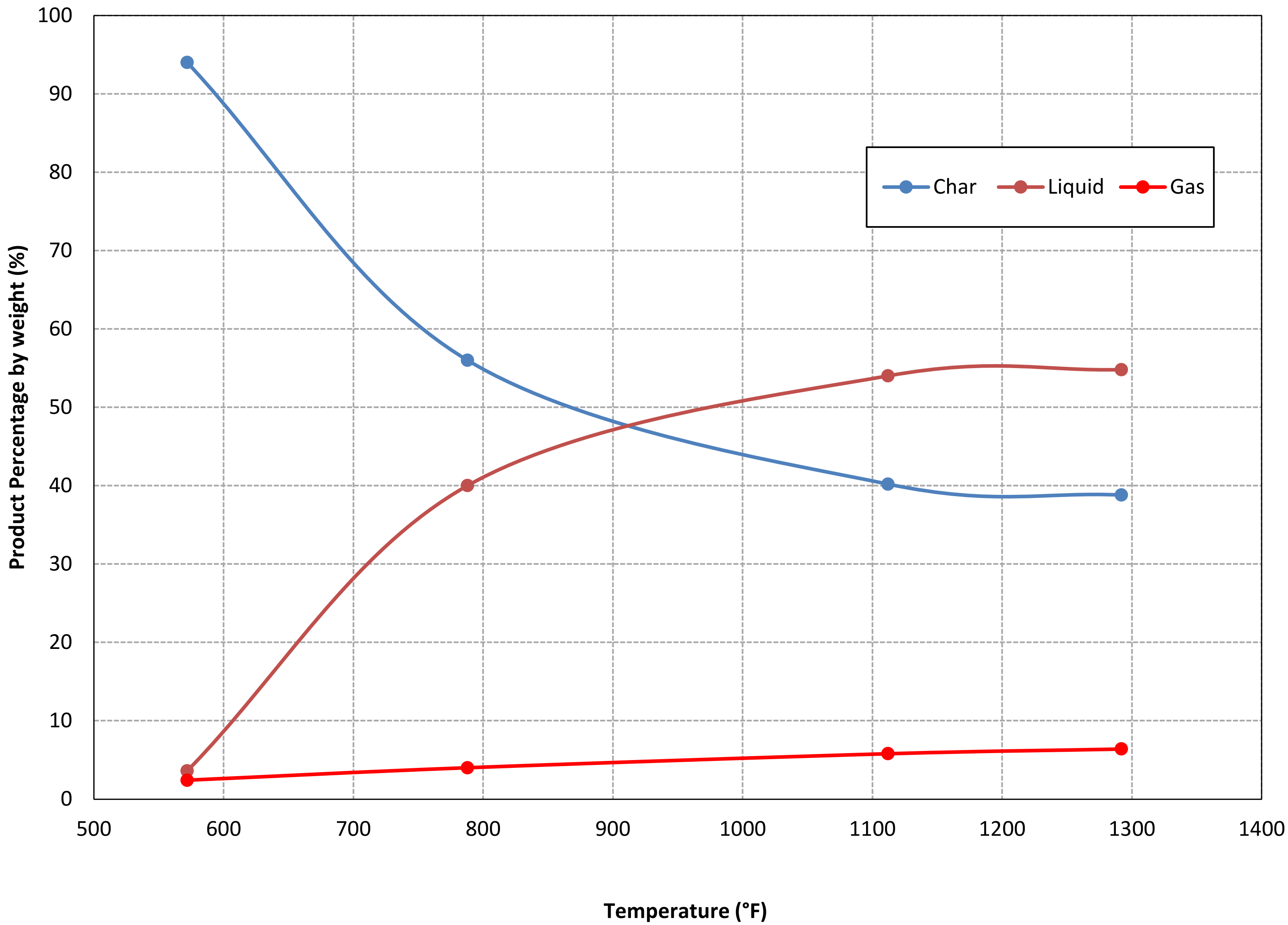

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Figure 6
Relationship Between Temperature and Tire Pyrolysis
Pasco, WA

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Figure 7
Soil Boring Sample from Tire Pyrolysis Area
Pasco, WA

ATTACHMENT 1:
BALEFILL SUBSURFACE BLACK POWDER MATERIAL CHARACTERIZATION MEMORANDUM

ANCHOR QEA

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MEMORANDUM

To:	IWAG Technical Committee	**Date:**	October 16, 2015
From:	Jessica Goin, Ph.D., Dimitri Vlassopoulos, Ph.D, Halah Voges P.E., and Mike Riley, Ph.D., Anchor QEA, LLC	**Project:**	100722-01.05
Re:	Balefill Subsurface Black Powder Material Characterization		

This memorandum summarizes the characterization and derivation of black powder materials recovered during the January 2015 soil boring event. Subsurface samples were collected from borings completed in the low temperature pyrolysis area within the Balefill Area as described in the *Summary of Subsurface Logging Balefill Smoldering Area Pasco Sanitary Landfill Site* (Anchor QEA 2015).

Characterization of the recovered debris samples determined that it was a mixture of mineral matter and former tire waste and that the black powder material recovered from soil borings SB3 and SB5 contains tire material that has undergone partial pyrolysis.

SAMPLE NOTES

Sampling selected for analysis targeted high-temperature intervals, the black powder like material noted during field recovery of the samples, intervals that appeared inconsistent with typical fill or native material, and a sample representing each of the soil cores. Each sample was analyzed by optical microscopy. Black powder material from SB3 (28 to 29.5 feet below ground surface [bgs]) and SB5 (27.5 to 29 feet bgs) was further analyzed by electron microscopy. Samples of the black powder from SB3 and SB5, as well as a piece of tire material associated with the black material in SB5, were submitted for chemical characterization. A lower temperature brown soil sample from SB6B was also submitted for chemical characterization for comparison.

The samples include the following:

- Tire pieces recovered from SB1 and SB2 (SB2/1, SB2/2, SB2/3) soil borings that were attempted but abandoned due to poor recovery

- Tire pieces recovered from SB3, SB4, and SB5
- Black powder material from multiple intervals of SB3 and SB5
- Tan-to-brown soil from SB4, SB6 (SB6 and SB6/B), and SB7

A strong odor (burnt rubber) was noted while handling the black powder from SB3 and SB5. The black powder material was also noted to transfer a persistent black color to gloves and sampling implements.

RESULTS AND DISCUSSION

Subsamples were analyzed by the following methods: 1) optical microscopy; 2) high-resolution scanning electron microscopy (HRSEM) with energy dispersive x-ray (EDX) analysis; 3) chemical analysis, including ultimate carbon, hydrogen, nitrogen, oxygen, and sulfur (CHNOS) and metals; 4) Fourier transform infrared (FTIR) spectroscopy; and 5) thermogravimetric analysis (TGA). Analytical laboratories and methods used are summarized in Table 1.

Optical Microscopy

Recovered tire fragments and subsurface sediment material were examined under an optical microscope and photomicrographs were collected. Recognizable pieces of tire material were examined under the microscope for comparison to the fine-grained materials recovered in the soil borings. Figure 1 shows photographs of a selection of the recovered bulk tire material. The fiber bundles that make up the “carcass” of the tire were imaged under the microscope for the bulk tire materials (Figure 2).

The majority of the observed fibers are either polyester or rayon based on the fiber characteristics history of tire manufacture (e.g., Promislow et al. 1973; Takeyama and Matsui 1969; Kovac and Kersker 1964; Pottinger 1975), though at least two cotton fiber tire pieces were recovered. Early tires used cotton textile carcasses, while from 1942 to 1973 tire carcass textiles were almost exclusively constructed of rayon (peak use 1942 to 1958), nylon (peak use 1958 to 1966), and then polyester (Promislow et al. 1973). Figure 3 shows representative photomicrographs of tire fibers observed in the recovered soil material.

Rubber pieces were a significant component of the recovered soil material from several intervals, especially in SB3 and SB5, and fine metal wires (bead wires) were observed throughout the soil materials (Figure 4).

Features consistent with melting rayon/polyester tire fibers within the rubber matrix were observed in a number of samples, especially SB5 and SB6 (Figure 5). Nylon melts between 170 and 260°C (Braun and Levin 1987). Polyester melts between 250 and 260°C (Lu and Hay 2001). Rayon (rayon 6) has a melting point of 245°C (Arakawa et al. 1969).

The black powder material examined under the microscope appeared to consist of soil grains coated in a very fine black material. The samples were washed by wet sieving, removing the fines (less than 50 micron size fraction). The black coating washed away, revealing mineral grains, rubber pieces, and tire fibers (Figure 6).

The soils from SB4 and SB7 appear to be consistent with typical fill and native material, with limited evidence for tire materials and without the black coating observed in other samples (Figure 7).

Photomicrographs are included as Attachment A.

Electron Microscopy

HRSEM was performed on the black powder material from SB3 and SB5, including secondary-electron (SE) imaging of surface detail, back-scatter electron (BSE) imaging of average atomic mass, and EDX elemental analysis. For example, Figure 8 shows the SE image of the surface details, BSE contrast of low (dark) and high (bright) average molecular weight areas, and EDX spectra for a rubber piece in the SB3 black powder material.

The HRSEM/EDX analysis identified multiple pieces of rubber in the black powder material from both SB3 and SB5, indicated by EDX spectra predominantly consisting of carbon, with significant sulfur and oxygen, and traces of zinc and other metals (Attachment B). The composition for the rubber pieces was compared to the following literature values of tire composition: 80 to 86% carbon, 5 to 8% hydrogen, 1.5 to 2% sulfur, 0.3 to 0.5% nitrogen, and 2 to 5% oxygen, and may also contain zinc, silicon, vanadium, and aluminum (e.g., Wey et al. 1995; Bajus and Olahová 2011; Juma et al. 2006; Lin et al. 1996). Other tire materials identified include tire fibers (fiberglass, rayon/polyester) and wires (Figure 9).

The surface coating was imaged at high magnification and is consistent with carbon black, consisting of rounded, sub-micron, surface features on the majority of grains in the black powder material from both SB3 (Figure 10) and SB5 (Figure 11). The morphology and size of the surface features observed in SB3 and SB5 are consistent with carbon black images from previous studies (Ucar et al. 2005; Fernandes et al. 2003). SE imaging characterizes surface features; however, the signal detected for BSE and EDX detectors has a deeper penetration into the sample, and the composition of sub-micron surface features cannot be distinguished from the underlying grain; therefore, electron microscopy cannot be used confirm that these particles are carbon black by elemental analysis.

Analytical Chemistry

Subsamples from three cores (SB3, SB5, and SB6B) were submitted to ALS Environmental in Tucson, Arizona, for bulk analysis of ultimate CHNOS and trace metals (Table 2 and Attachment C). The initial subsamples included the black powder material, associated gray material, and a large piece of tire material recovered at the base of the black powder layer in SB5 27.5 to 29 feet bgs, the black powder material and associated gray material from SB3 28 to 29.5 feet bgs, and dark soil material from SB6B 17.5 to 19 feet bgs. Photographs of these core intervals are included in Attachment D. The powder samples were sieved to less than 1 millimeter (mm) grain-size prior to submission to the analytical laboratory (minimal material retained by the 1-mm sieve for both SB3 28 to 29.5 feet bgs and SB5 27.5 to 29 feet bgs), with the exception of the tire material recovered from the base of SB5 27.5-29 feet bgs. Ultimate analysis determined that SB3 black powder (or the gray material in the black powder) was approximately 3% carbon, while the material from SB5 was approximately 8% carbon; these values were consistent with microscopic characterization of these materials, which consisted predominantly of mineral grains, with a greater number of rubber pieces and tire fibers in the SB5 sample. The bulk tire material recovered from SB5 had a typical tire composition, including 85% carbon.

Following the microscopy work, and the observation that the fine black coating material could be separated by washing, further characterization of the fines fraction was performed.

The black powder from SB3 28 to 29.5 feet bgs and SB5 27.5 to 29 feet bgs was passed through a 50-micron soil sieve to recover the fines fraction. The fines were submitted to ALS Environmental for ultimate CHNOS analysis (Table 3 and Attachment C) and to Impact Analytical for FTIR/TGA analysis (discussed in the following sections). Separation of the fines increased the carbon content in the black powder material for both samples, from 2.75 to 5% for SB3 and from 7.5 to 12.5% for SB5. This increase in carbon content occurs even with the removal of the larger rubber pieces.

The less than 50-micron fraction was 41% of SB3 28 to 29.5 feet bgs, and comparison of the bulk and fines ultimate results indicates that approximately 75% of the carbon is associated with the fines for this sample. The fines account for 32% of the black powder sample from SB5, and approximately 50% of the carbon is associated with the fines fraction.

Thermogravimetric Analysis

The SB3 and SB5 black powder fines were submitted to Impact Analytical for TGA. TGA characterizes mass loss over increasing temperature under an inert atmosphere (pyrolysis) and high temperature oxygen atmosphere mass loss (combustion). Tires consist of natural or synthetic rubber (commonly styrene-butadiene, 40 to 60% of the tire mass) carbon black (25 to 30% of the tire mass), and a textile carcass, as well as metals, sulfur and other additives (e.g., Williams 2013; Zabaniotou and Stavropoulos 2003; Dodds et al. 1983; Bajus and Olahová 2011). Pyrolysis begins at approximately 275°C, with minimal mass loss of highly volatile material, while the bulk of mass loss during tire pyrolysis occurs in the medium volatile/rubber depolymerization range (350 to 450°C), the combustible fraction is carbon black, and the residual fraction is metal oxides (Cizkova and Juchelkova 2009; Mis-Fernandez et al. 2008; Arockiasamy et al. 2013; Sichina 2001; Wey et al. 1995; Lopez et al. 2009; Juma et al. 2006).

Pyrolysis of tire fibers would have 95% mass loss for rayon by 400°C and 85% mass loss for polyester or nylon fibers by 450°C, with 95% mass loss by 500°C for both polyester and nylon fibers (Acevedo et al. 2015; Parrés et al. 2010). The maximum mass loss is over the same temperature as for styrene-butadiene rubber, so the presence of fibers is not expected to significantly shift the TGA curve.

The total volatile and combustible components by TGA are in excellent agreement with the ultimate analysis (Table 4 and Attachment E). Accounting for the significant mineral matter in these samples (which increases the ash fraction), the TGA curves (Figure 12) are consistent with the many TGA curves reported for tire materials. The highly volatile fraction would include water and some fiber material, the medium-volatile fraction would include rubber and tire fibers that have not undergone pyrolysis, the combustible fraction would include carbon black, and the residual material would include mineral matter from soil grains in addition to the metal oxides from tires.

Comparison of the bulk CHNOS, fines-fraction CHNOS, and fines-fraction TGA indicate that the SB3 28 to 29.5 feet bgs black powder is approximately 5% tire material, of which approximately 1% is carbon black, while the SB5 27.5 to 29 feet bgs black powder is approximately 10% tire material, of which approximately 2.5% is carbon black.

Fourier Transform Infrared Spectroscopy

The SB3 and SB5 fines were also analyzed by FTIR, which measures the absorbance of each infrared wavelength, allowing identification of functional groups, as different bond types have characteristic absorbance wavelengths. The spectra are similar for the fines from SB3 28 to 29 feet bgs and SB5 27.5 to 29 feet bgs, with peaks characteristic of soil minerals and rubber. The SB3 spectra have a stronger silica peak in comparison to the hydrocarbon peaks, while the SB5 spectra have relatively stronger hydrocarbon peaks and additional aromatic functional group peaks (Figure 13). The FTIR peaks are consistent with silicon-oxygen stretching, carbon-carbon vibration in carbon chains, aromatic functional groups, and carbon-sulfur stretching (Coates 2000). The FTIR spectra for the SB5 27.5 to 29 feet bgs black powder fines are very similar to spectra for rubber weathered in soil (Muniandy et al. 2012; Gunasekaran et al. 2007) and organic material contaminated sediment (Song et al. 2001). FTIR peaks noted at 3,364 inverse centimeters (cm^{-1}) and 1,619 cm^{-1} are consistent with reported carbon black peaks (e.g., O'Reilly and Mosher 1983; Xue et al. 2010; Vissers et al. 1987).

PYROLYSIS DISCUSSION

The TGA, FTIR, HRSEM, and microscopy results are consistent with the black powder material recovered from SB3 and SB5 containing tire material that has undergone partial pyrolysis. Tire material recovered from SB1, SB2, SB4, SB6, and SB7 is less degraded than the black powder material from SB3 and SB5. Pyrolysis of tires begins at approximately 250°C, with mass loss of volatile materials from extender oils, and for older tires (pre-1970) from polyester or rayon carcass fibers used prior to the shift to steel-belted tires. Pyrolysis of the rubber component of tires (styrene-butadiene rubber) occurs between 350°C and 450°C, while carbon black is not degraded by pyrolysis (e.g., Fernandes et al. 2003; Mis-Fernandez et al. 2008; Arockiasamy et al. 2013; Sichina 2001; Wey et al. 1995; Lopez et al. 2009; Juma et al. 2006).

Minimal mass is lost from tires during pyrolysis until temperatures exceed 350 to 400°C (e.g., Juma et al. 2006; Lin et al. 1996; Koreňová et al. 2006; Wey et al. 1995; Zabaniotou and Stavropoulos 2003). Reported mass loss rates are near zero at temperatures below 350°C (Oh et al. 1999; Lopez et al. 2009). During TGA, the maximum rate of mass loss occurs at approximately 400°C for the styrene-butadiene rubber most commonly used in tires (Charpenay et al. 1998; Quek and Balasubramanian 2009).

CONCLUSION

The black powder from SB3 is consistent with partial pyrolysis of tire material based on the TGA, FTIR, and HRSEM/EDX. Volatile and medium volatile material were reported by TGA, the FTIR spectra were consistent with a mixture of soil and rubber, and small grains of tire rubber were observed under HRSEM. In comparison to the black powder from SB5, the black powder from SB3 contained few tire fibers or recognizable tire rubber pieces.

The black powder material in SB5 is consistent with partial pyrolytic degradation of tire material as: 1) macroscopic tire material was recovered immediately below the black powder in this core interval; 2) un-deformed polyester/rayon tire carcass fibers were observed in this sample; and 3) abundant sand-to-gravel grain-size pieces of tire rubber were observed in the black powder from this sample. This is consistent with low temperature pyrolysis (maximum temperature of 250 to 350°C) in this soil boring.

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Table 1
Analytical Laboratories and Methods

Analysis	Method	Laboratory
Ultimate analysis - CHN[1]	ASTM Method 7582 Determination of Carbon, Hydrogen and Nitrogen in Coal and Coke	ALS Environmental, Tucson, Arizona
Ultimate analysis - S[1]	ASTM Method D4239 Sulfur in the Analysis Sample of Coal and Coke	
Moisture content	ASTM Method D7582 Proximate Analysis of Coal and Coke	
Total metals	EPA Method 3050B[2] Acid Digestion of Sediments, Sludges, and Soils and EPA Method 6010C Inductively Coupled Plasma-Atomic Emission Spectrometry	
Infrared spectroscopy	FTIR spectroscopy, Impact Analytical SOP-MOL-006	Impact Analytical, Midland, Michigan
Thermogravimetry	TGA, laboratory SOP consistent with ASTM E1131-08 Compositional Analysis by Thermogravimetry	
Electron microscopy	HRSEM - EDX analysis, CAMCOR Standard Operating Procedures	CAMCOR Microanalytical Facility, Eugene, Oregon
Grain size	Modified[3] ASTM D422 Particle-Size Analysis of Soils	Anchor QEA Environmental Geochemistry Laboratory, Portland, Oregon

Notes:
1 = Carbon, hydrogen, nitrogen, and sulfur (oxygen calculated)
2 = Digestion performed by EPA Method 3052 Microwave Assisted Acid Digestion of Siliceous and Organically Based Matrices for silicon and titanium
3 = Modified to determine only the fractions greater than or less than 50 microns
ASTM = ASTM International
EDX = energy dispersive x-ray
EPA = U.S. Environmental Protection Agency
FTIR = Fourier transform infrared
HRSEM = high-resolution scanning electron microscopy
TGA = thermogravimetric analysis

Table 2
Ultimate Analysis and Total Metals of Samples from SB3, SB5, and SB6

Sample/interval		**SB3 28-29.5**	**SB3 28-29.5**	**SB5 27.5-29**	**SB5 27.5-29**	**SB5 27.5-29**	**SB6B 17.5-19**
Field temperature		**239°F**	**239°F**	**308°F**	**308°F**	**308°F**	**106°F**
Visual observations		**black, fine material**	**gray, fine material**	**black, fine material**	**gray, fine material**	**tire rubber (~3")**	**dark brown, dirt/ debris**
Sample ID		**16F15_1001**	**16F15_1002**	**16F15_1003**	**16F15_1004**	**16F15_1005**	**16F15_1006**
Ultimate analysis							
Moisture total	wt%	0.73	0.78	1.39	1.38	0.29	8.25
Ash/inorganic residue	wt%	93.81	94.42	87.50	88.52	4.14	85.14
Moisture free ash	wt%	94.50	95.16	88.73	88.75	4.15	92.79
Carbon	wt%	3.04	2.50	8.15	6.83	85.14	4.83
Hydrogen	wt%	0.18	0.24	0.59	0.55	6.48	0.29
Nitrogen	wt%	0.05	0.02	0.15	0.11	0.63	0.06
Oxygen	wt%	2.03	1.95	2.19	2.61	2.27	1.87
Sulfur	wt%	0.201	0.132	0.187	0.142	1.318	0.151
Sum CHNOS		5.5	4.8	11.3	10.2	95.8	7.2
Metals							
Aluminum	wt%	0.849	0.885	0.796	0.773	0.025	0.734
Barium	wt%	0.011	0.011	0.012	0.012	0.004	0.013
Calcium	wt%	1.307	1.344	1.144	1.187	0.138	1.100
Chromium	wt%	0.001	0.001	0.001	0.001	0.0005 U	0.001
Cobalt	wt%	0.003	0.003	0.002	0.002	0.0005 U	0.002
Copper	wt%	0.013	0.011	0.005	0.005	0.0005 U	0.005
Iron	wt%	3.123	3.186	3.432	3.278	0.065	2.783
Lead	wt%	0.022	0.010	0.011	0.015	0.003	0.016
Magnesium	wt%	0.640	0.688	0.605	0.644	0.035	0.561
Manganese	wt%	0.046	0.048	0.045	0.046	0.001	0.045
Nickel	wt%	0.002	0.002	0.001	0.001	0.0005 U	0.002
Potassium	wt%	0.219	0.213	0.206	0.206	0.024	0.205
Sodium	wt%	0.057	0.052	0.061	0.047	0.028	0.042
Vanadium	wt%	0.006	0.006	0.005	0.005	0.0005 U	0.006
Zinc	wt%	0.320	0.227	0.205	0.145	0.743	0.193
Silicon	wt%	25.70	30.84	28.61	30.32	0.78	28.38
Titanium	wt%	0.72	0.74	0.66	0.64	0.03	0.66

Notes:
Oxygen calculated from CHN measurement
Analysis performed on <1 mm grain size samples except for tire material (16F15_1005)

Table 3
Ultimate Analysis of Fines of Black Powder Samples from SB3 and SB5

Sample	SB3 28 – 29.5	SB5 27.5 – 29
Temperature	239°F	308°F
Description	Black powder, <50 microns	Black powder, <50 microns
Moisture Total (wt%)	1.45	1.87
Ash/inorganic residue (wt%)	88.58	78.94
Moisture free ash (wt%)	89.88	80.44
Carbon (wt%)	5.03	12.50
Hydrogen (wt%)	0.35	0.91
Nitrogen (wt%)	0.10	0.29
Oxygen (wt%)	4.31	5.54
Sulfur (wt%)	0.33	0.31
Sum CHNOS[1]	10.12	19.55

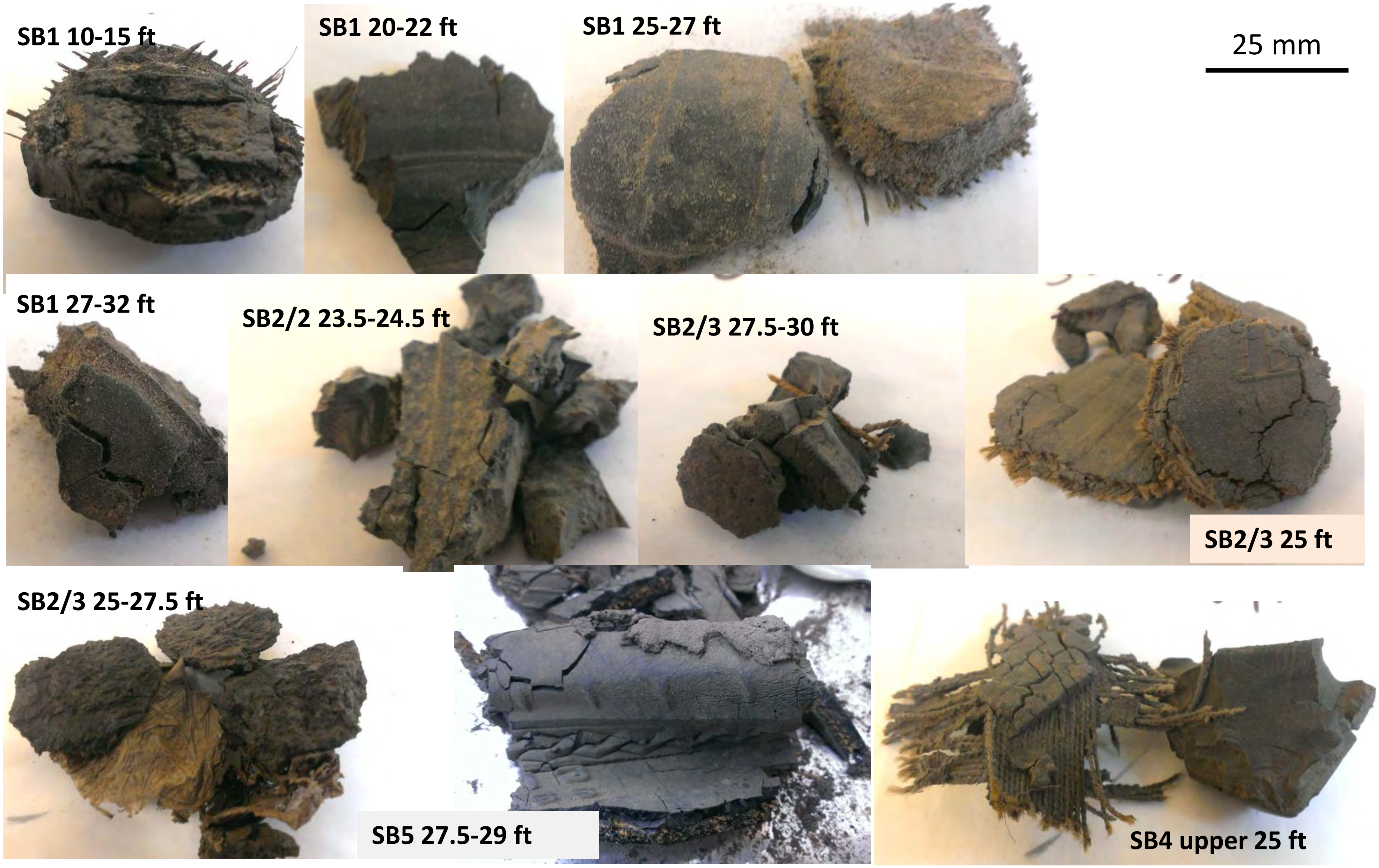
Note:
1 = Carbon, hydrogen, nitrogen, and sulfur (oxygen calculated)

Table 4
Thermogravimetric Analysis of Black Powder

Sample	Temperature Range	SB3 28 – 29.5 Black Powder Fines	SB5 27.5 – 29 Black Powder Fines
Highly volatile matter (wt%)	Ambient – 150°C nitrogen atmosphere	1.29	2.18
Medium volatile matter (wt%)	150 – 650°C nitrogen atmosphere	5.00	8.76
Combustible matter (wt%)	650 – 850°C air atmosphere	2.22	8.05
Ash/inorganic content	Residual	91.48	81.01

Note:
Ash content is the non-combustible material, including mineral grains.

FIGURES



Macroscopic tire material was recovered from SB1, SB2, SB3, SB4, and SB5.

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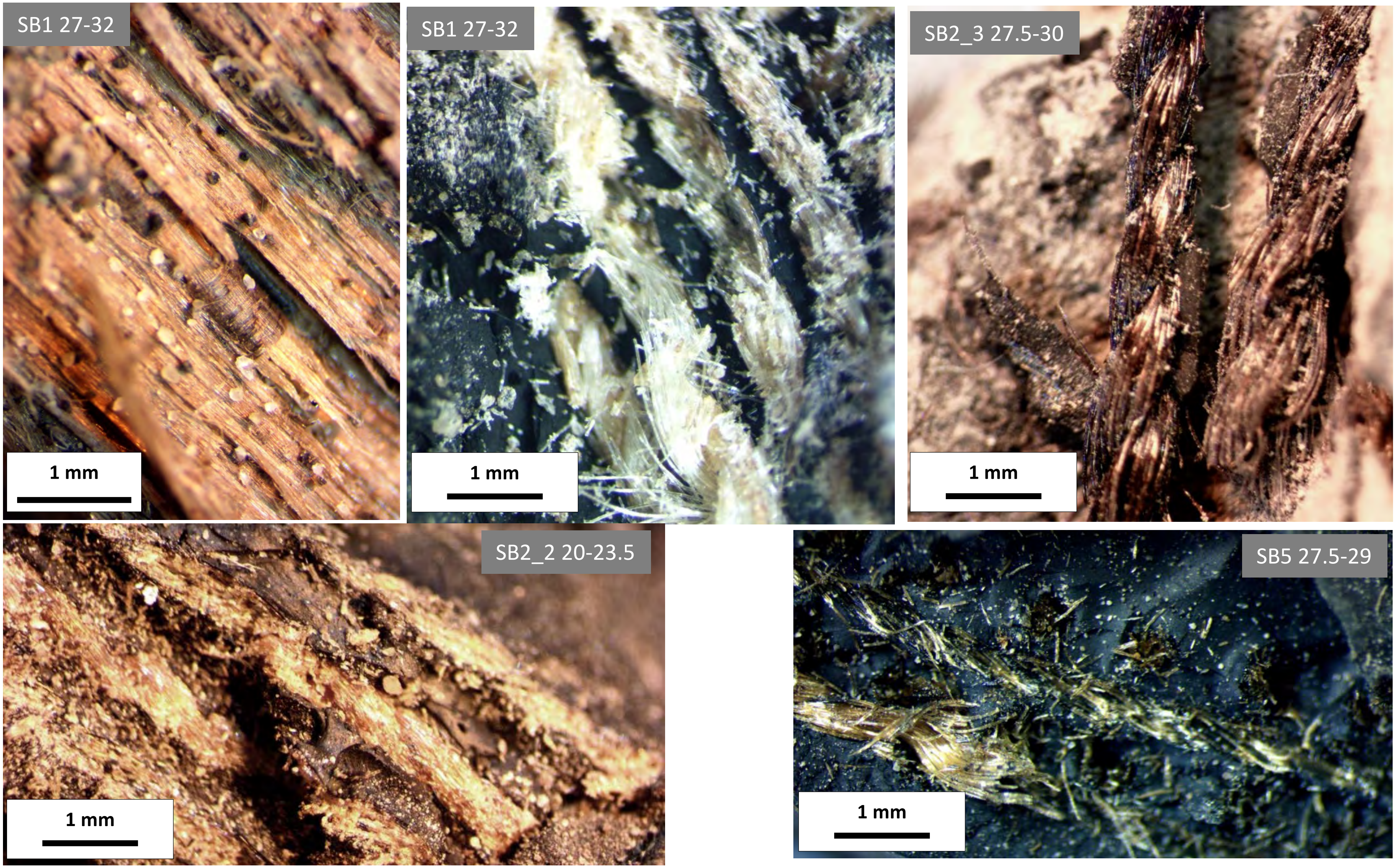
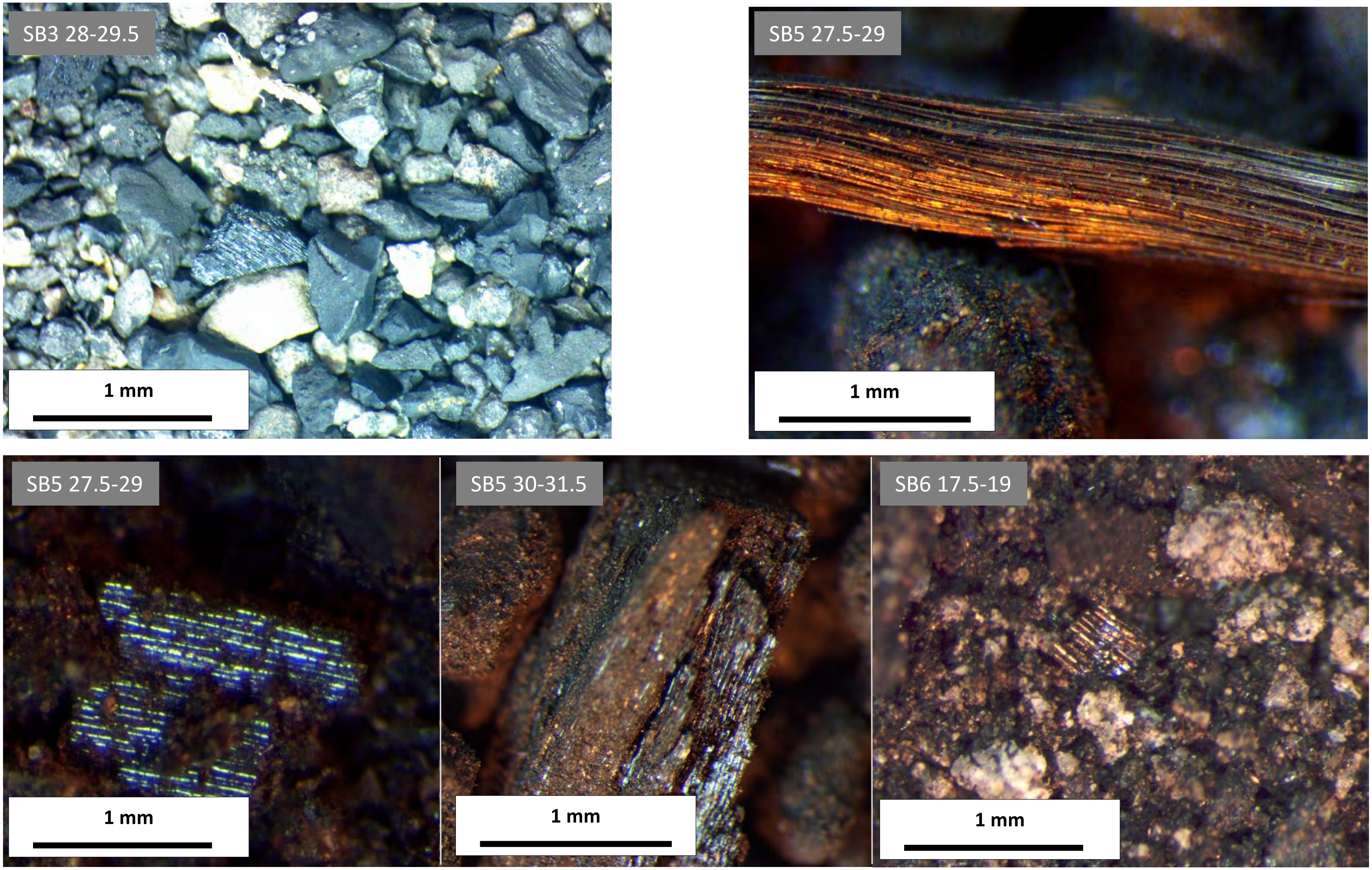
Figure 1
Recovered Tire Pieces
Balefill Subsurface Black Powder Material Characterization
Pasco Landfill NPL Site



Fiber bundles found in macroscopic tire pieces. The tire fibers appear to be predominantly rayon/polyester consistent with understanding of the burial history.

Figure 2
Microscopy of Fibers in Recovered Tire Pieces
Balefill Subsurface Black Powder Material Characterization
Pasco Landfill NPL Site



Tire fiber bundles and fragments are found in the recovered sediment material across grain sizes.

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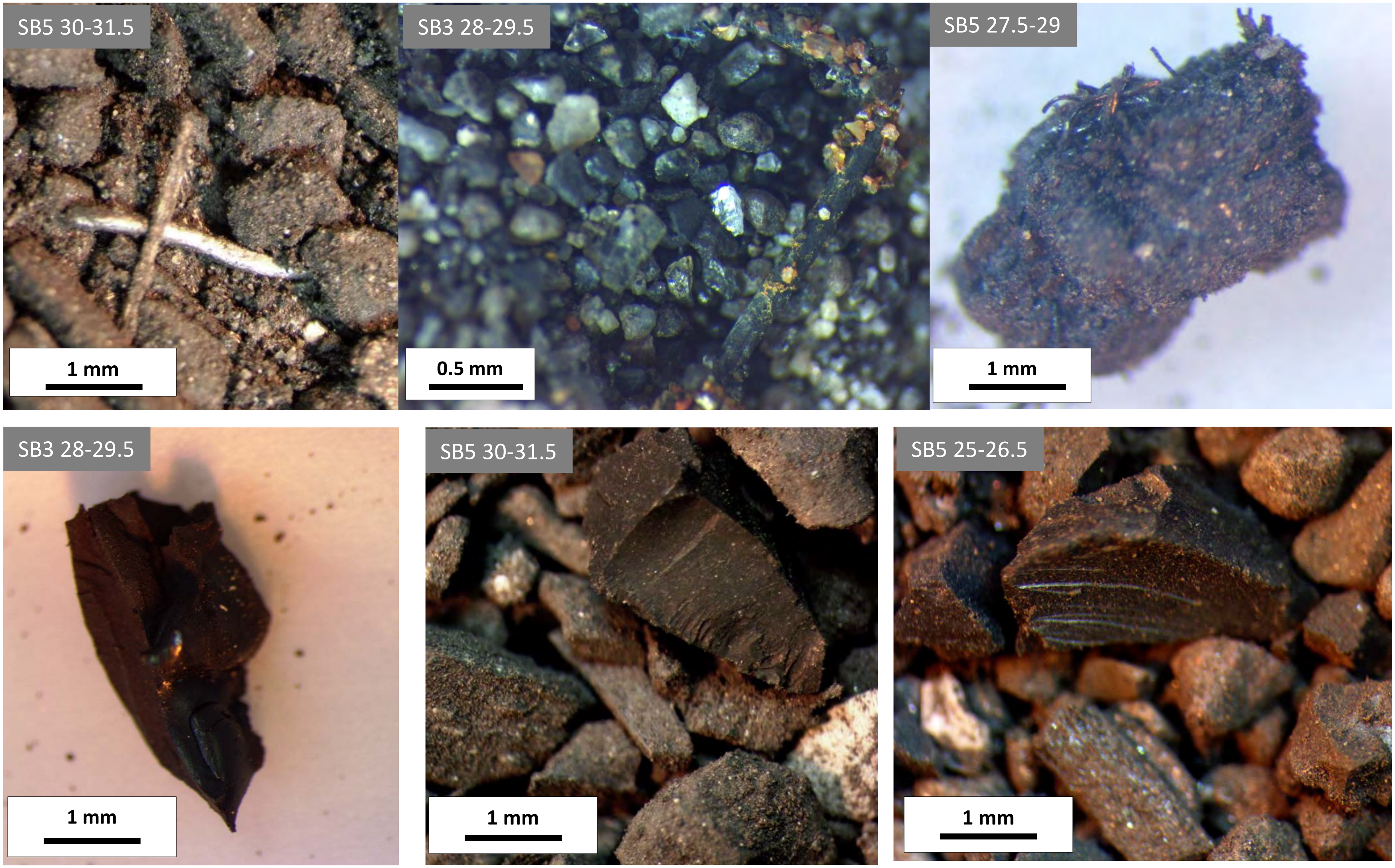
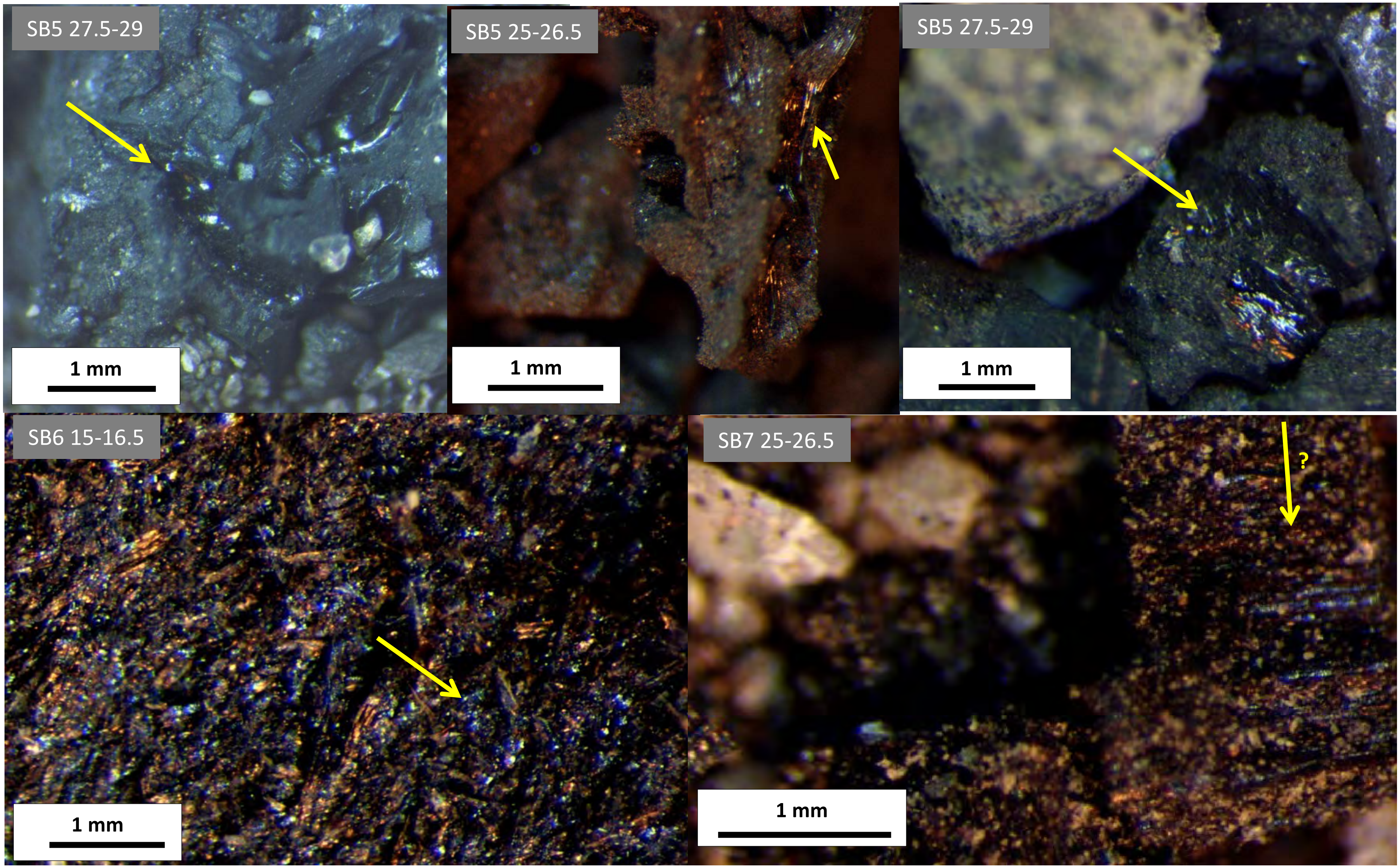
Figure 3
Tire Fibers in Soil Samples
Balefill Subsurface Black Powder Material Characterization
Pasco Landfill NPL Site

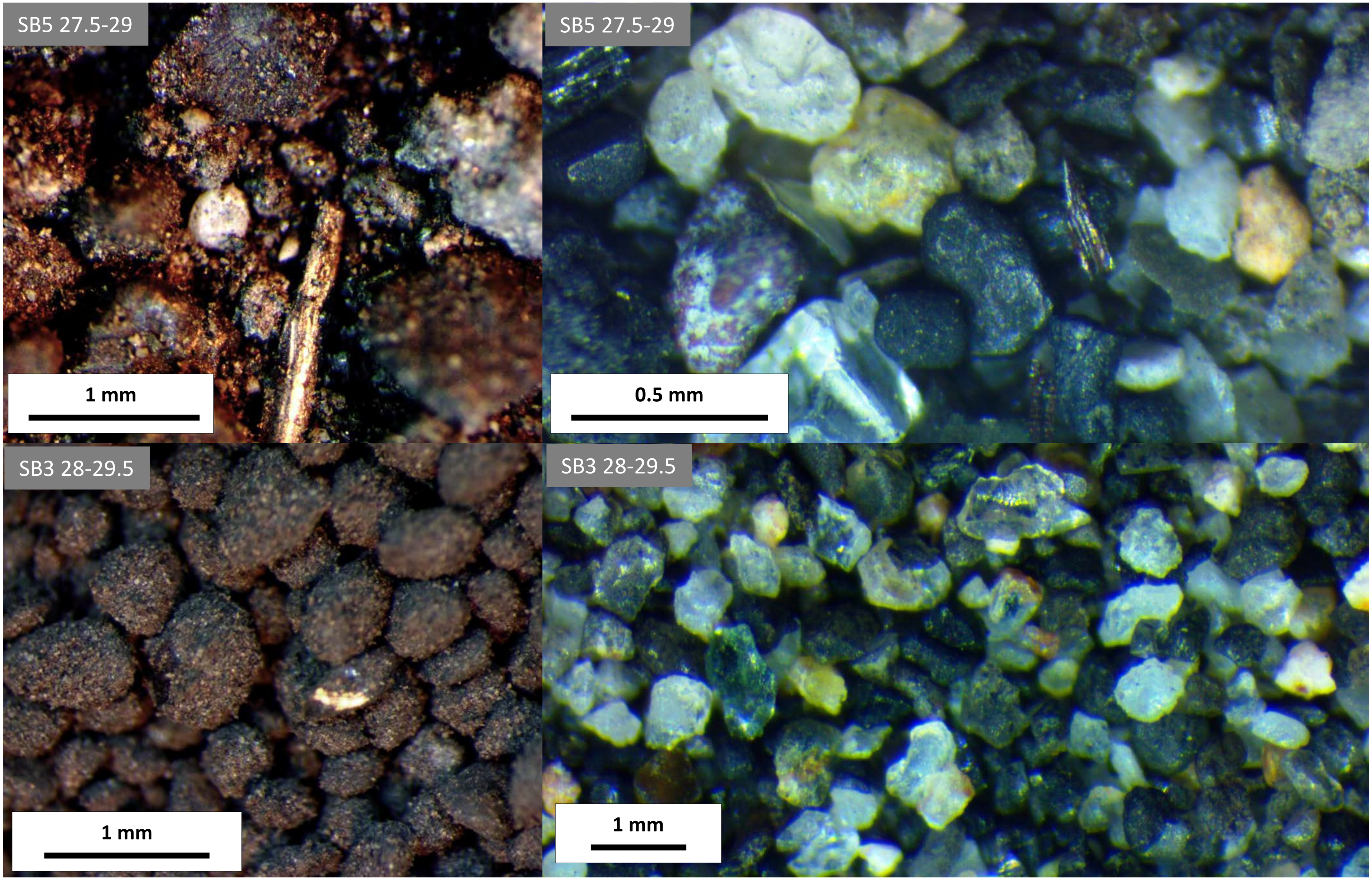


Bead wires (top) and rubber pieces (bottom) were observed in the majority of samples examined by microscopy.

Figure 4
Tire Rubber and Bead Material in Soil Samples
Balefill Subsurface Black Powder Material Characterization
Pasco Landfill NPL Site



Fiber melt features observed in several samples, with fibers that appear fused, deformed, and embedded in a dark matrix. The SB7 25 to 26.5 sample has fused fibers.



The images on the left show the material as received; those on the right show the material after rinsing to remove the black coating from the grains.

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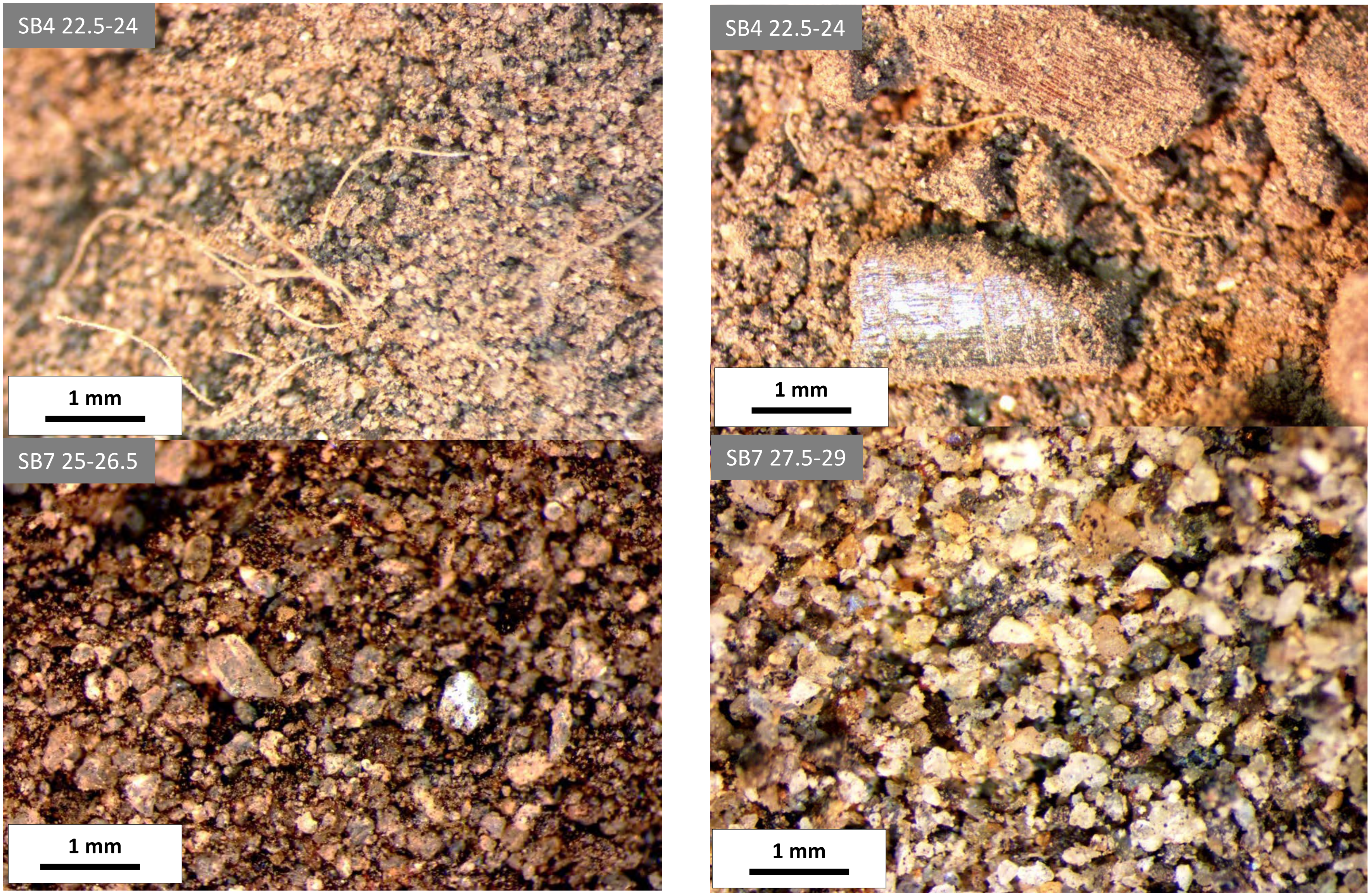
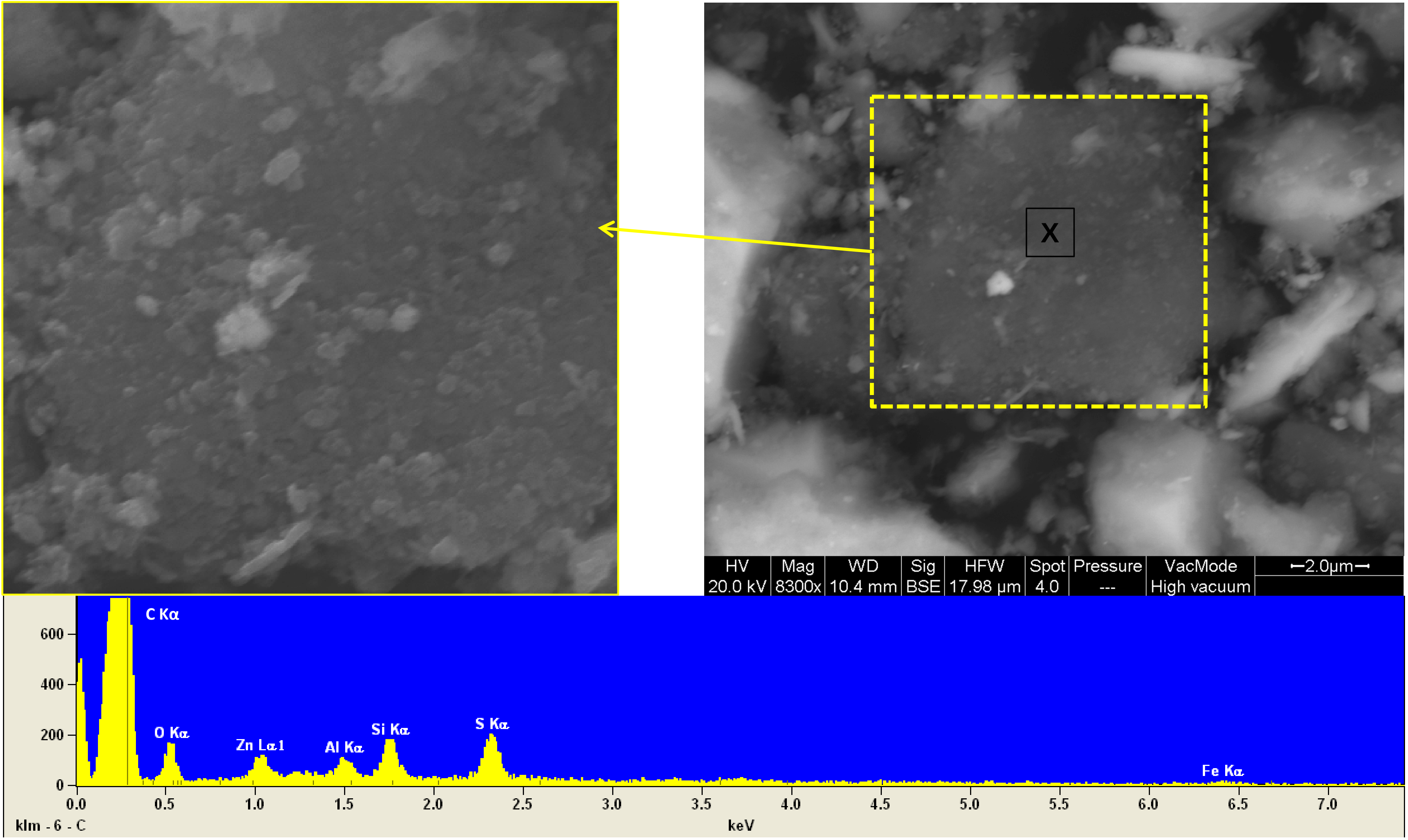
Figure 6
Black Coating on Soil Grains
Balefill Subsurface Black Powder Material Characterization
Pasco Landfill NPL Site

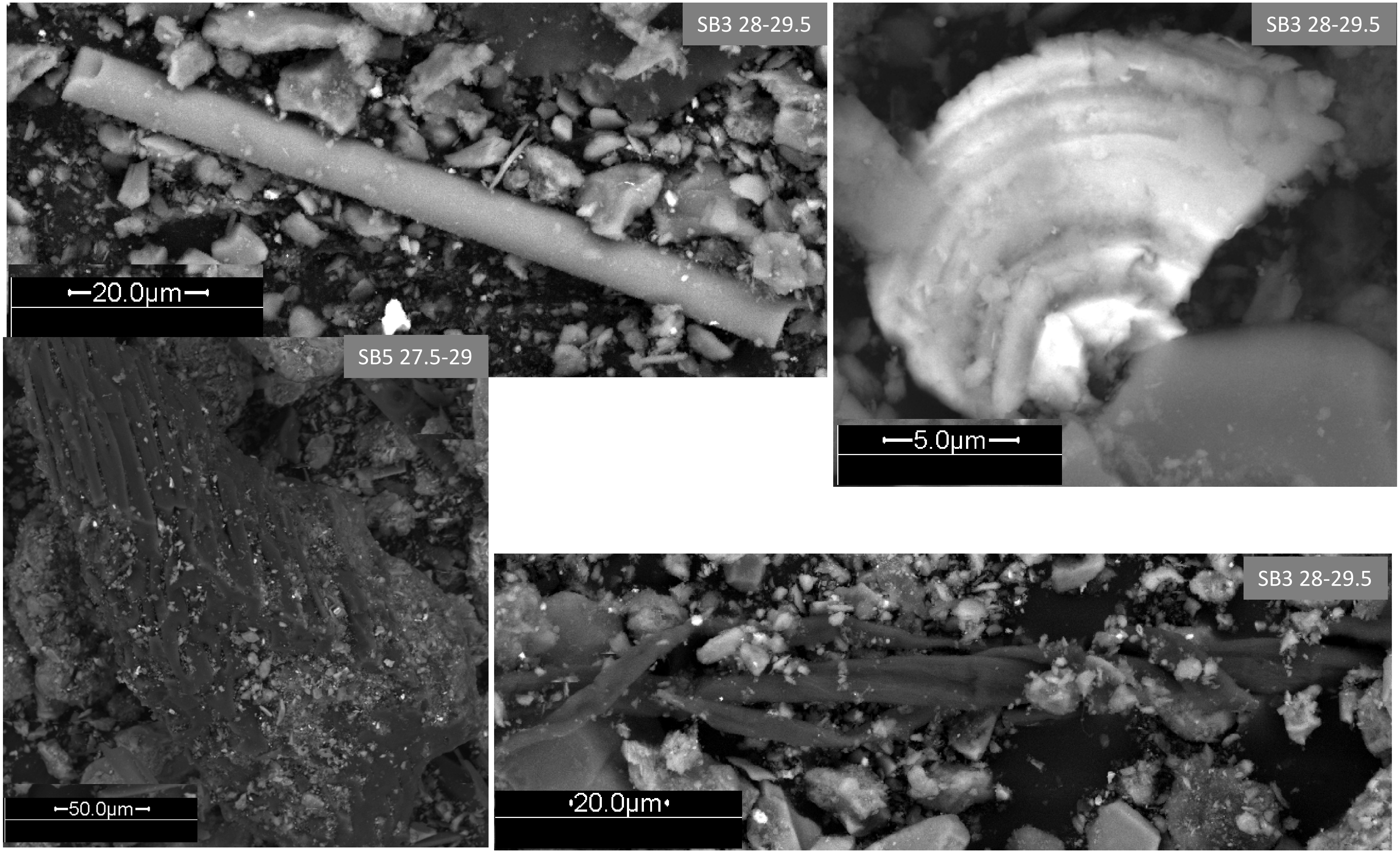


Minimal tire material was observed in samples from SB4 and SB7. Additionally, material recovered was consistent with expected fill/aquifer solids material, without black material coating the grains. Based on observation of recovered material, the intervals examined are representative.

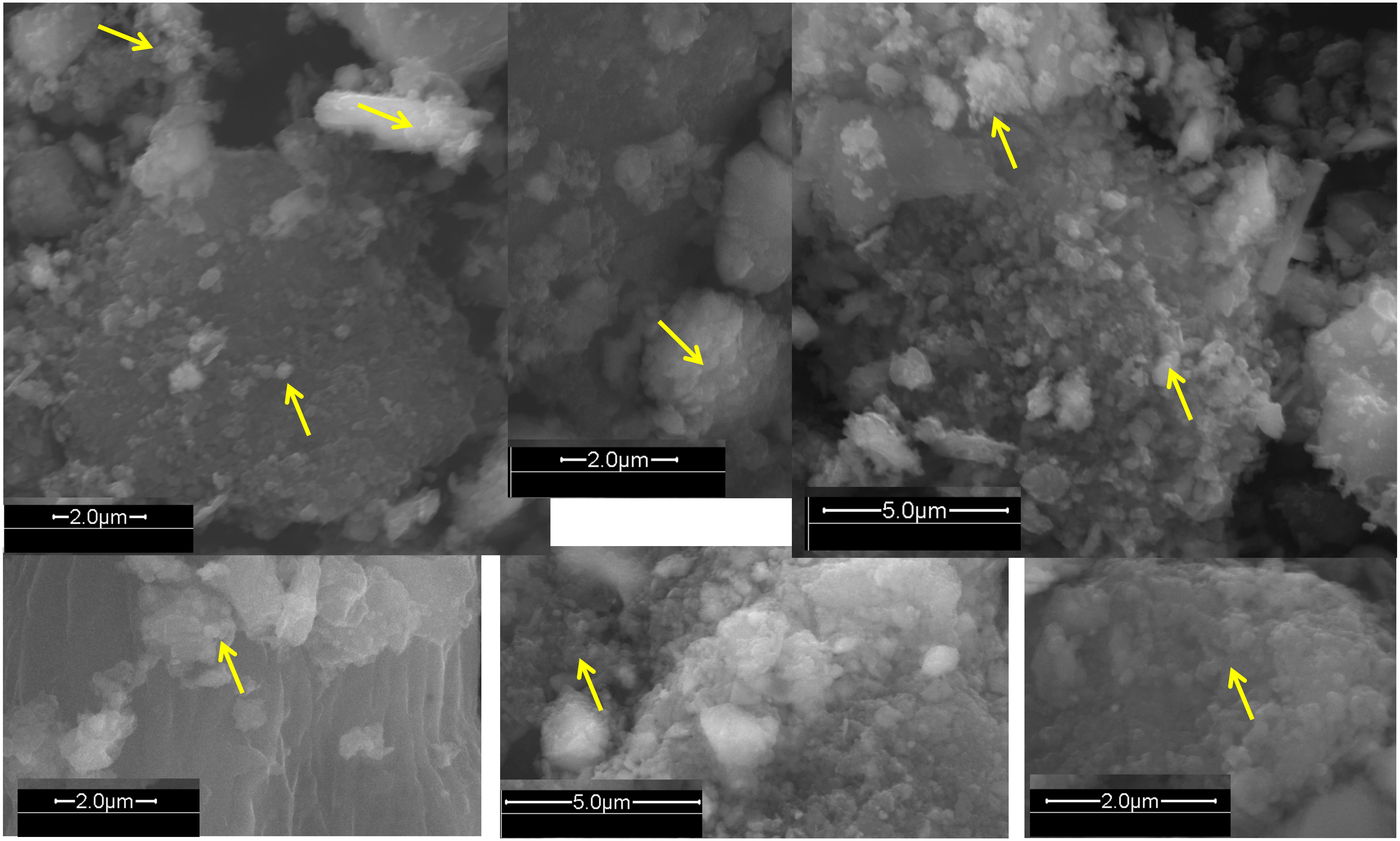
Figure 7
Uncoated Soil Material from SB4 and SB7
Balefill Subsurface Black Powder Material Characterization
Pasco Landfill NPL Site



Example high-resolution scanning electron microscopy (HRSEM) results for SB3 28 to 29.5. Top left shows magnified secondary electron image, showing sample surface features; top right the back-scatter electron (BSE) image, showing the relative atomic mass; and the bottom panel shows the energy dispersive X-ray (EDX) spectra at point X. This sample is predominantly carbon and also contains oxygen, sulfur, silicon, zinc, iron, and aluminum, a composition consistent with tire rubber.



Tire features were observed at very fine scale: top left—fiberglass fiber, top right—bead wire, bottom left and right—carcass fibers



Small surface features consistent with carbon black are observed on the grains in secondary electron images; however, these very thin features do not allow resolution surface features from the underlying grain by energy dispersive x-ray (EDX) or back-scatter electron (BSE), and composition of the surface coating can't be determined by HRSEM. This figure shows magnified images of grain surfaces from SB3 28 to 29.5.

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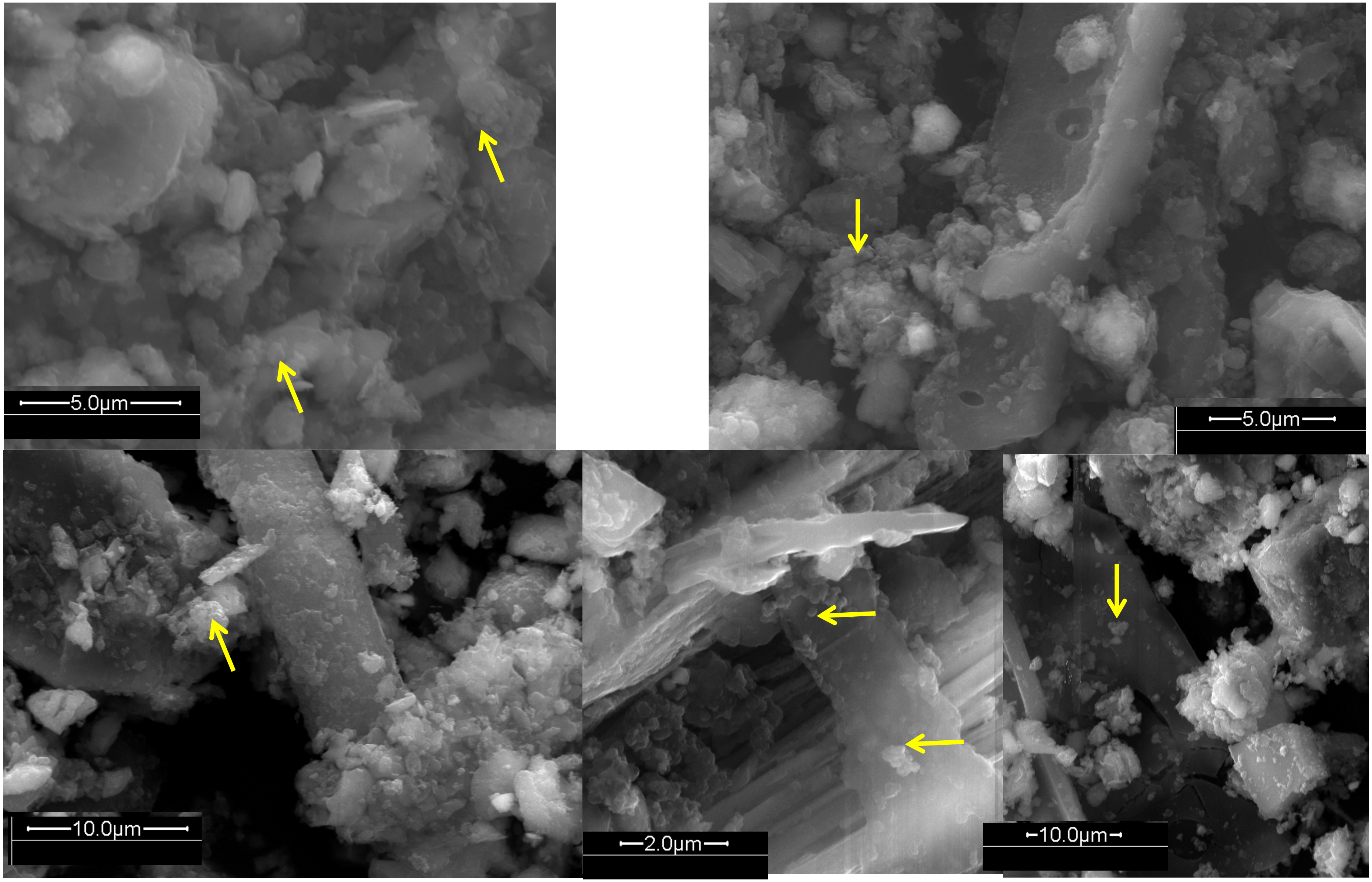
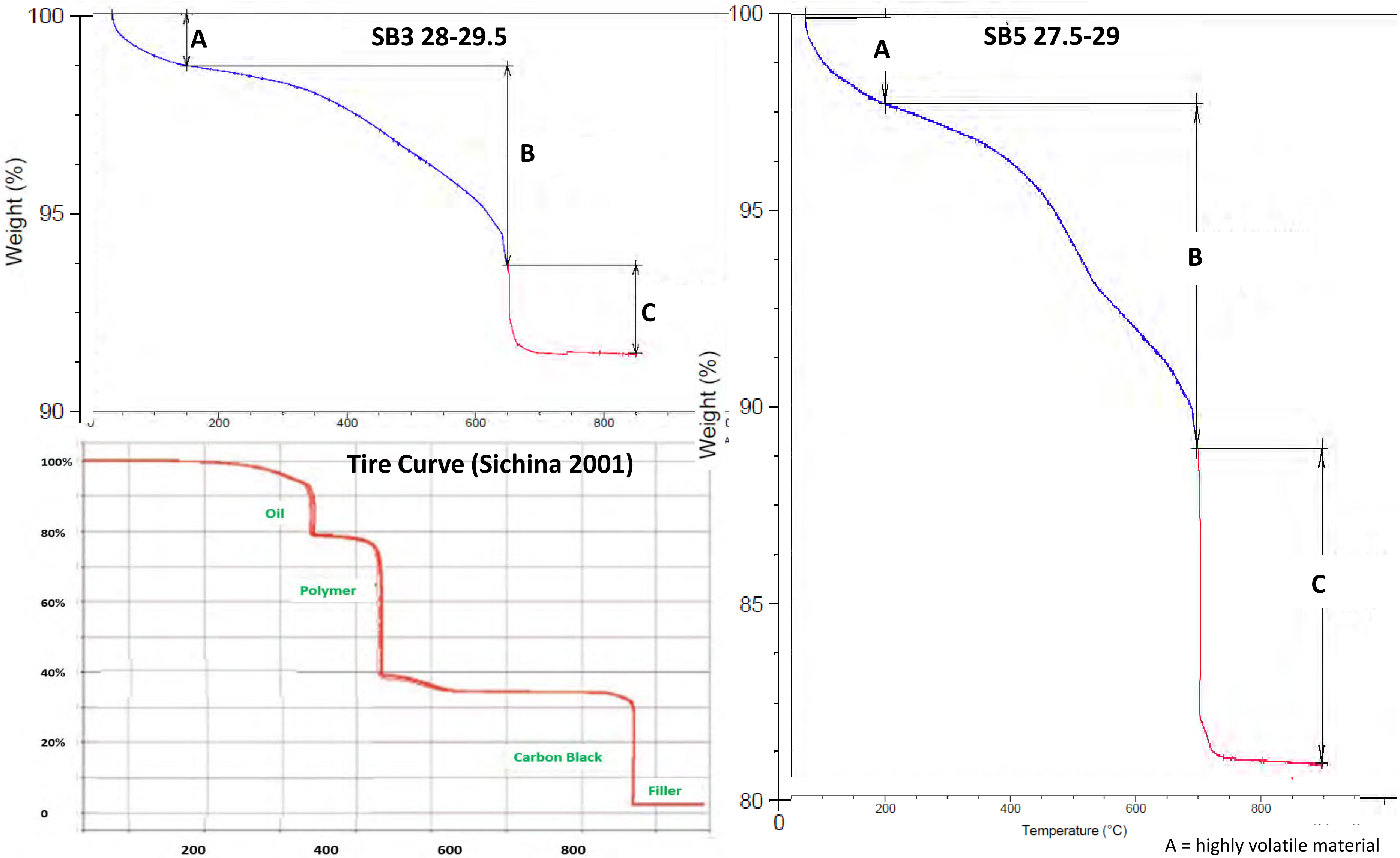
Figure 10
Potential Carbon Black in SB3
Balefill Subsurface Black Powder Material Characterization
Pasco Landfill NPL Site



Potential carbon black surface features on grain surfaces for sample SB5 27.5 to 29.

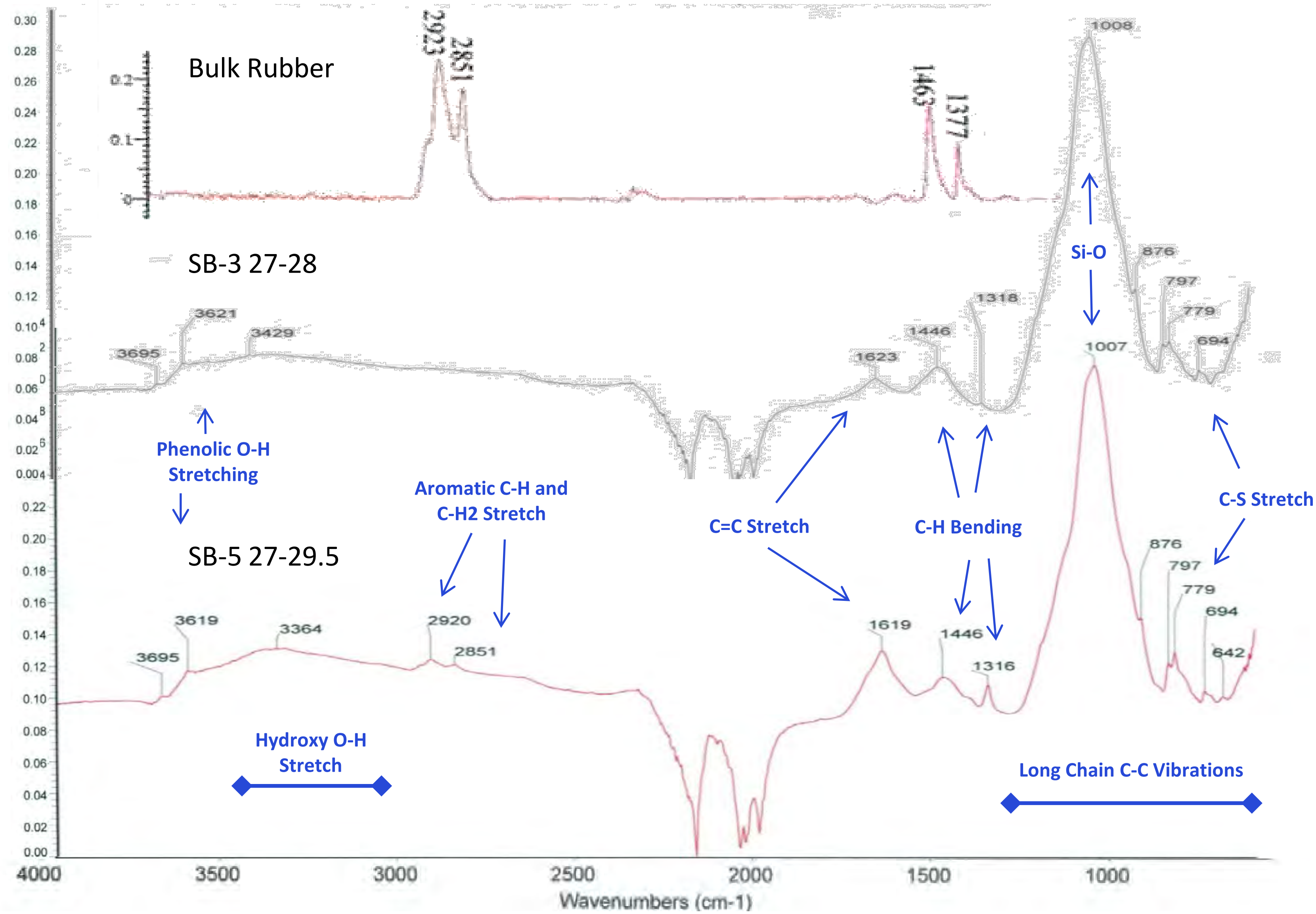
Figure 11
Potential Carbon Black in SB5
Balefill Subsurface Black Powder Material Characterization
Pasco Landfill NPL Site



A = highly volatile material
B = medium volatile material
C = combustible material

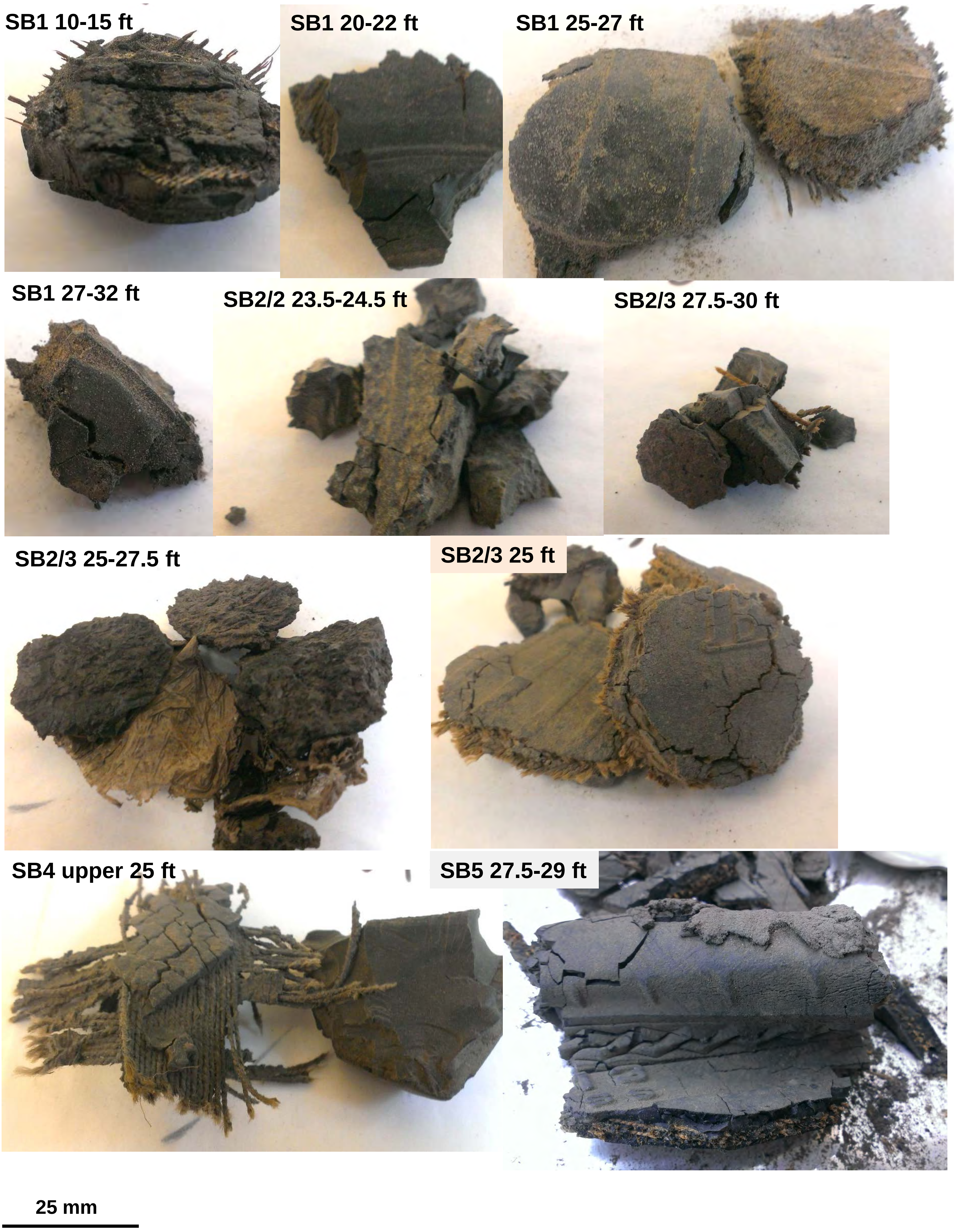
Thermogravimetric analysis (TGA) curves of the less than 50 micron size fraction with an example TGA curve for tire material.

Figure 12
TGA Curves for SB3 and SB5 Soil Samples
Balefill Subsurface Black Powder Material Characterization
Pasco Landfill NPL Site



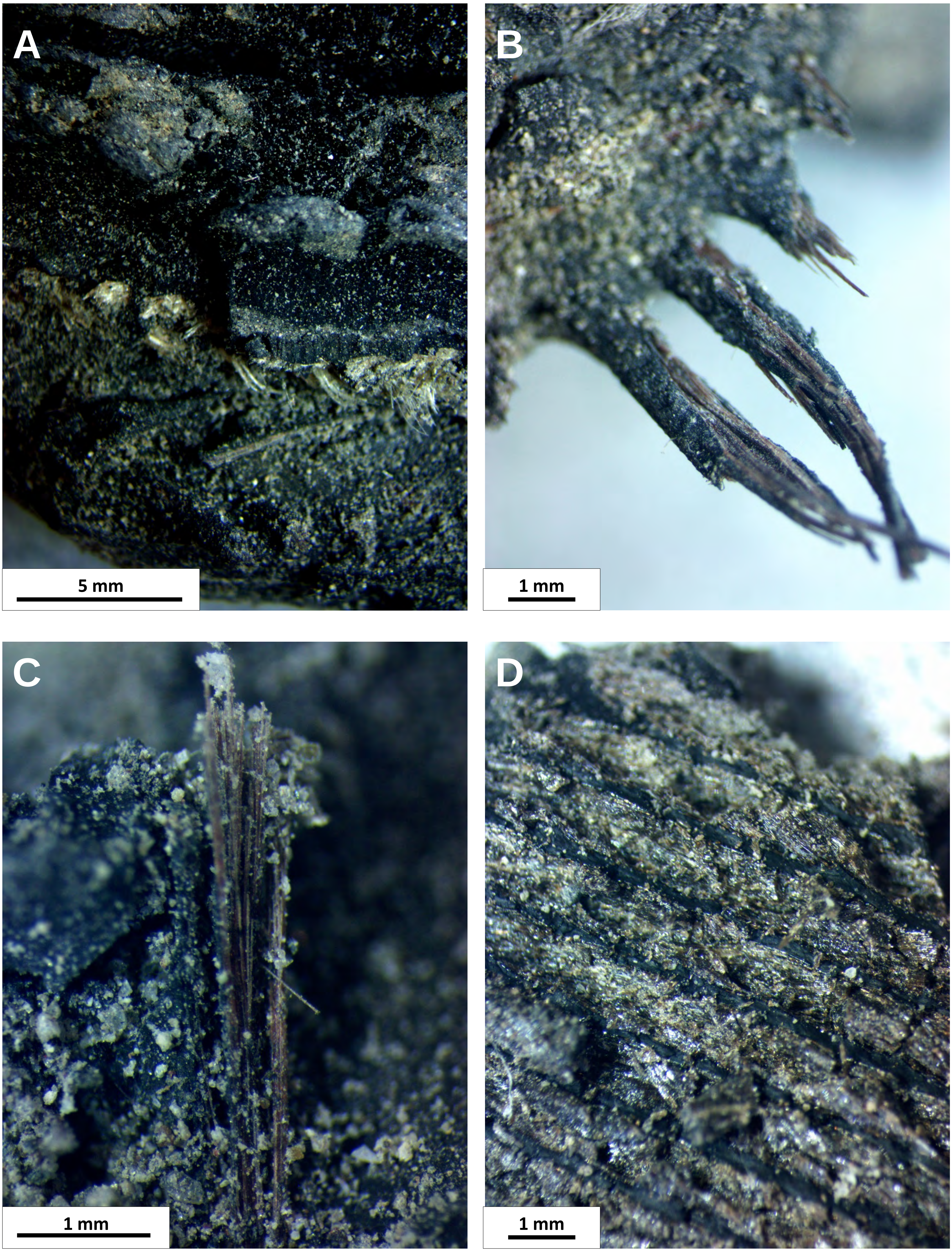
Fourier transform infrared (FTIR) spectra of styrene-butadiene rubber, SB3 28 to 29.5, and SB5 27.5 to 29 fines. Peak identification based on Coates 2000.

ATTACHMENT A
OPTICAL PHOTOMICROGRAPHS

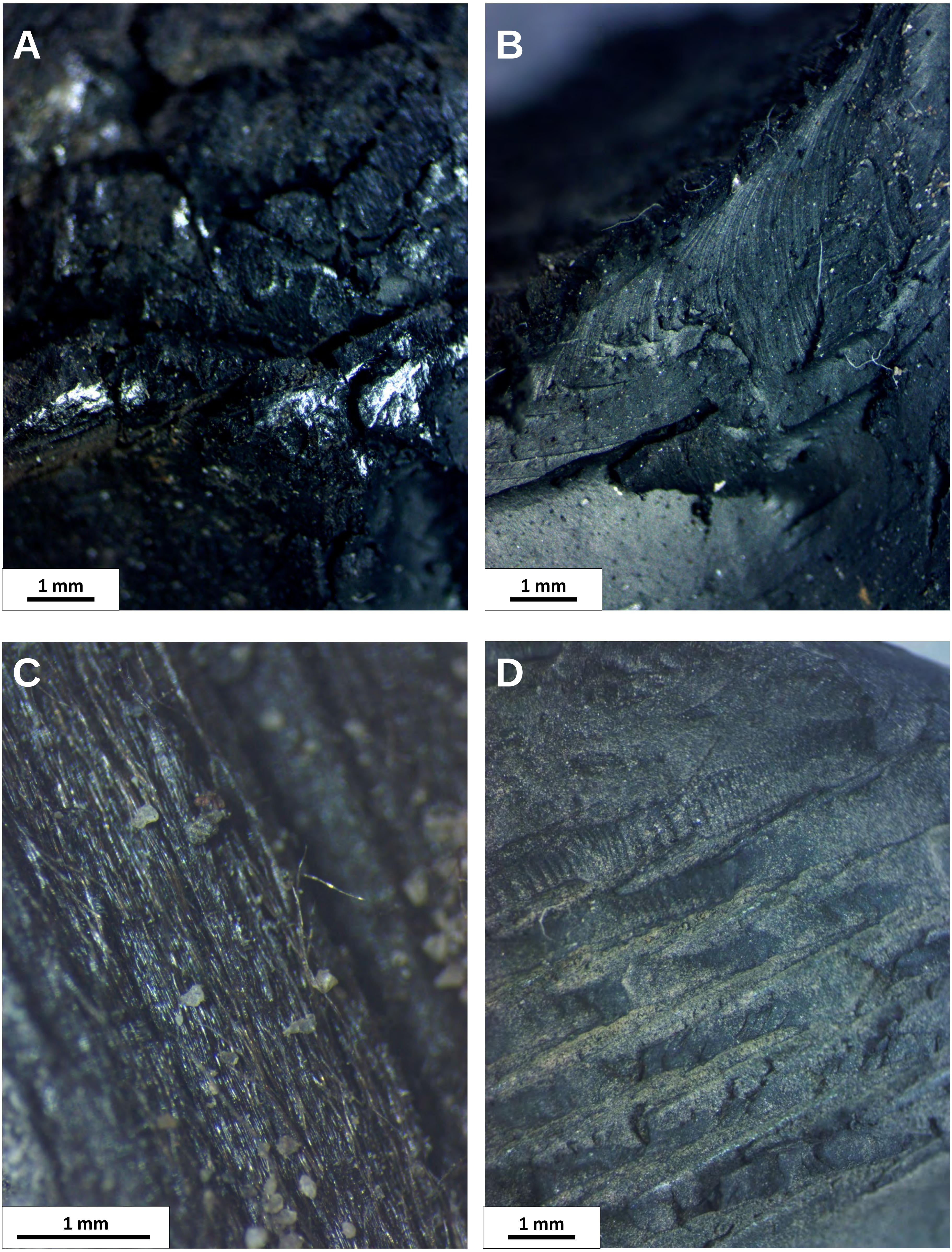


Tire material recovered from soil boring. Recognizable macroscopic tire material was recovered from SB1, SB2/2, SB2/3, SB4, and SB5.

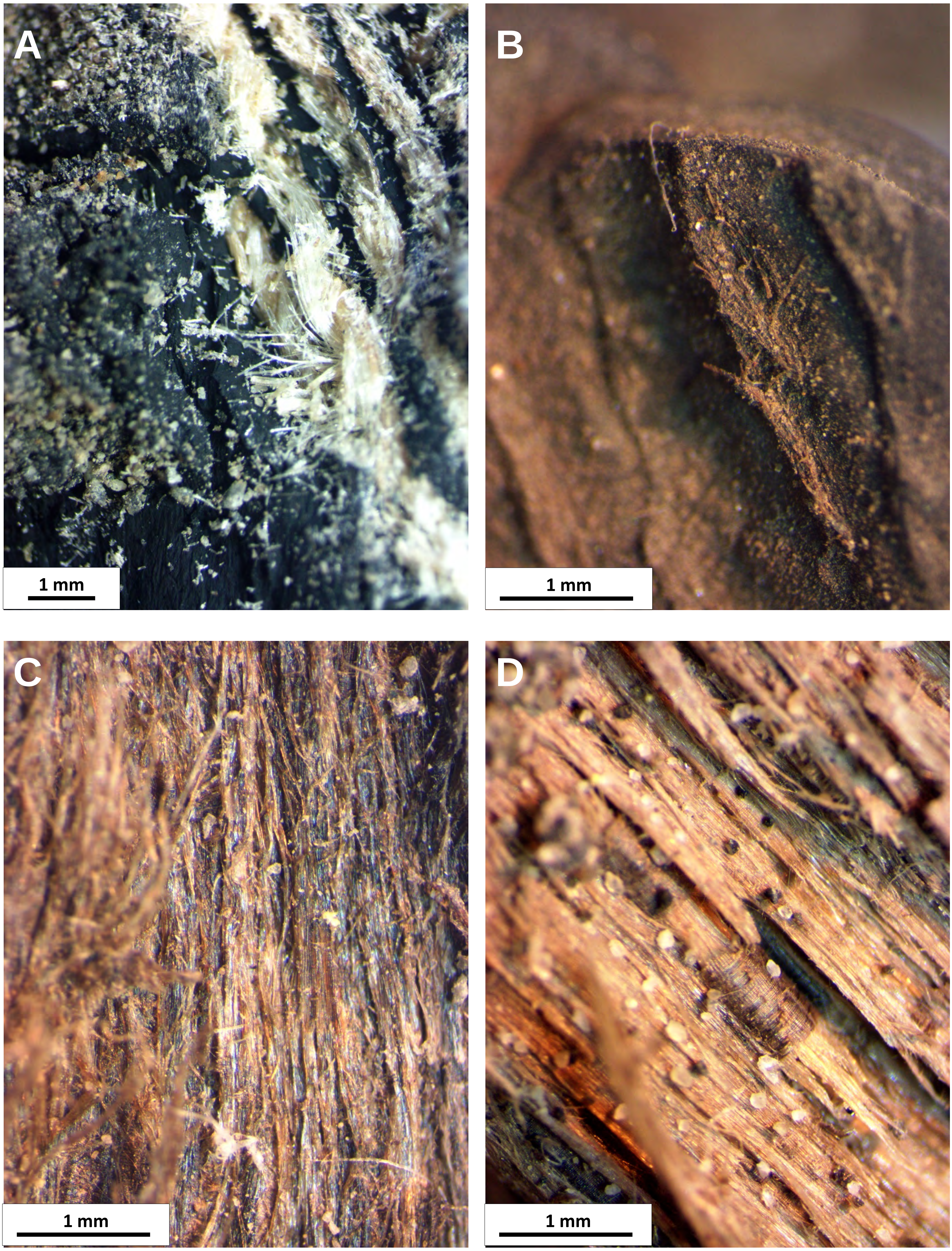
Figure 1
Tire Material
Balefill Subsurface Black Powder Material Characterization
Pasco Landfill NPL Site



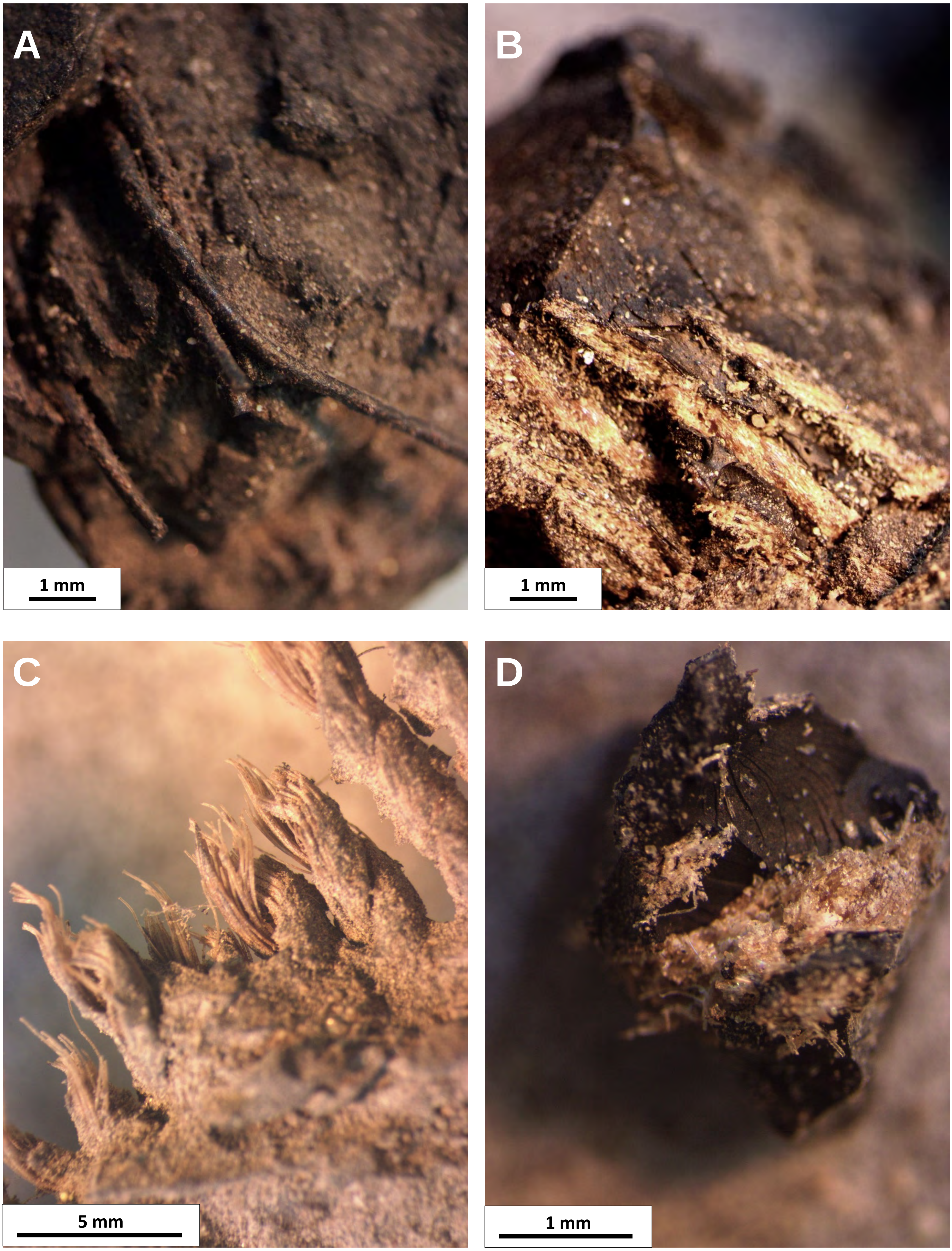
Tire rubber (see Figure 1) recovered from SB1 10 to 15 feet (A) and exposed fibers on the same (B). Tire material from SB1 15 to 20 feet (C) and from SB1 20 to 22 feet (D).



Tire material (see Figure 1) recovered from SB1 22 to 25 feet (A and B) and from SB1 25 to 27 feet (C and D).



Tire material (see Figure 1) recovered from SB1 27 to 32 feet.



Tire material (see Figure 1) recovered from SB2/2 20 to 23.5 feet (A, B, and C) and SB2/2 23.5 to 24 feet (D).

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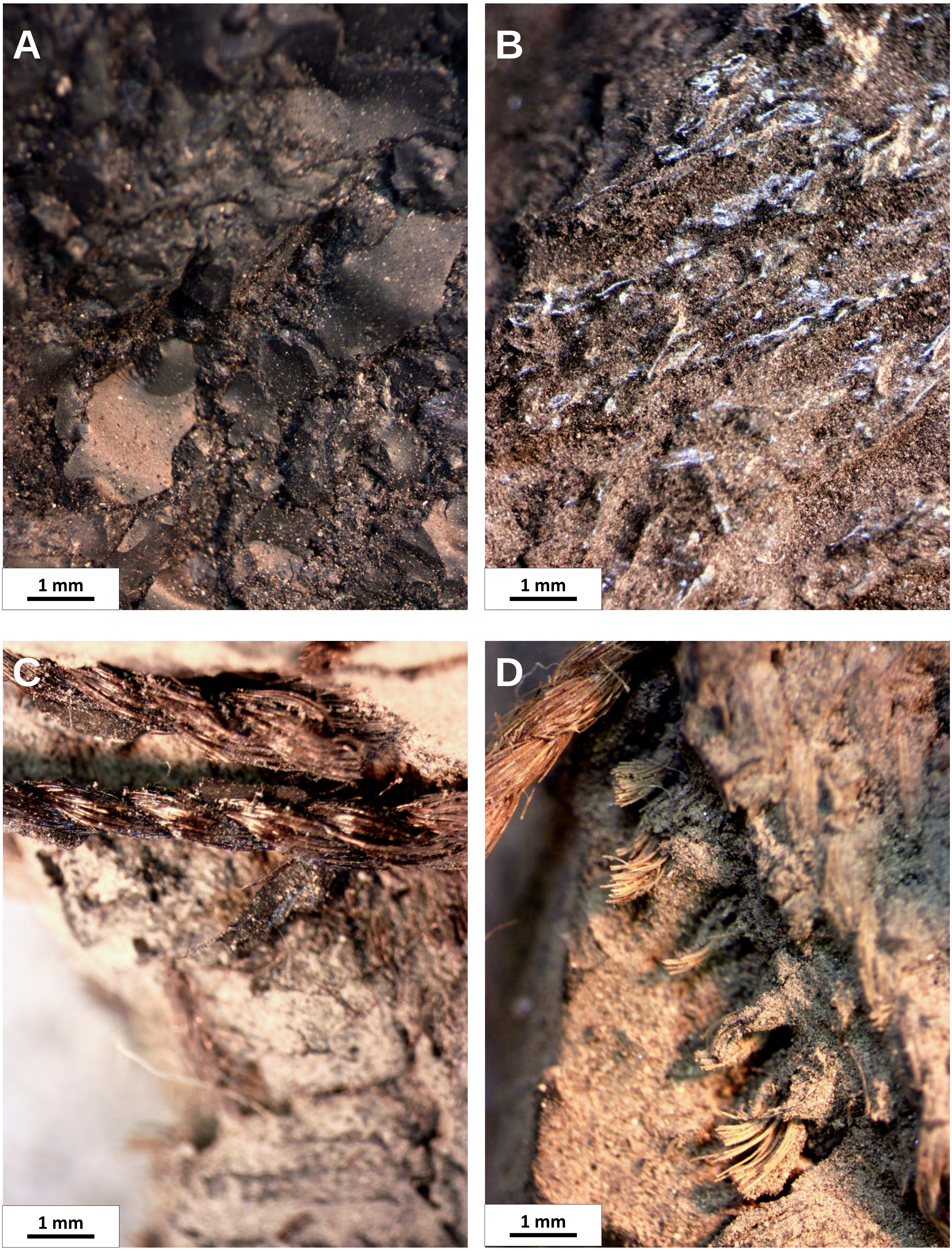
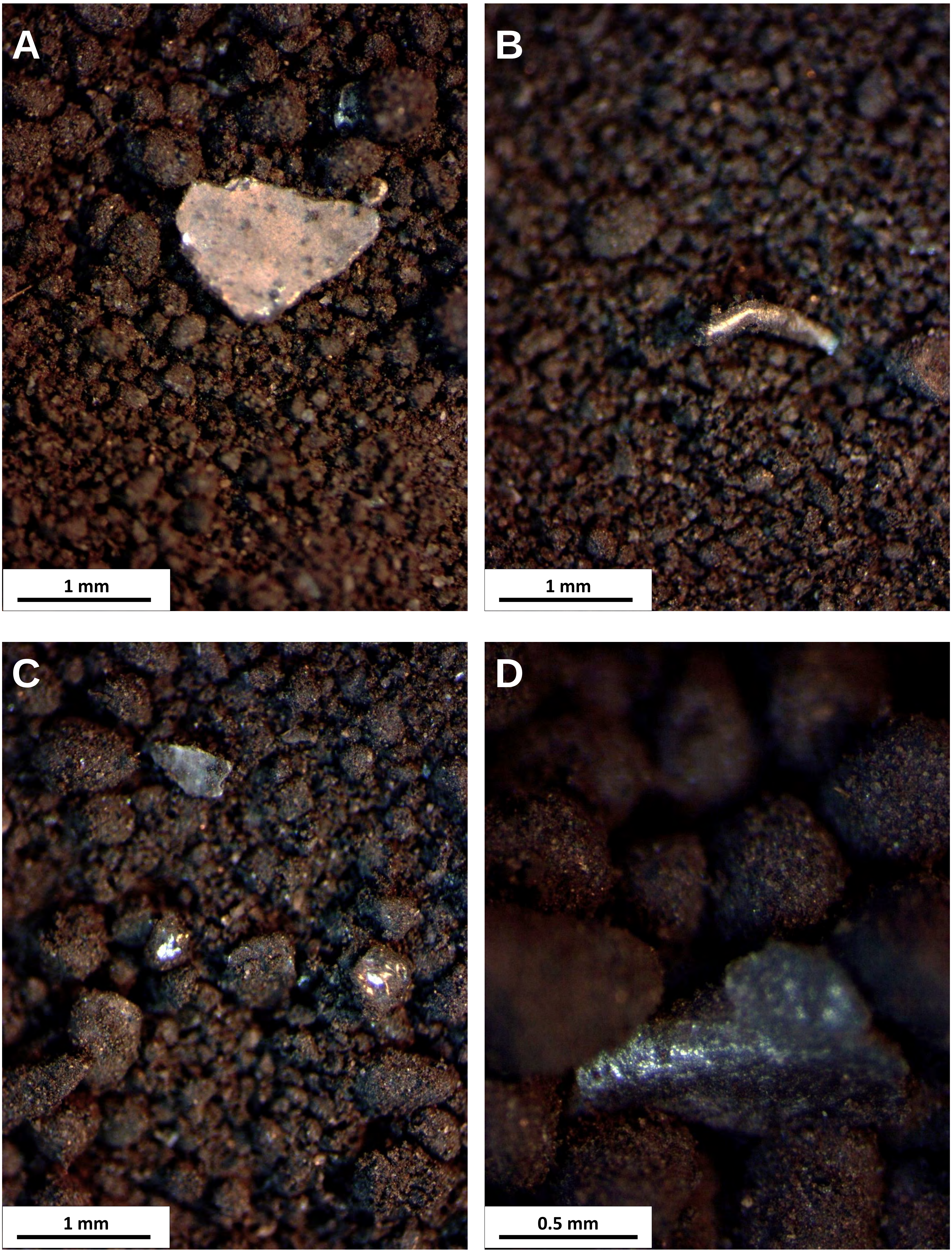
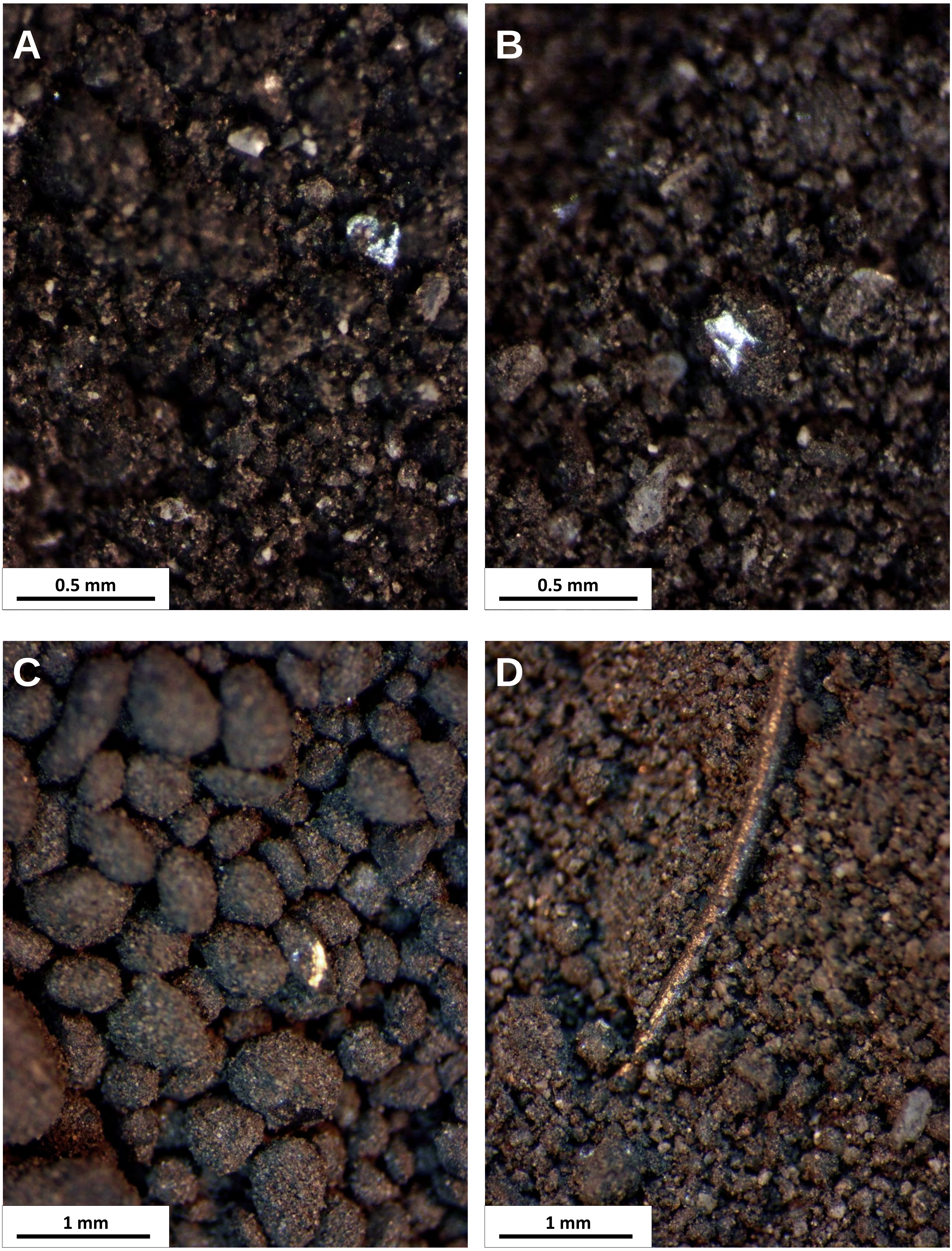
Figure 5
SB2/2 20 to 23.5 Feet and 23.5 to 24 Feet
Balefill Subsurface Black Powder Material Characterization
Pasco Landfill NPL Site



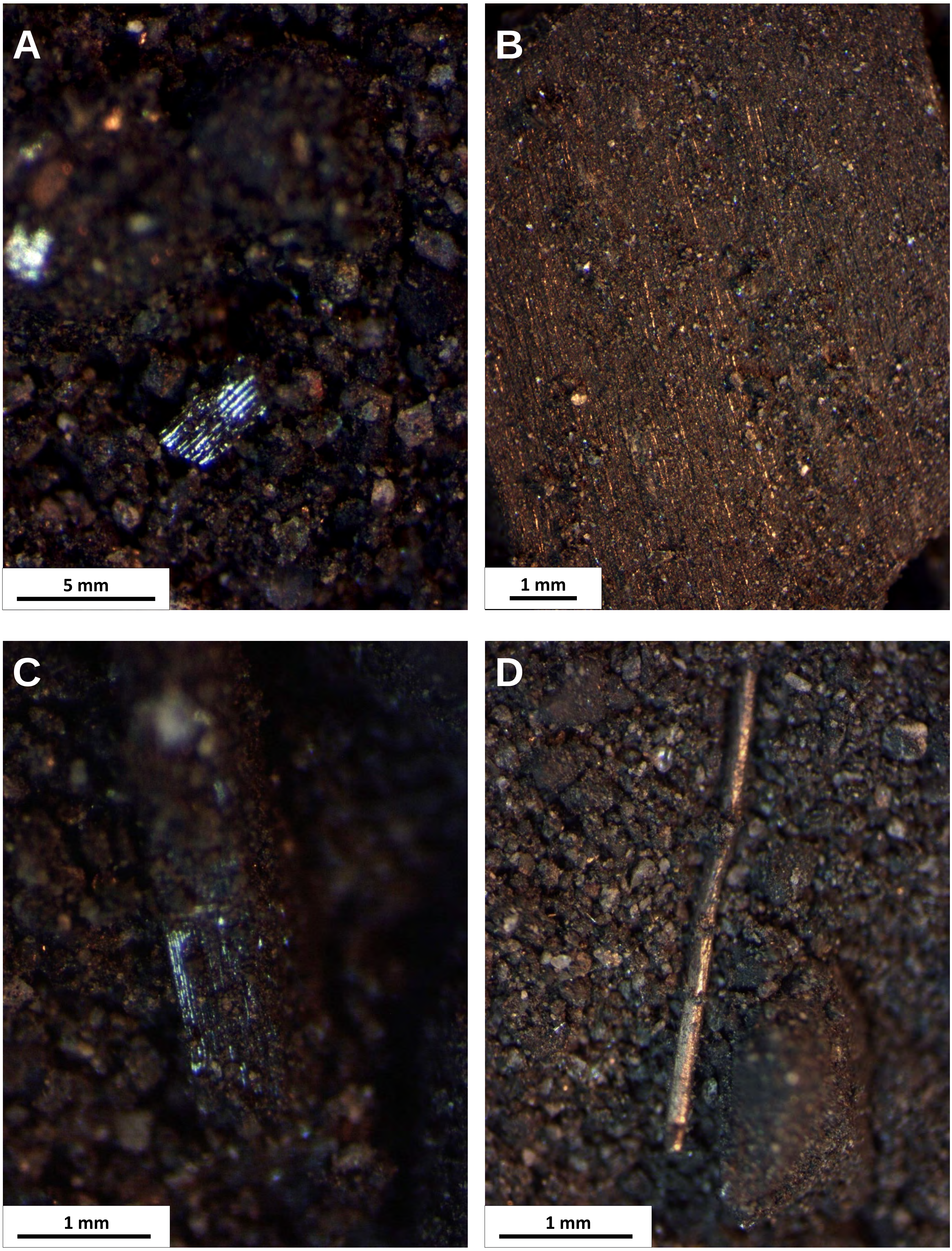
Tire material (see Figure 1) recovered from SB2/3 25 to 27.5 feet (A, B, and C) and from 27.5 to 30 feet (D).



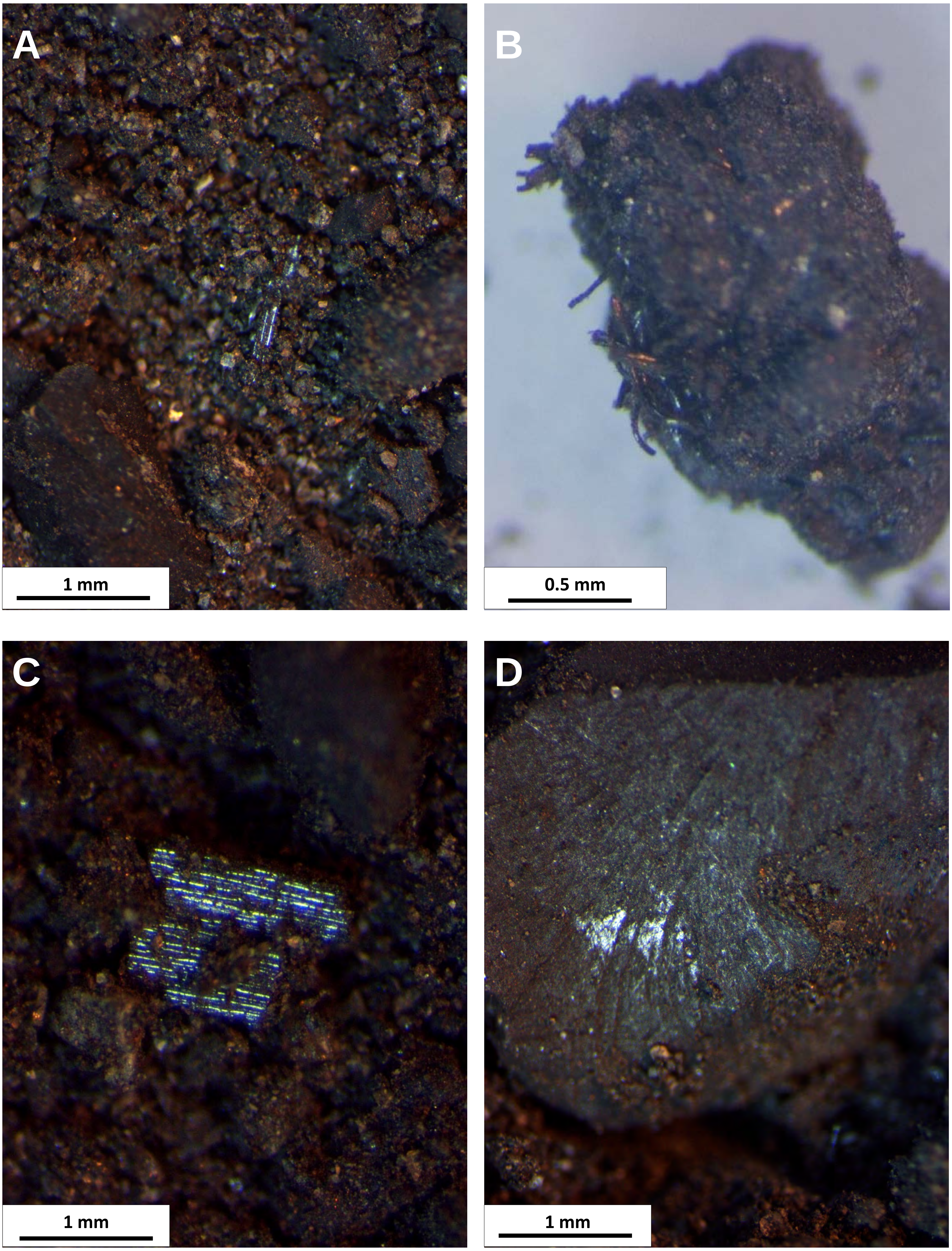
Black material from the 28- to 29.5-foot interval of SB3.



Gray material from the 28- to 29.5-foot interval of SB3.

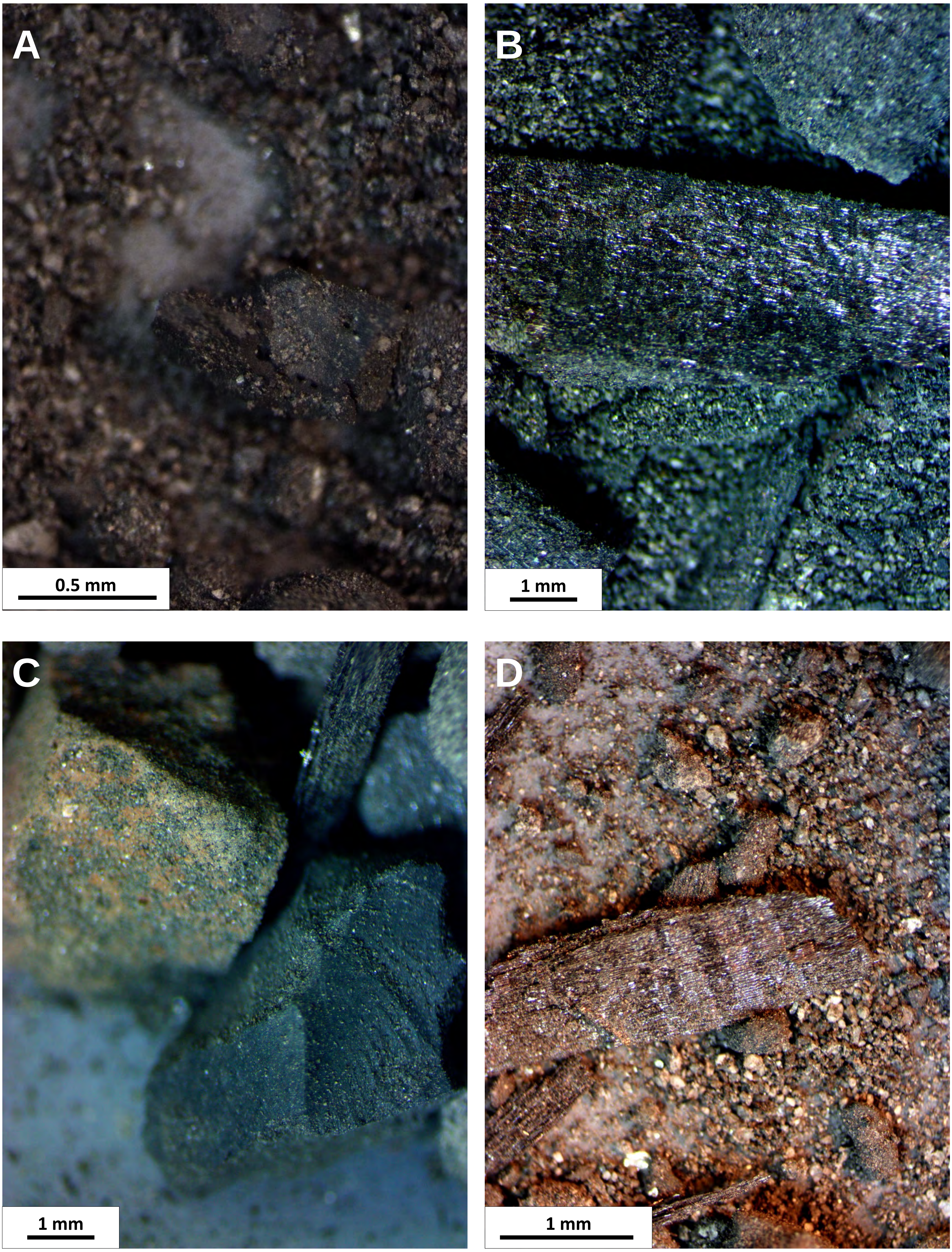


Black material from the 27.5- to 29-foot interval of SB5.

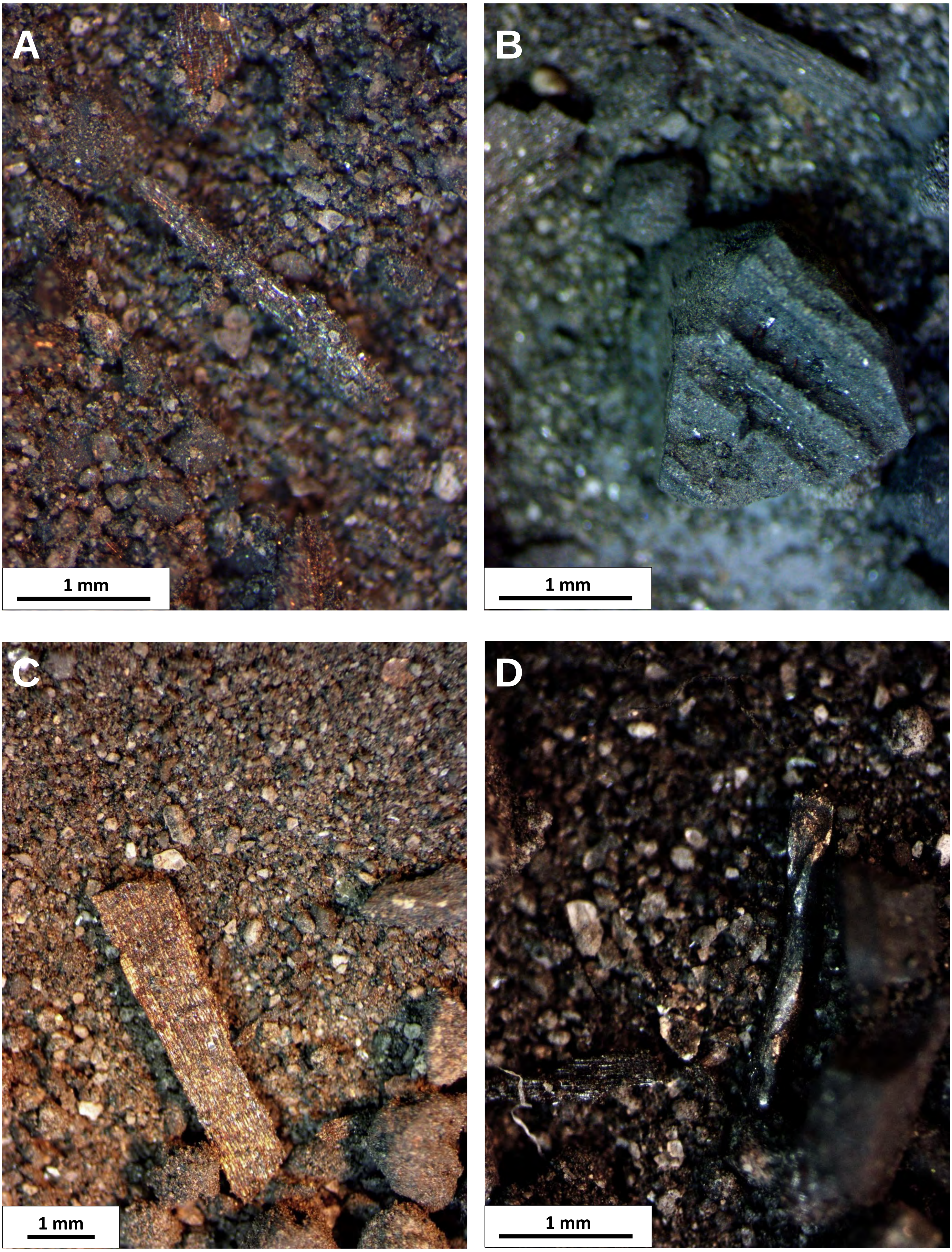


Black material from the 27.5- to 29-foot interval of SB5.

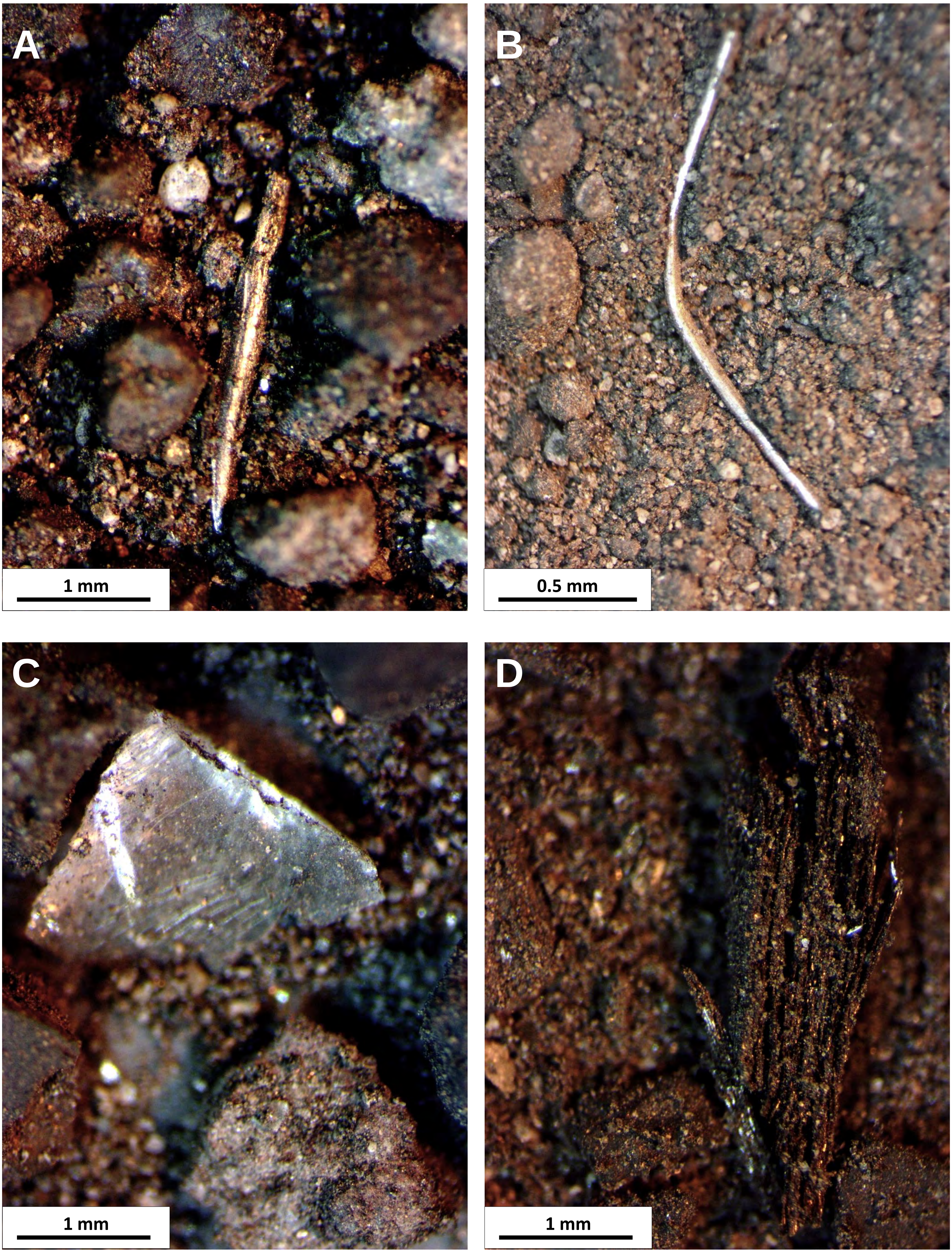
Figure 10
SB5 27.5 to 29 Feet, Black Material
Balefill Subsurface Black Powder Material Characterization
Pasco Landfill NPL Site



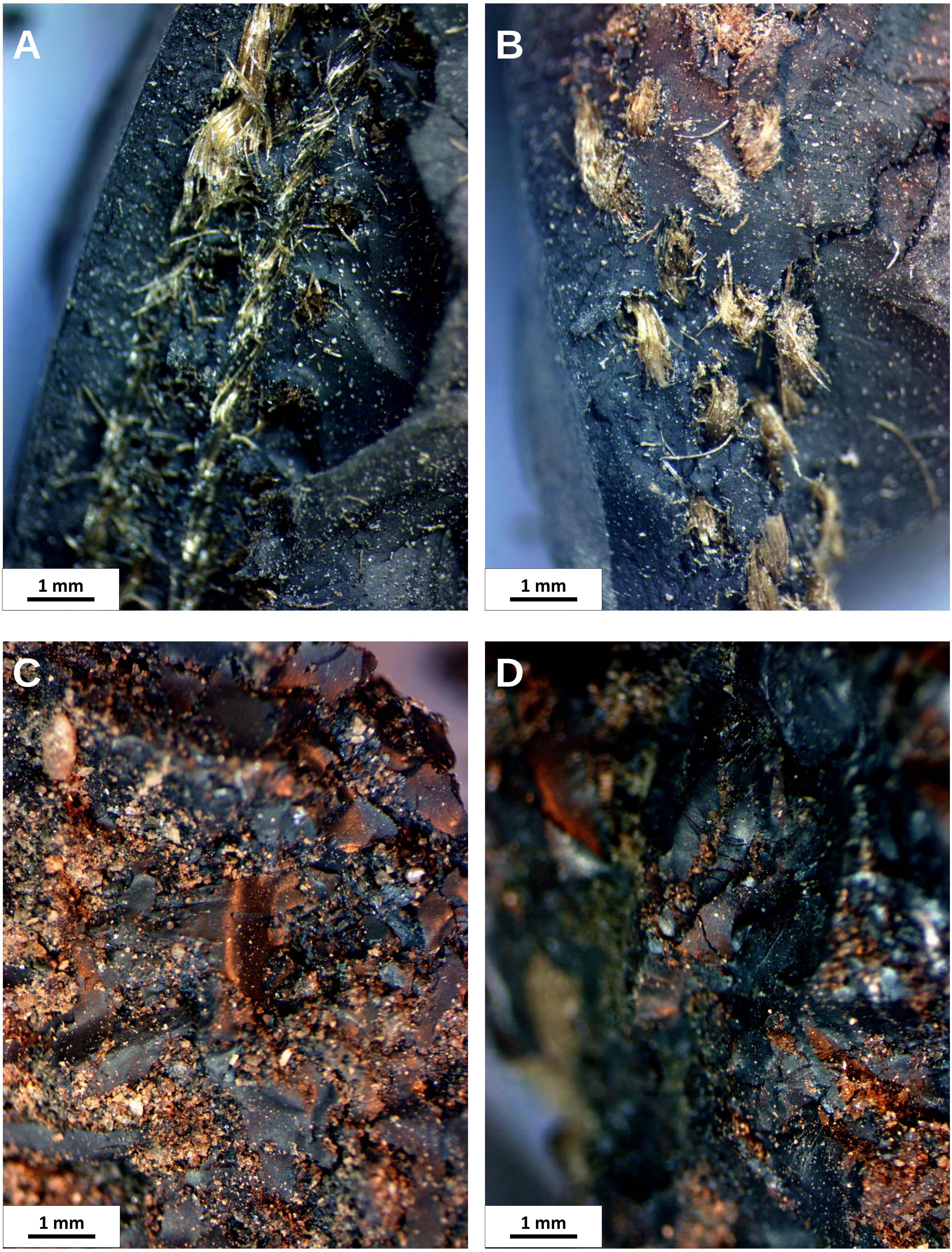
Gray material from the 27.5- to 29-foot interval of SB5.



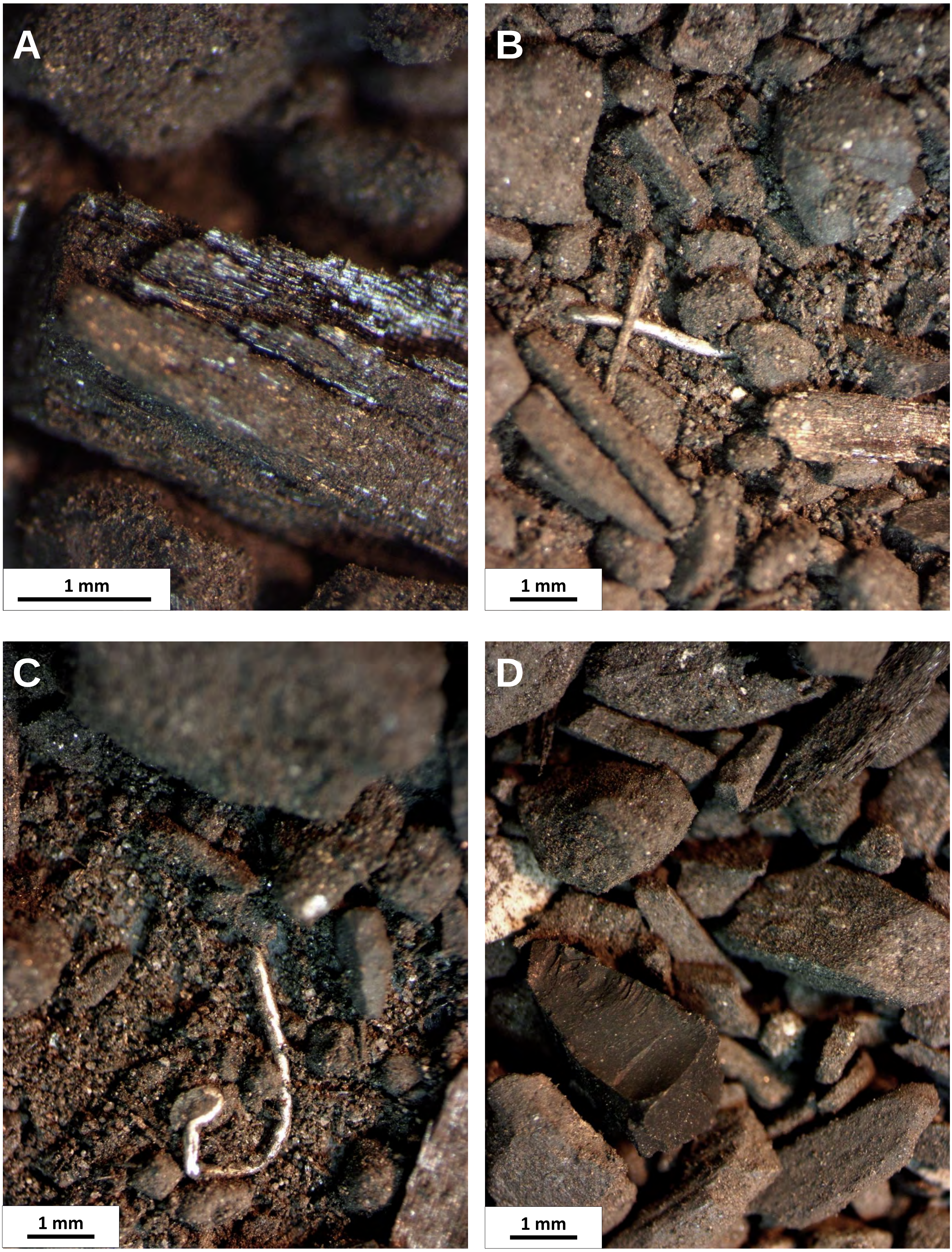
Gray material from the 27.5- to 29-foot interval of SB5.



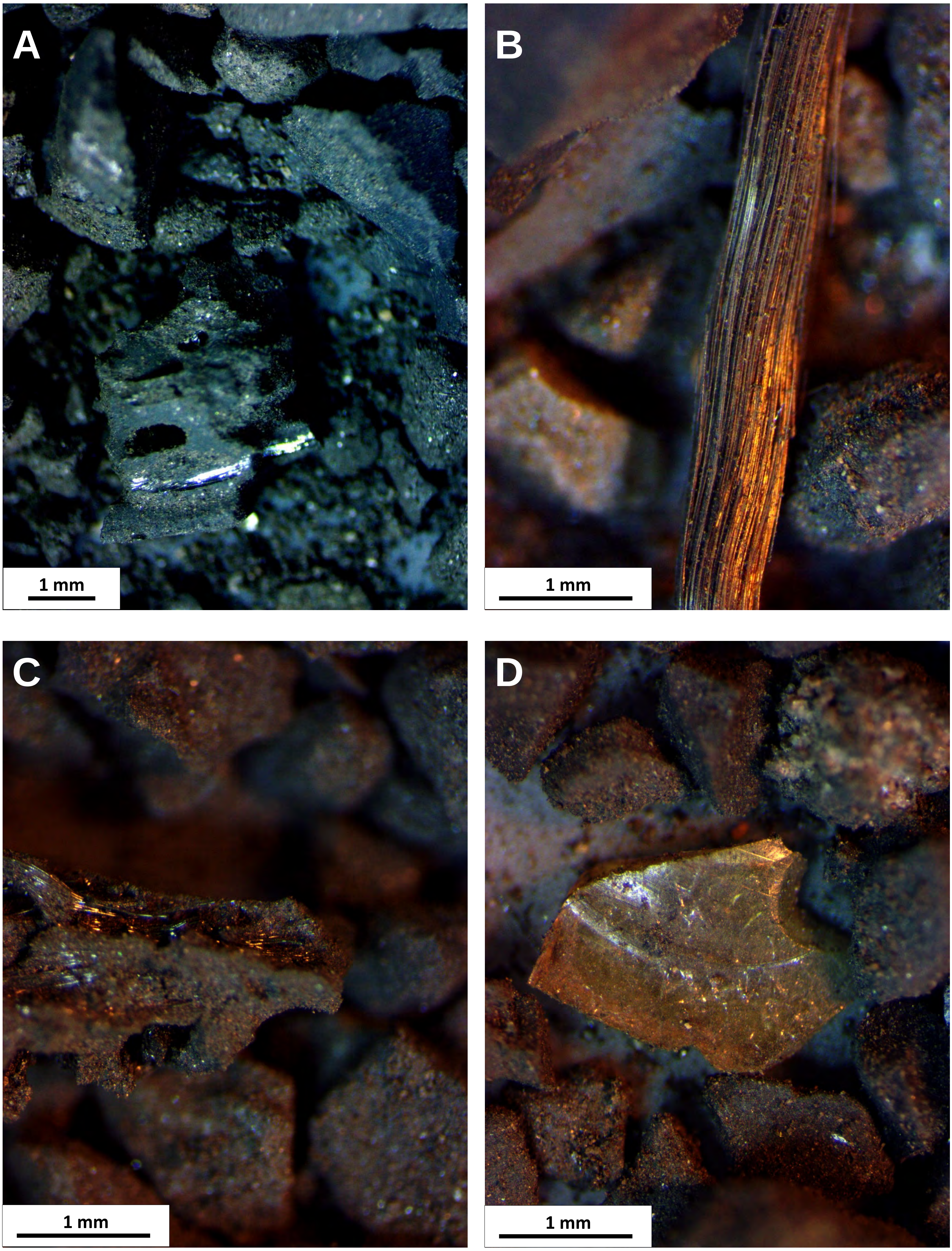
Gray material from the 27.5- to 29-foot interval of SB5.



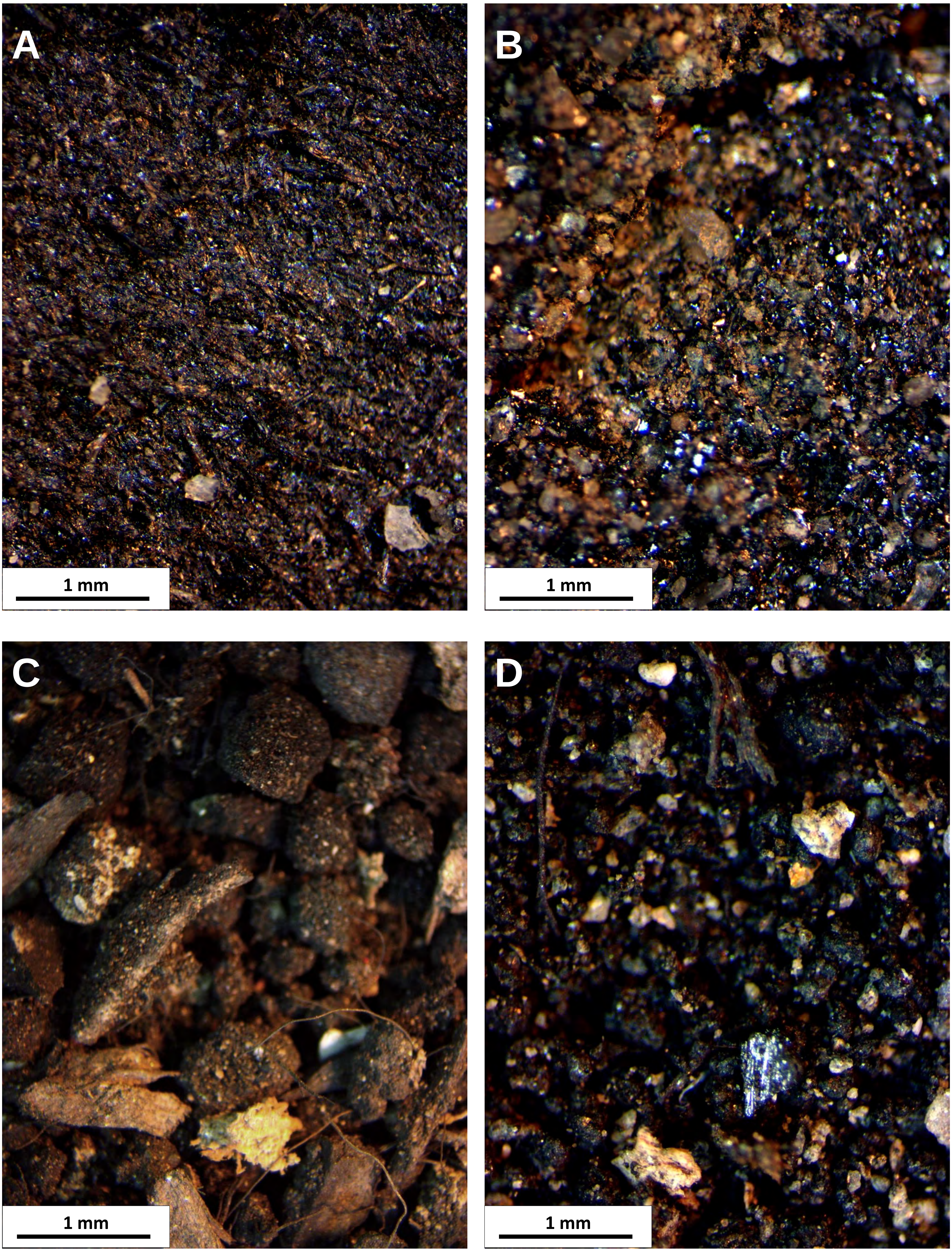
Tire material (see Figure 1) from the 27.5- to 29-foot interval of SB5.



Material from the 30- to 31.5-foot interval of SB5.

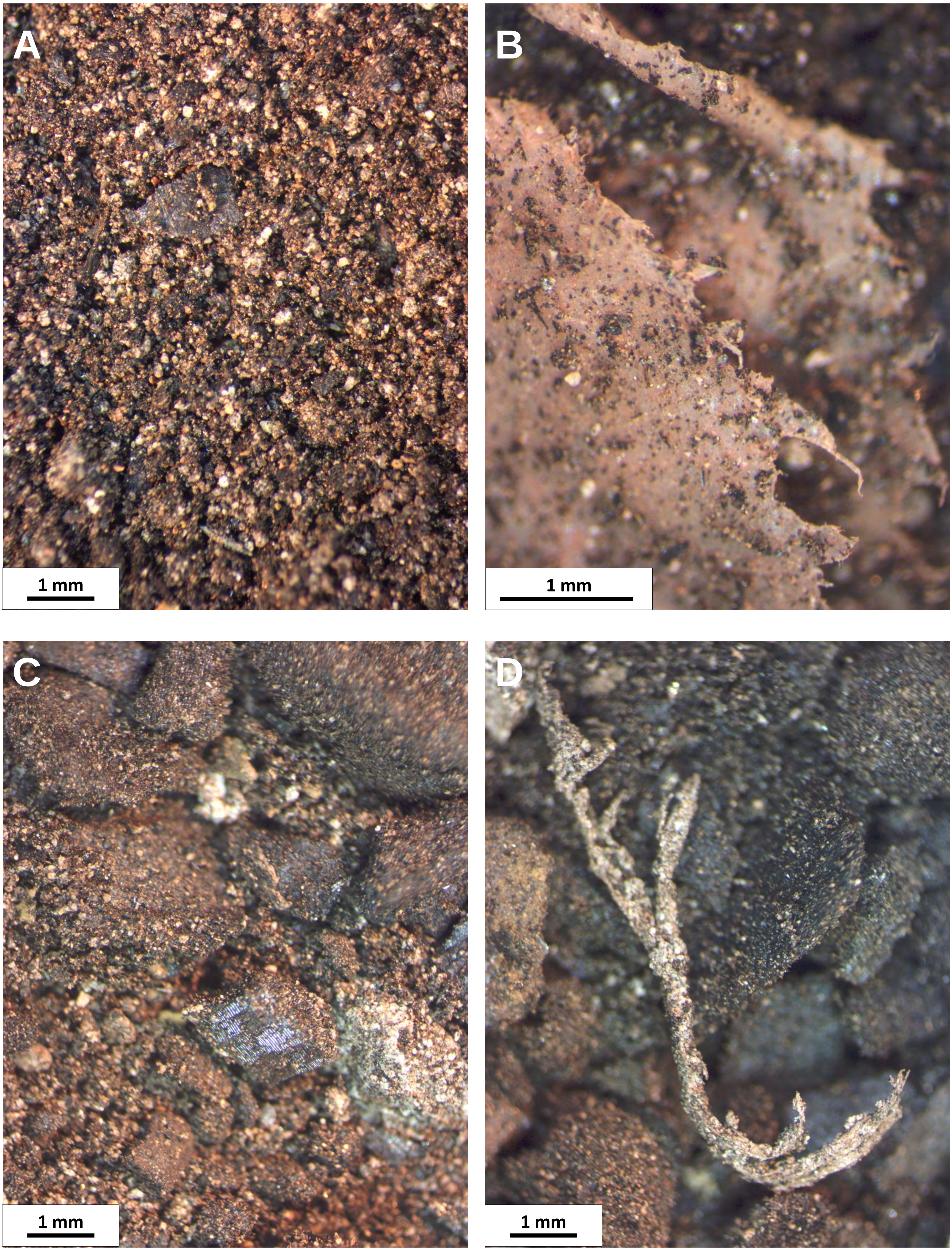


Material from the 25- to 26.5-foot interval of SB5.

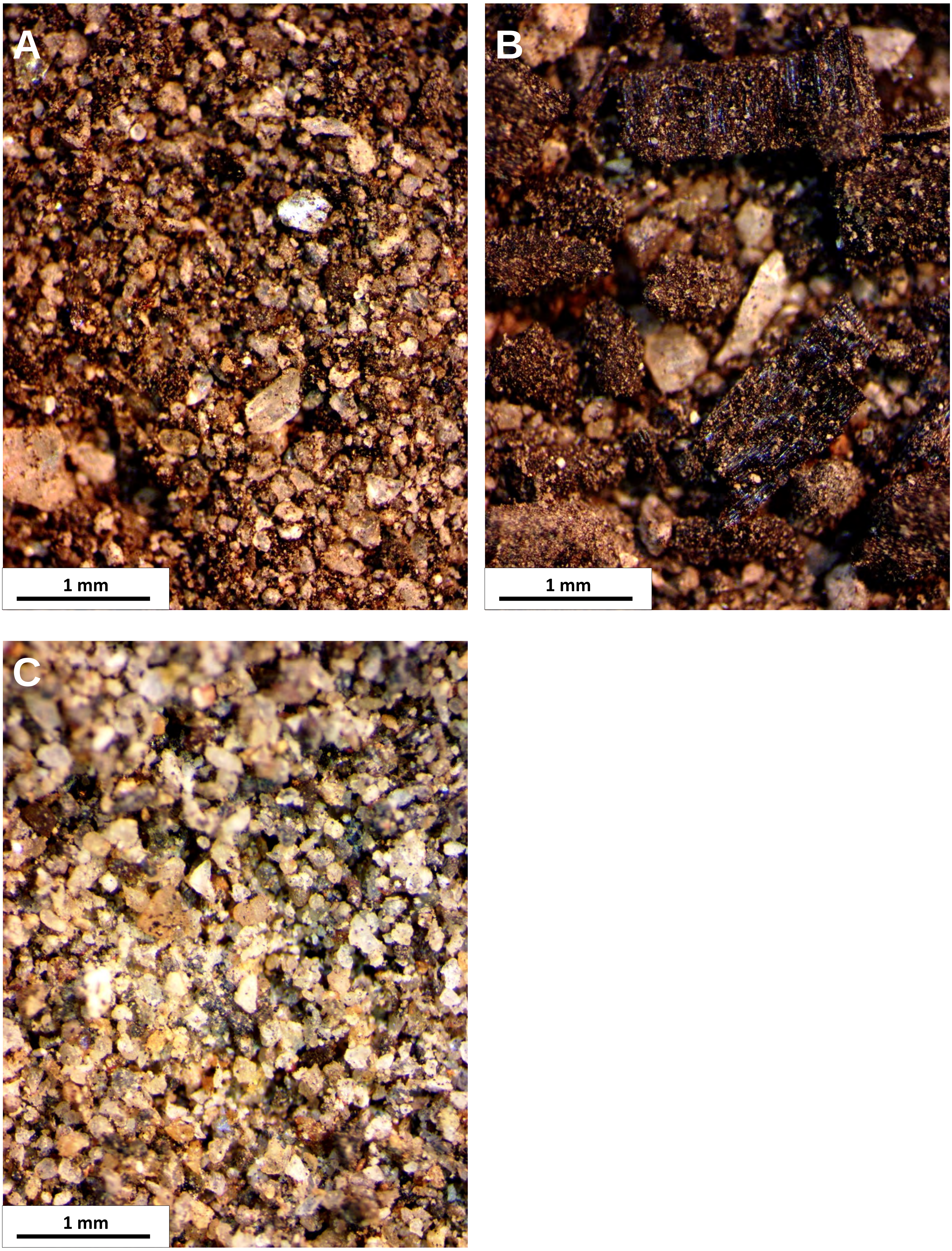


Solidified mass from the SB6 15- to 16.5-foot interval; material split along internal planar faces, either fibrous (A) or sand material in a vitreous black matrix (B).

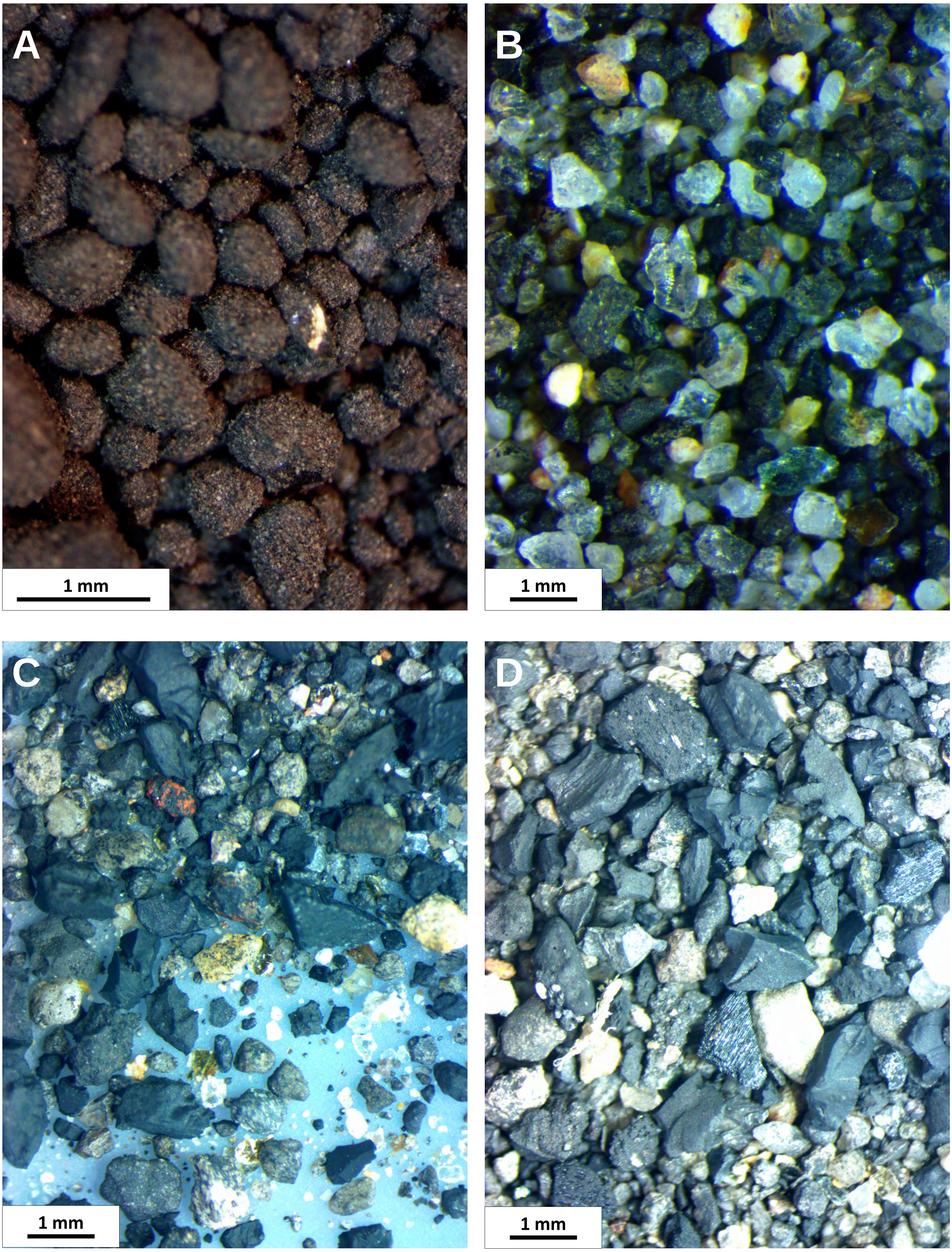
Material from SB6 17.5 to 19 feet (C and D).



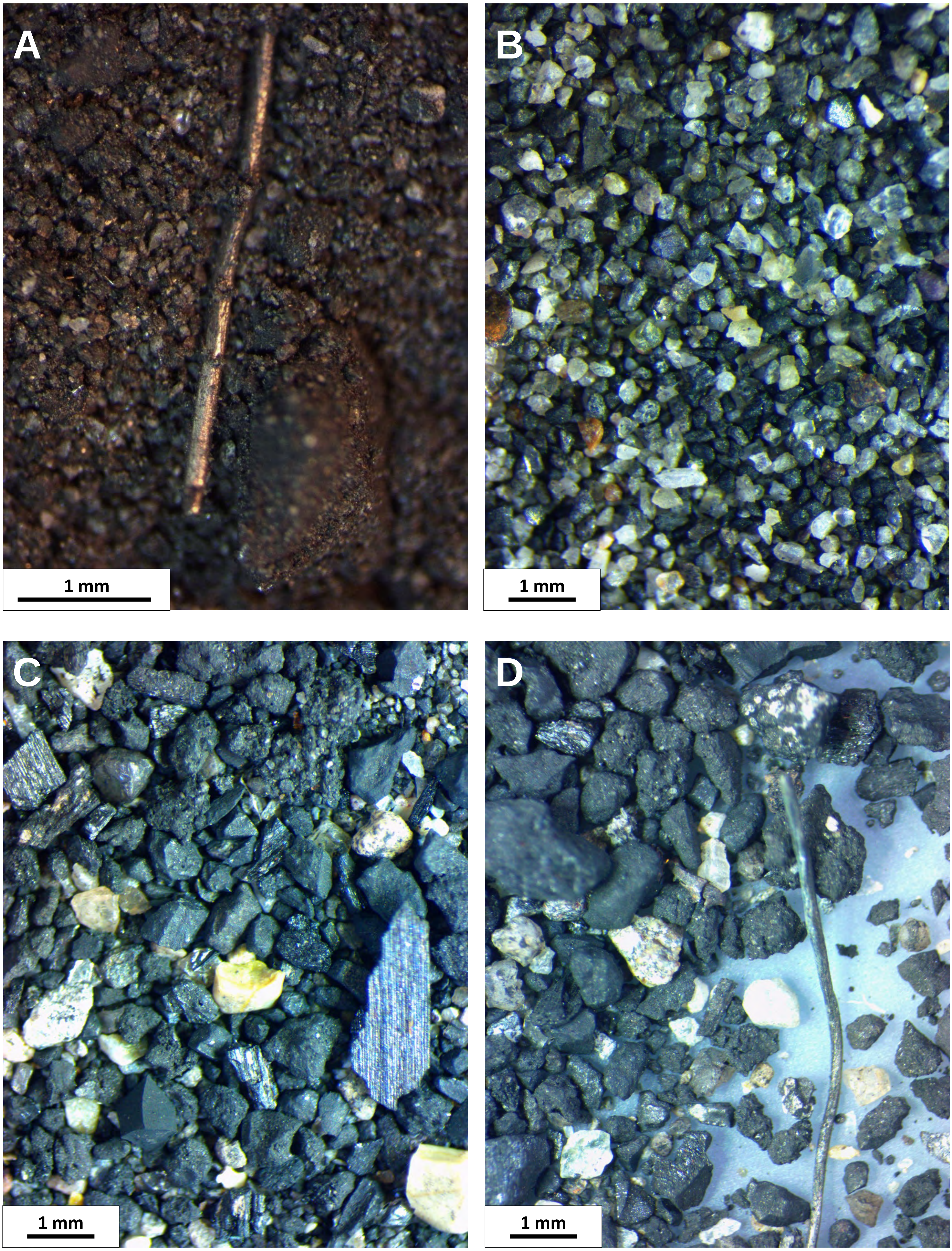
Material from SB6B 17.5 to 19 feet.



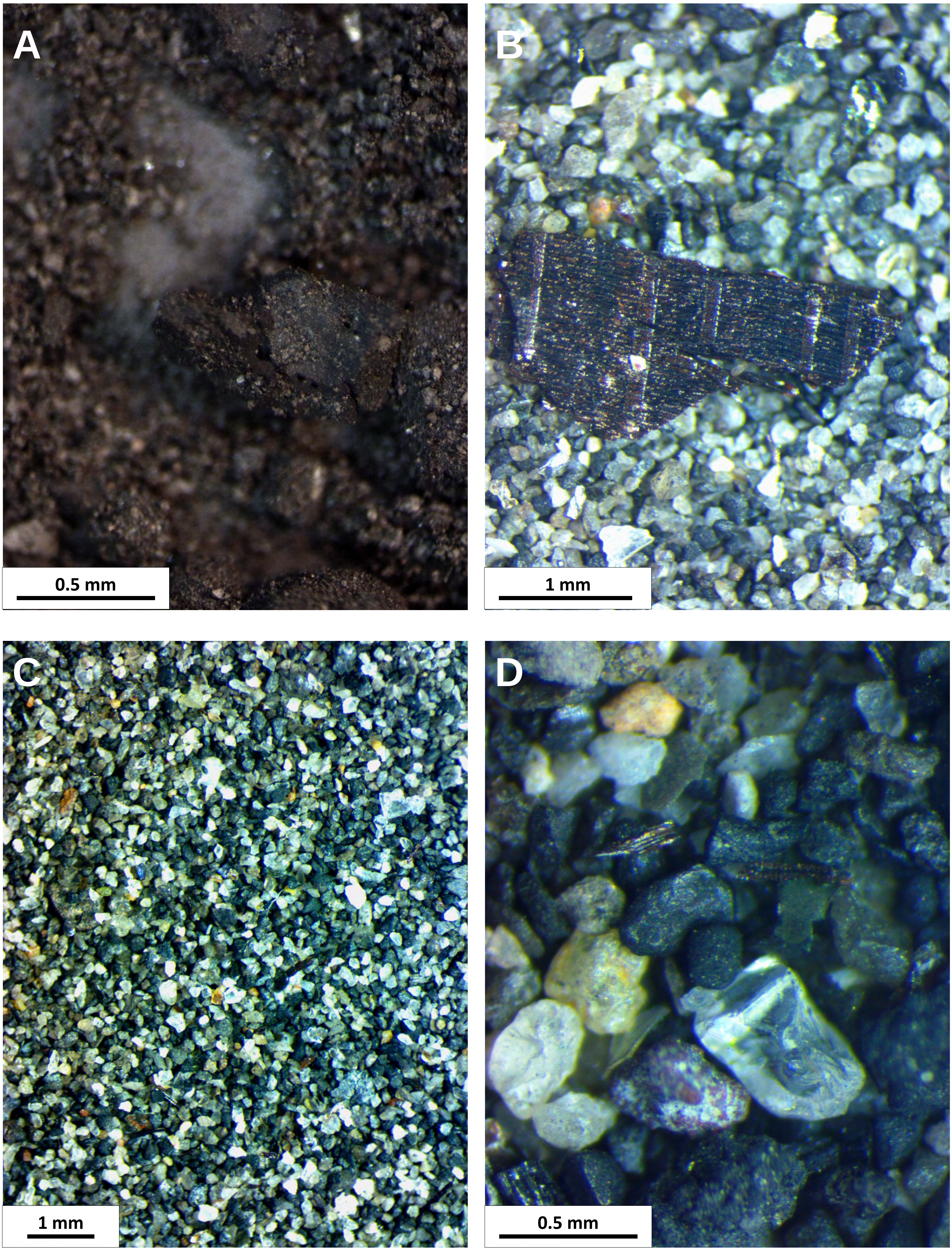
Material from SB7 25 to 26.5 feet (A and B) and SB7 27.5 to 29 feet (C).



Gray material from SB3 28 to 29.5 feet as received (A) and after the fines were removed by wet sieving (B, C, and D).



Black material from the 27.5- to 29-foot interval of SB5 as received (A) and after fines were removed by wet sieving (B, C , and D).



Gray material from the 27.5- to 29-foot interval of SB5 as received (A) and after fines were removed by wet sieving (B, C, and D).

Figure 22
SB5 27.5 to 29 Feet, Gray Material
Balefill Subsurface Black Powder Material Characterization
Pasco Landfill NPL Site

ATTACHMENT B
EDX/HRSEM RESULTS

Project: 05-13-2015

SB3-Film(1)

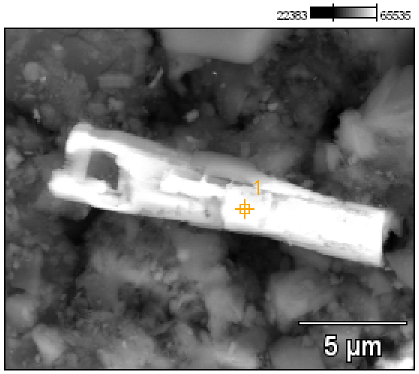
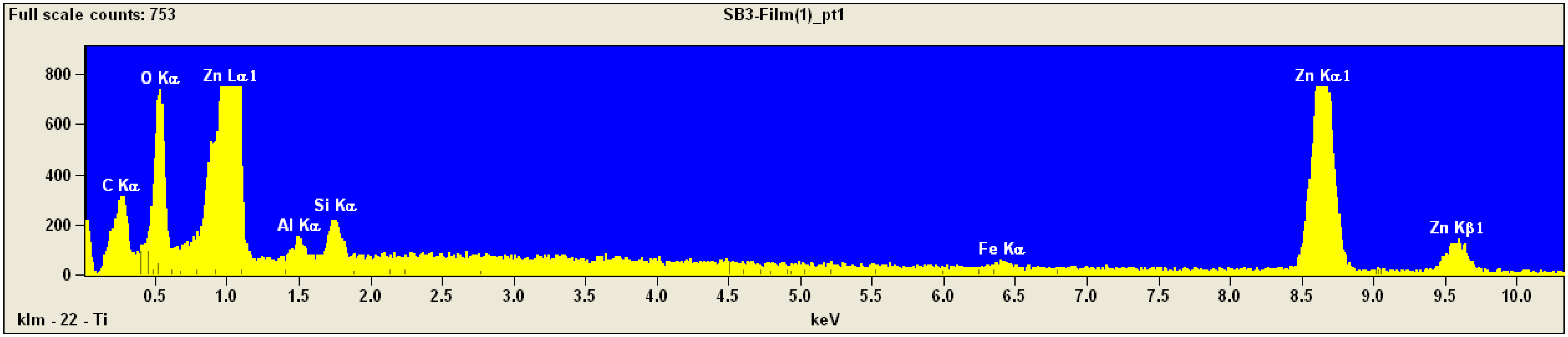


Image Name: SB3-Film(1)

Accelerating Voltage: 20.0 kV

Magnification: 7538



Project: 05-13-2015

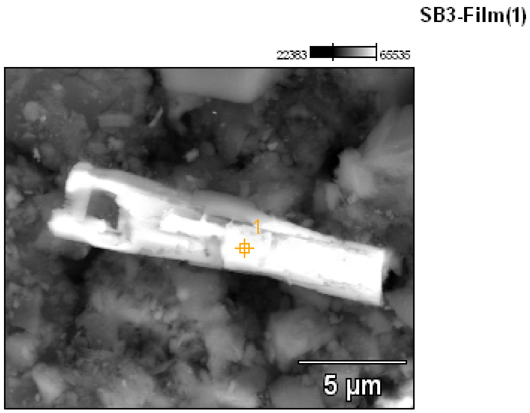


Image Name: SB3-Film(1)

Accelerating Voltage: 20.0 kV

Magnification: 7538

Weight %

	C	***O***	***Al***	***Si***	***Fe***	***Zn***
SB3-Film(1)_pt1	28.75	18.66	1.01	1.58	0.56	49.44

	O	***Al***	***Si***	***Fe***	***Zn***
SB3-Film(1)_pt1	20.84	1.96	3.03	0.84	73.33

Project: 05-13-2015

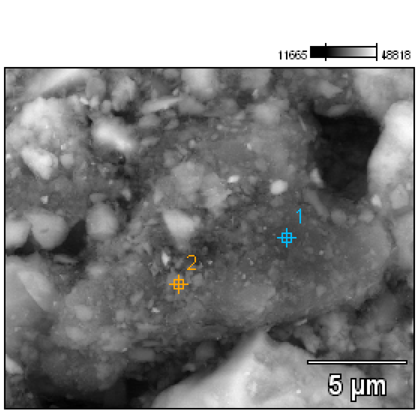
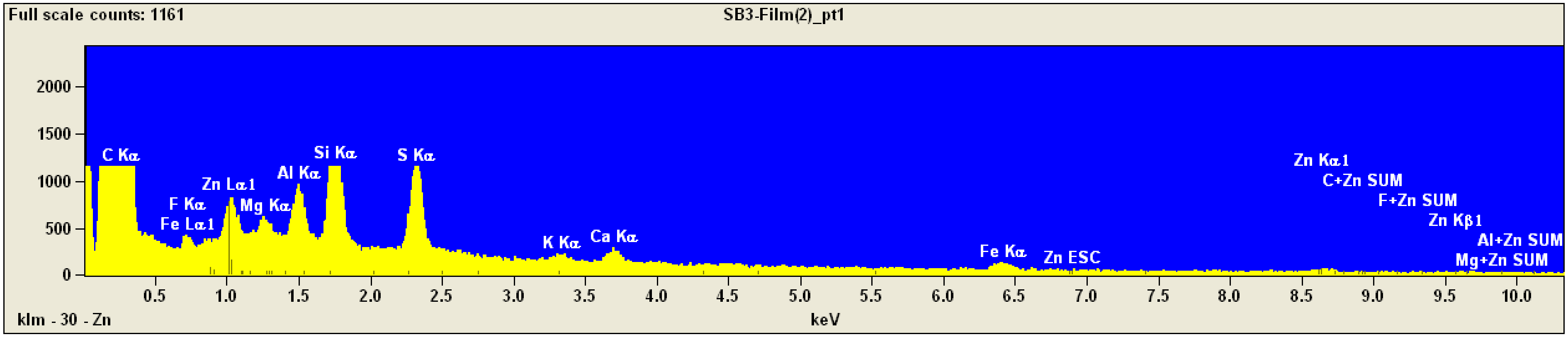
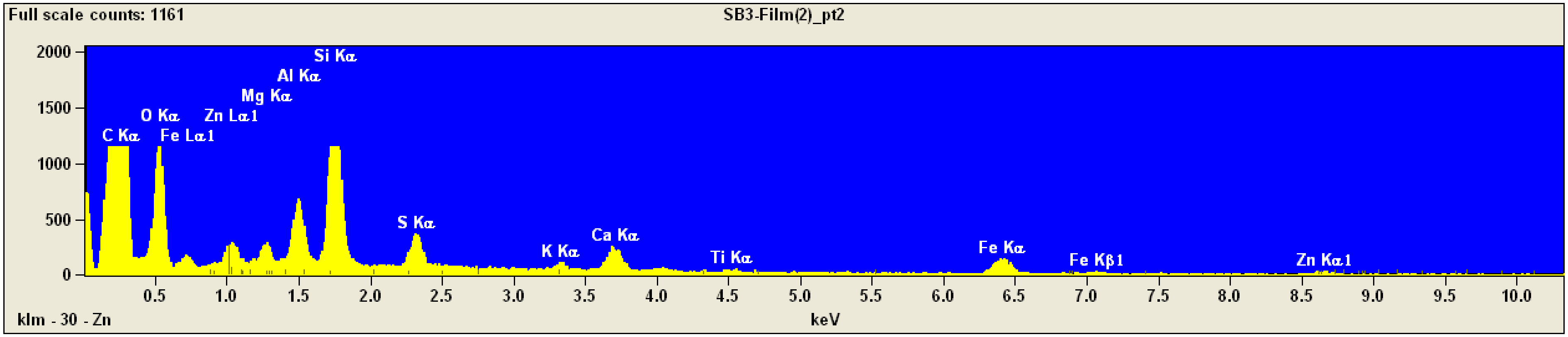


Image Name: SB3-Film(2)

Accelerating Voltage: 20.0 kV

Magnification: 6913





Project: 05-13-2015

SB3-Film(2)

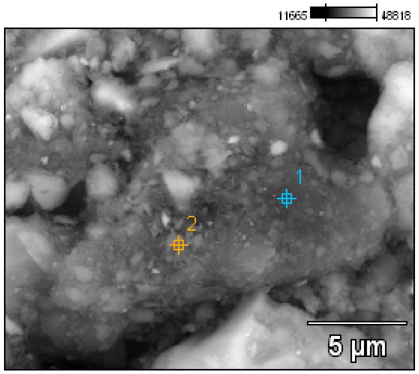


Image Name: SB3-Film(2)

Accelerating Voltage: 20.0 kV

Magnification: 6913

Weight %

	C	*O*	*F*	*Mg*	*Al*	*Si*	*S*	*K*	*Ca*	*Ti*	*Fe*	*Zn*
SB3-Film(2)_pt1	96.96		0.00	0.15	0.39	0.94	0.80	0.07	0.16		0.23	0.29
SB3-Film(2)_pt2	64.13	24.46		0.52	1.63	4.34	0.91	0.21	0.95	0.11	1.86	0.88

	O	*F*	*Mg*	*Al*	*Si*	*S*	*K*	*Ca*	*Ti*	*Fe*	*Zn*
SB3-Film(2)_pt1		0.00	4.12	11.60	32.16	32.19	2.31	5.24		5.68	6.69
SB3-Film(2)_pt2	54.77		2.11	6.83	18.64	4.02	0.77	3.46	0.39	6.15	2.86

Project: 05-13-2015

SB3-Film(4)

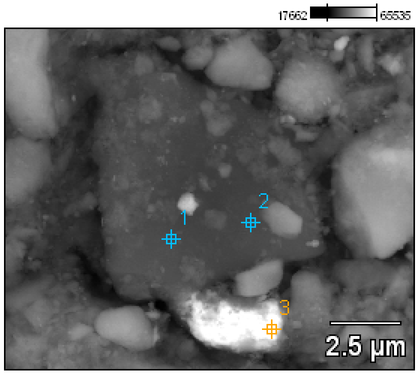
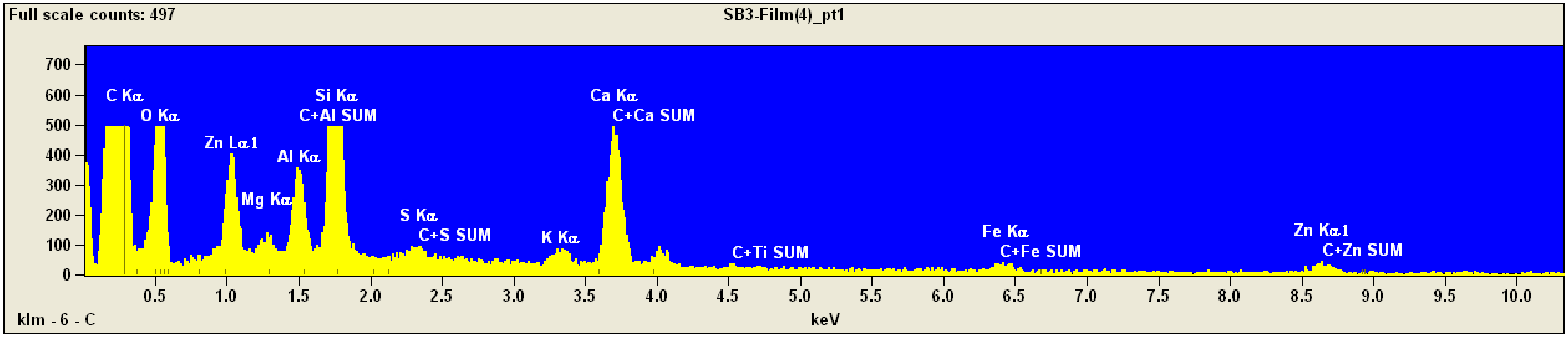
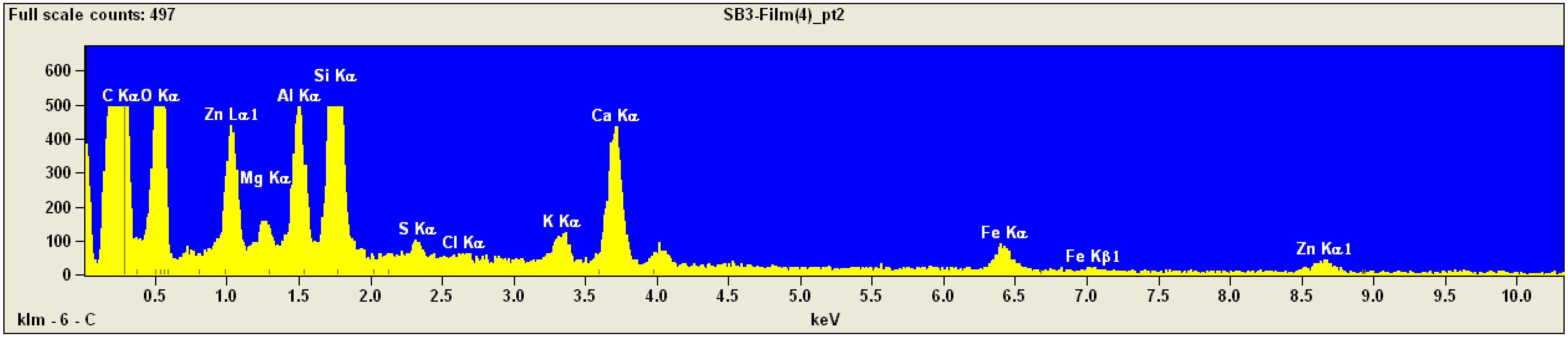


Image Name: SB3-Film(4)

Accelerating Voltage: 20.0 kV

Magnification: 9776





Project: 05-13-2015

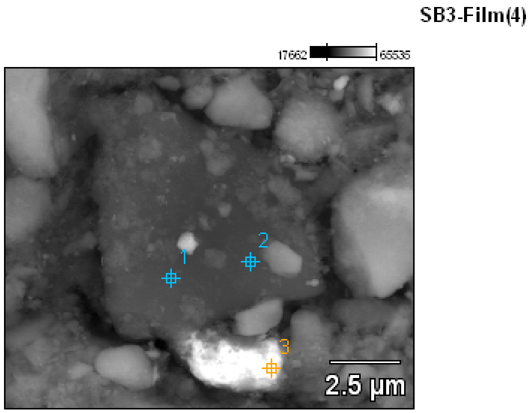
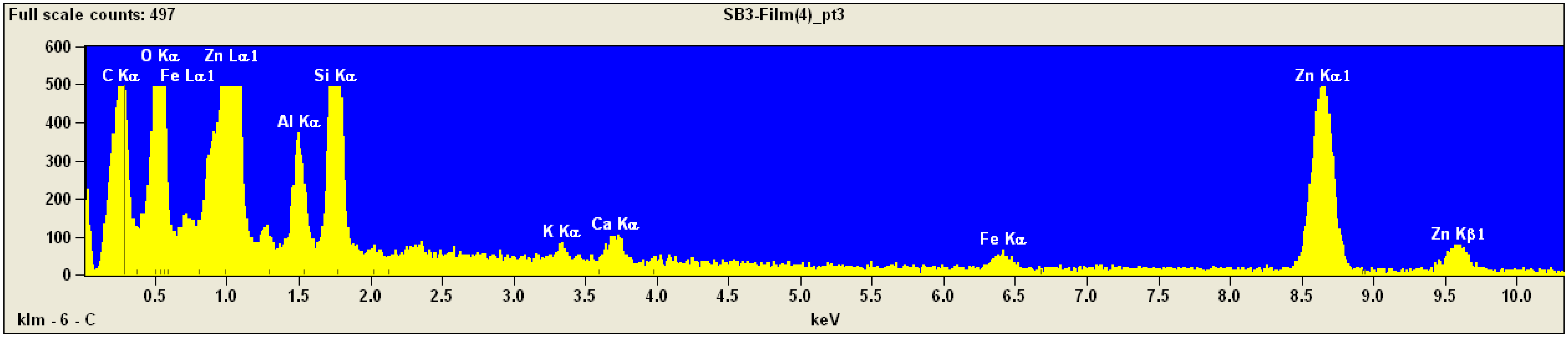


Image Name: SB3-Film(4)

Accelerating Voltage: 20.0 kV

Magnification: 9776



Project: 05-13-2015

SB3-Film(4)

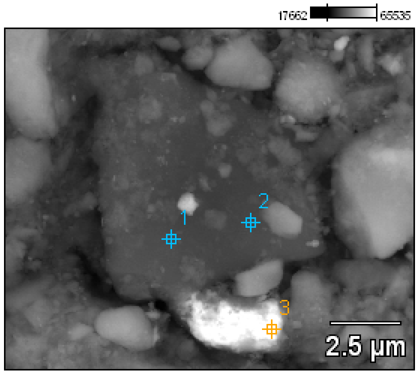


Image Name: SB3-Film(4)

Accelerating Voltage: 20.0 kV

Magnification: 9776

Weight %

	C	O	Mg	Al	Si	S	Cl	K	Ca	Fe	Zn
SB3-Film(4)_pt1	60.55	27.48	0.33	1.43	3.86	0.26		0.39	3.42	0.56	1.72
SB3-Film(4)_pt2	53.35	32.15	0.47	2.04	4.94	0.23	0.09	0.61	2.84	1.26	2.03
SB3-Film(4)_pt3	36.85	28.92		1.97	5.21			0.20	0.61	0.85	25.39

	O	Mg	Al	Si	S	Cl	K	Ca	Fe	Zn
SB3-Film(4)_pt1	57.40	1.34	5.54	15.18	1.02		1.32	11.27	1.74	5.19
SB3-Film(4)_pt2	49.46	1.78	7.48	18.89	0.90	0.34	2.03	9.32	3.81	6.00
SB3-Film(4)_pt3	35.33		4.71	12.28			0.40	1.19	1.50	44.60

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SB3-Film(5)

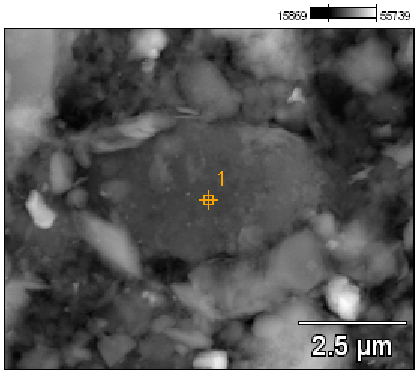
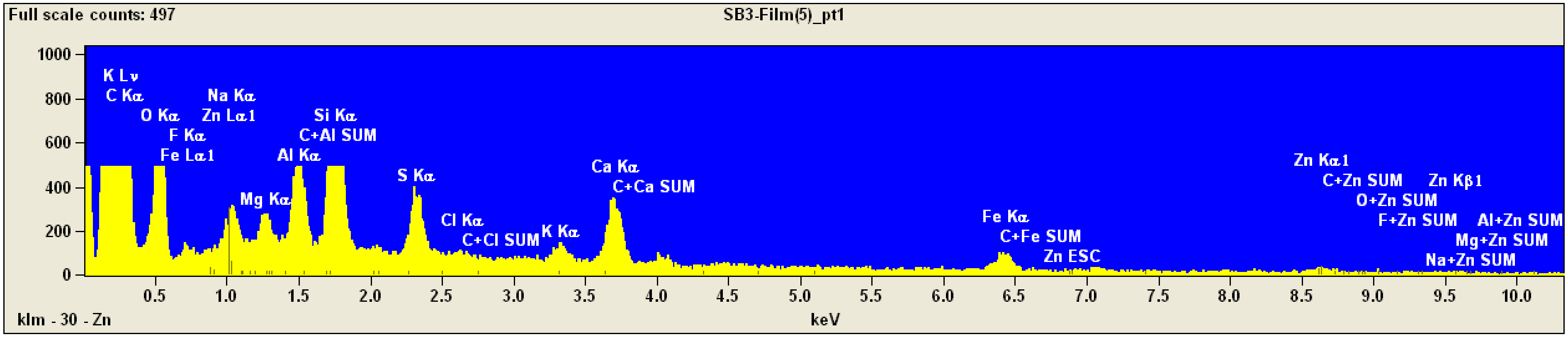


Image Name: SB3-Film(5)

Accelerating Voltage: 20.0 kV

Magnification: 15076



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SB3-Film(5)

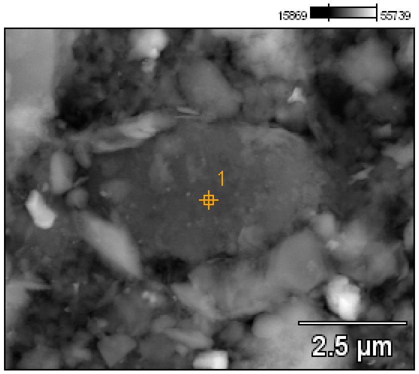

Image Name: SB3-Film(5)

Accelerating Voltage: 20.0 kV

Magnification: 15076

Weight %

	C	O	F	Na	Mg	Al	Si	S	Cl	K	Ca	Fe	Zn
SB3-Film(5)_pt1	77.13	13.19	0.00	0.78	0.37	1.14	2.96	1.01	0.10	0.31	1.49	0.97	0.55

	O	F	Na	Mg	Al	Si	S	Cl	K	Ca	Fe	Zn
SB3-Film(5)_pt1	48.07	0.00	0.00	1.88	6.74	18.87	6.68	0.66	1.73	8.07	4.68	2.61

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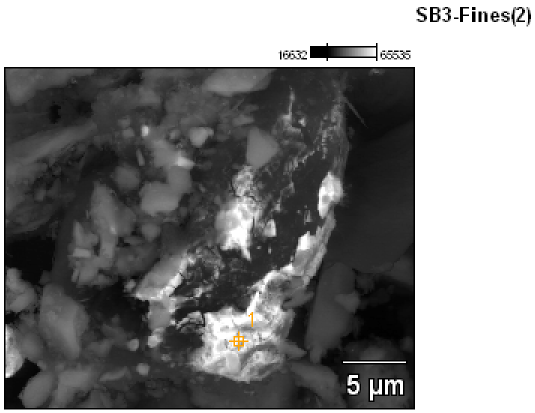
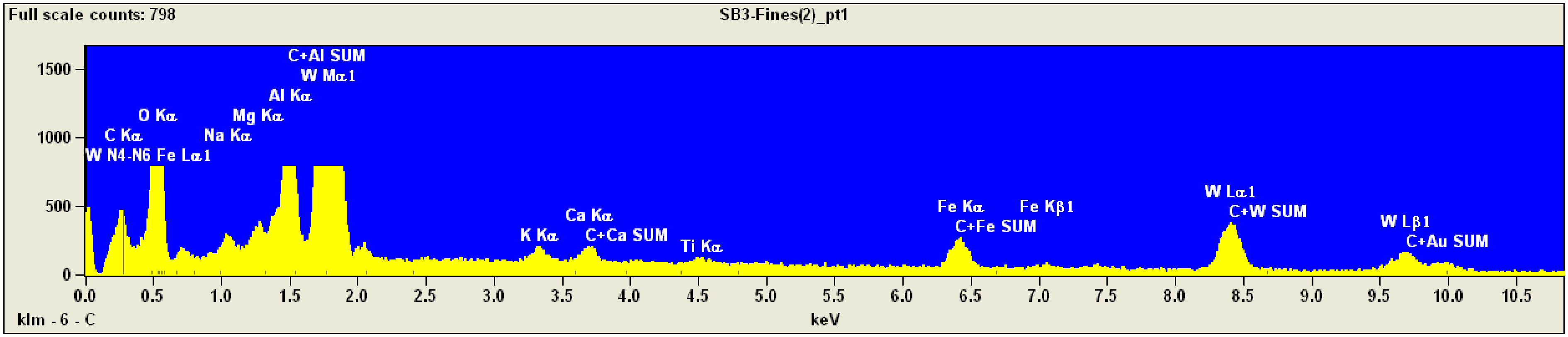


Image Name: SB3-Fines(2)

Accelerating Voltage: 20.0 kV

Magnification: 4525



Project: 05-13-2015

SB3-Fines(2)

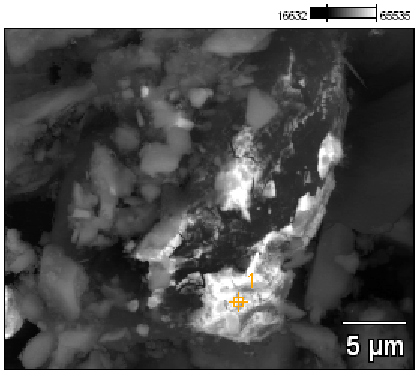


Image Name: SB3-Fines(2)

Accelerating Voltage: 20.0 kV

Magnification: 4525

Weight %

	C	O	Na	Mg	Al	K	Ca	Ti	Fe	W
SB3-Fines(2)_pt1	22.06	35.83	1.18	0.83	5.23	0.59	0.75	0.56	3.07	29.89

	O	Na	Mg	Al	K	Ca	Ti	Fe	W
SB3-Fines(2)_pt1	40.59	1.78	1.26	7.93	0.92	1.15	0.82	4.32	41.23

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SB3-Fines(3)

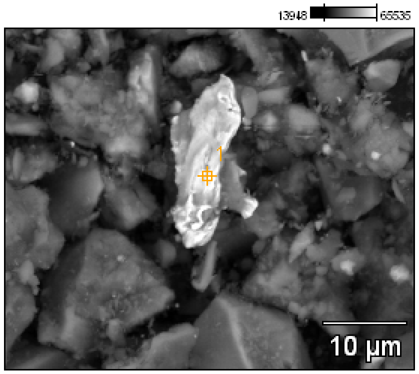
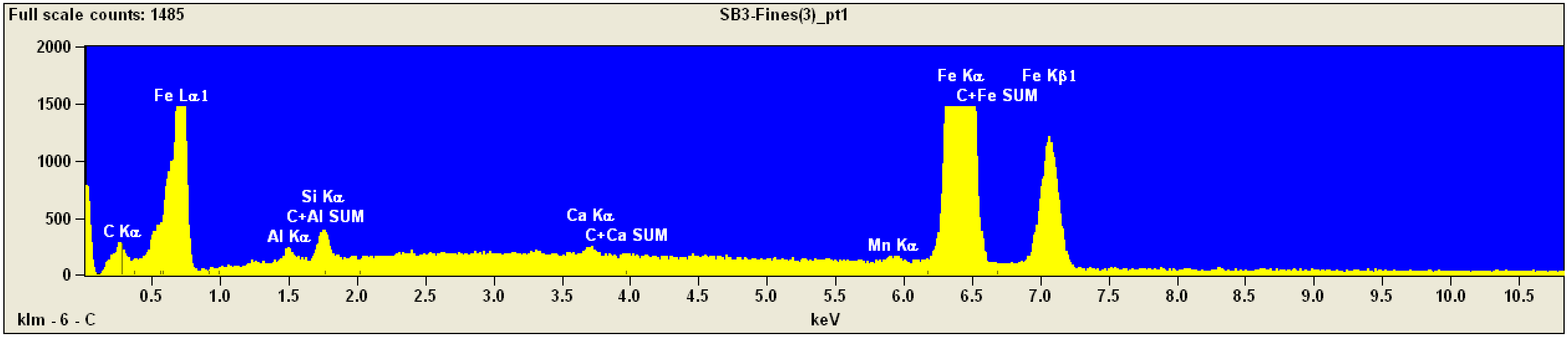


Image Name: SB3-Fines(3)

Accelerating Voltage: 20.0 kV

Magnification: 2934



Project: 05-13-2015

SB3-Fines(3)

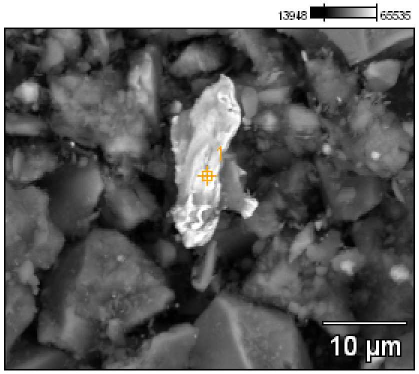


Image Name: SB3-Fines(3)

Accelerating Voltage: 20.0 kV

Magnification: 2934

Weight %

	C	***Al***	***Si***	***Ca***	***Mn***	***Fe***
SB3-Fines(3)_pt1	7.60	0.42	1.05	0.25	0.61	90.06

	Al	***Si***	***Ca***	***Mn***	***Fe***
SB3-Fines(3)_pt1	0.48	1.19	0.28	0.66	97.40

Project: 05-13-2015

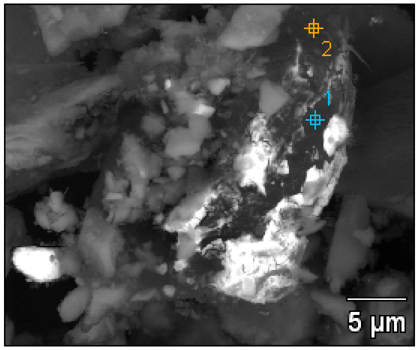
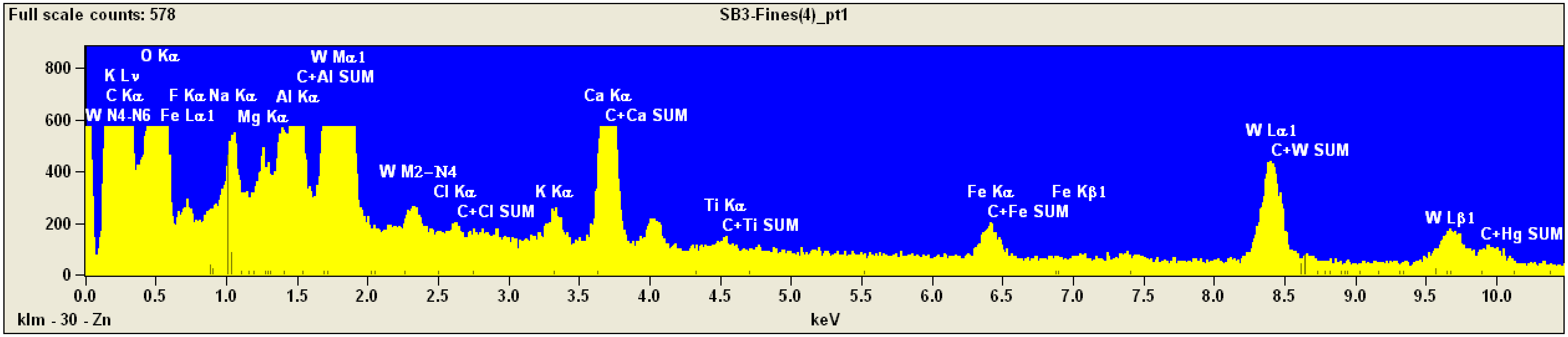
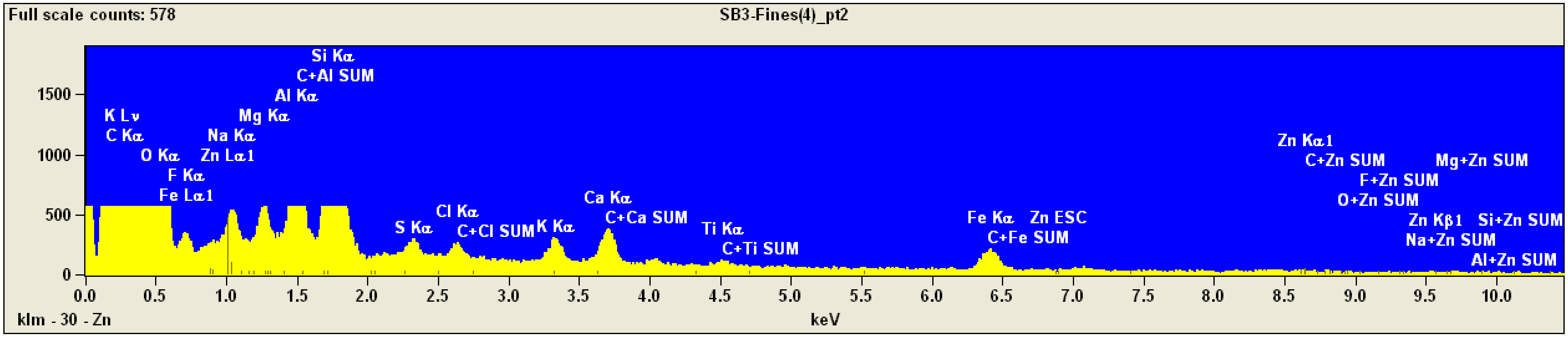


Image Name: SB3-Fines(4)

Accelerating Voltage: 20.0 kV

Magnification: 4150





Project: 05-13-2015

SB3-Fines(4)

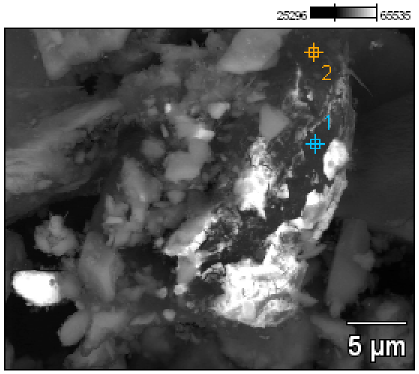


Image Name: SB3-Fines(4)

Accelerating Voltage: 20.0 kV

Magnification: 4150

Weight %

	C	O	F	Na	Mg	Al	Si	S	Cl	K	Ca	Ti	Fe	Zn	W
SB3-Fines(4)_pt1	46.45	29.58	0.26	1.04	0.38	1.59			0.09	0.32	2.87	0.17	0.94		16.31
SB3-Fines(4)_pt2	66.83	24.33	0.39	0.61	0.30	1.24	4.17	0.16	0.16	0.30	0.50	0.11	0.87	0.05	

	O	F	Na	Mg	Al	Si	S	Cl	K	Ca	Ti	Fe	Zn	W
SB3-Fines(4)_pt1	41.48	1.52	3.06	1.11	4.47			0.28	0.91	7.78	0.43	2.20		36.76
SB3-Fines(4)_pt2	53.51	7.36	2.95	1.44	5.85	20.17	0.82	0.74	1.25	2.04	0.42	3.26	0.19	

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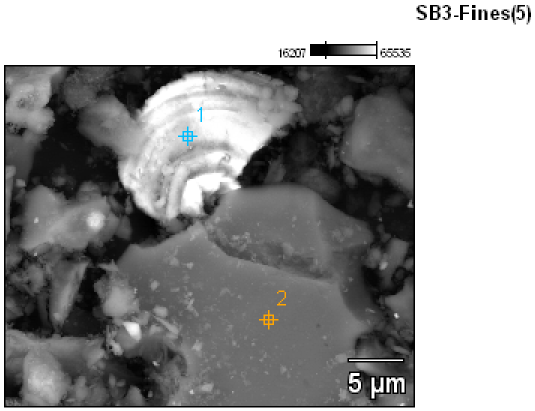
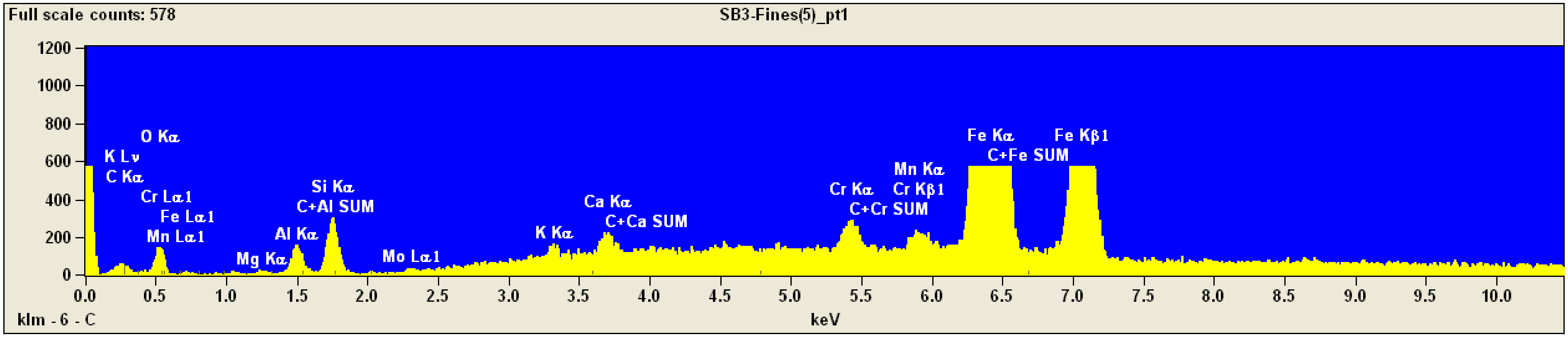
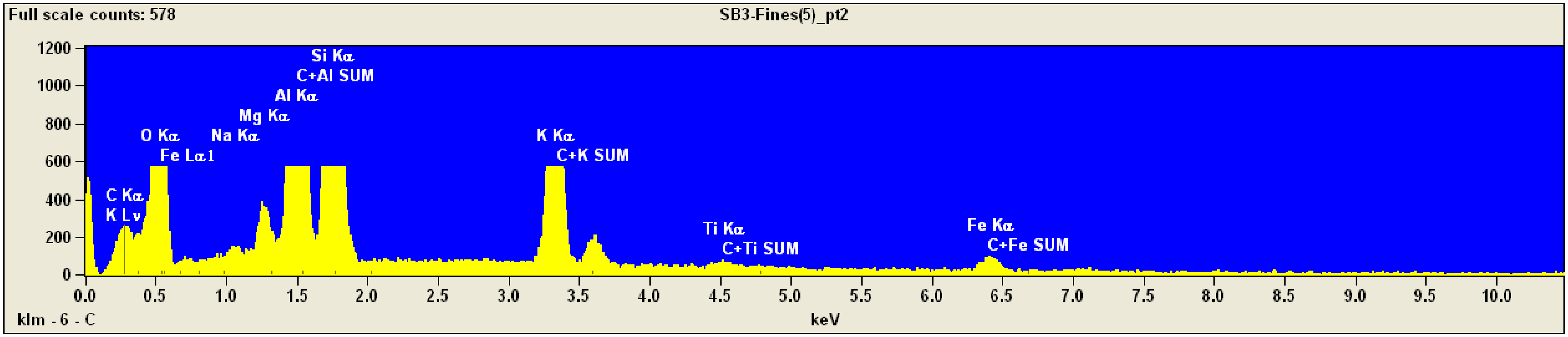


Image Name: SB3-Fines(5)

Accelerating Voltage: 20.0 kV

Magnification: 3805





Project: 05-13-2015

SB3-Fines(5)

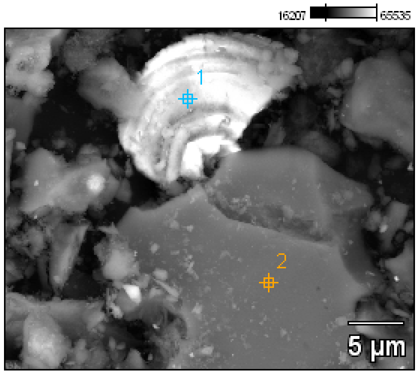


Image Name: SB3-Fines(5)

Accelerating Voltage: 20.0 kV

Magnification: 3805

Weight %

	C	O	Na	Mg	Al	Si	K	Ca	Ti	Cr	Mn	Fe	Mo
SB3-Fines(5)_pt1	1.61	0.61		0.08	0.72	1.17	0.15	0.34		0.69	0.88	93.65	0.10
SB3-Fines(5)_pt2	21.29	35.15	0.20	0.69	14.39	20.04	6.66		0.27			1.30	

	O	Na	Mg	Al	Si	K	Ca	Ti	Cr	Mn	Fe	Mo
SB3-Fines(5)_pt1	0.66		0.08	0.73	1.20	0.16	0.34		0.70	0.90	95.12	0.10
SB3-Fines(5)_pt2	35.44	0.28	0.97	20.13	30.84	10.09		0.40			1.85	

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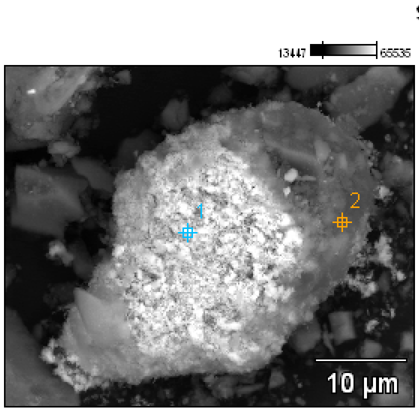
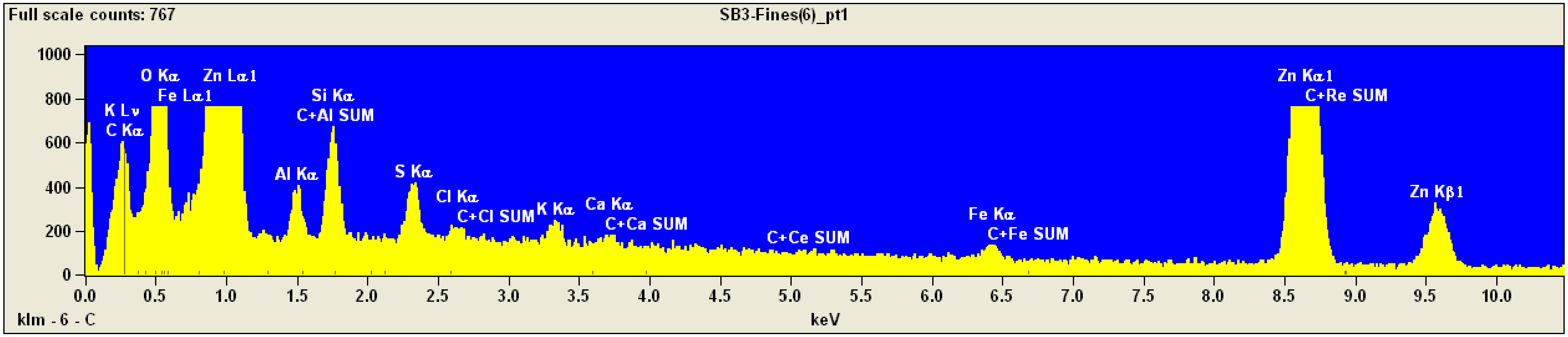
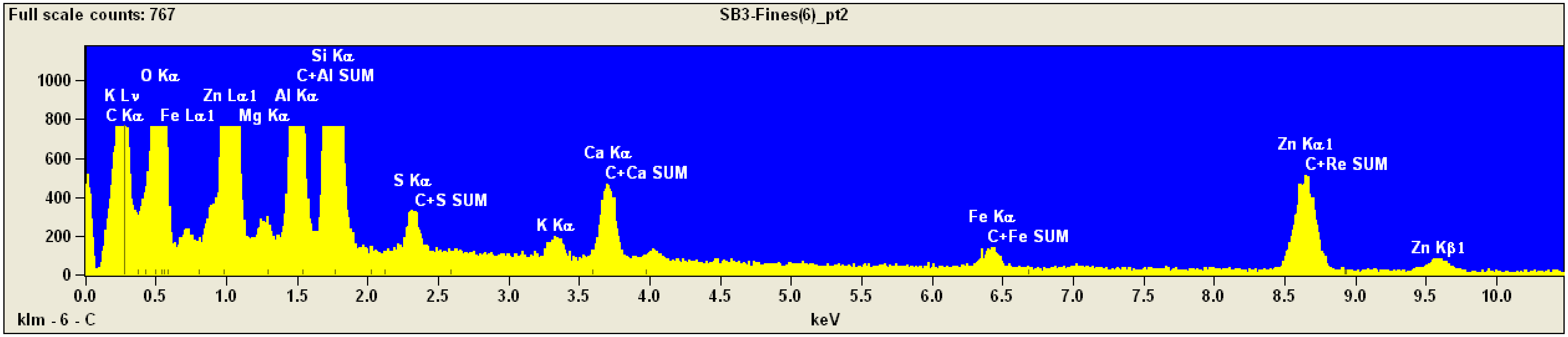


Image Name: SB3-Fines(6)

Accelerating Voltage: 20.0 kV

Magnification: 3200





Project: 05-13-2015

SB3-Fines(6)

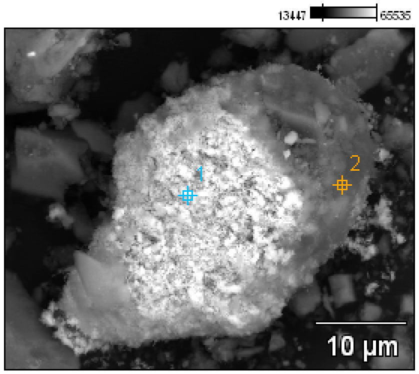


Image Name: SB3-Fines(6)

Accelerating Voltage: 20.0 kV

Magnification: 3200

Weight %

	C	***O***	***Mg***	***Al***	***Si***	***S***	***Cl***	***K***	***Ca***	***Fe***	***Zn***
SB3-Fines(6)_pt1	24.33	17.89		1.18	2.21	1.08	0.25	0.28	0.20	0.65	51.93
SB3-Fines(6)_pt2	36.38	30.61	0.41	5.44	10.95	0.81		0.41	1.59	0.93	12.45

	O	***Mg***	***Al***	***Si***	***S***	***Cl***	***K***	***Ca***	***Fe***	***Zn***
SB3-Fines(6)_pt1	17.37		2.07	3.84	1.79	0.41	0.44	0.30	0.92	72.86
SB3-Fines(6)_pt2	37.06	0.81	10.95	23.06	1.76		0.79	2.95	1.60	21.02

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SB3-Light(1)

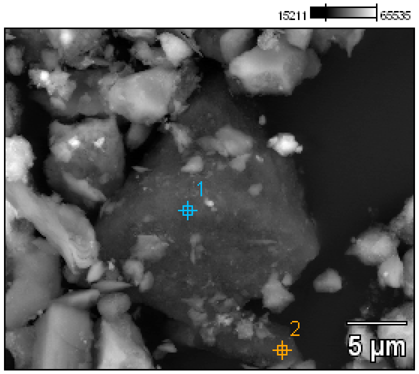
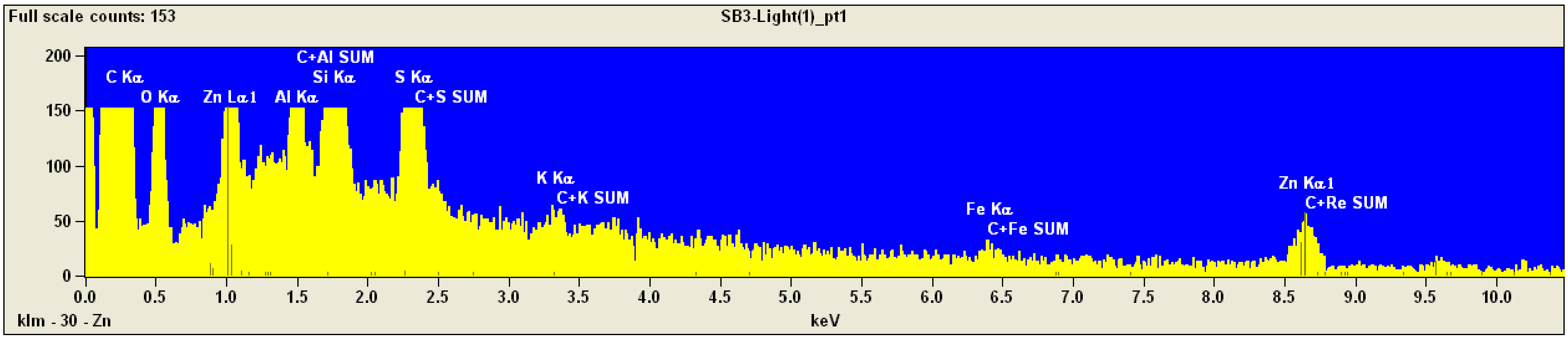
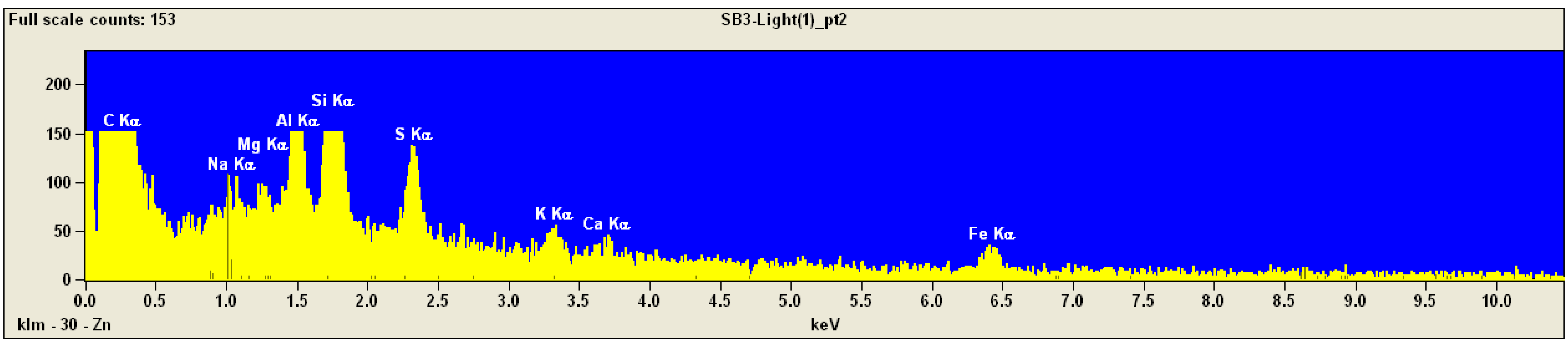


Image Name: SB3-Light(1)

Accelerating Voltage: 20.0 kV

Magnification: 4110





Project: 05-13-2015

SB3-Light(1)

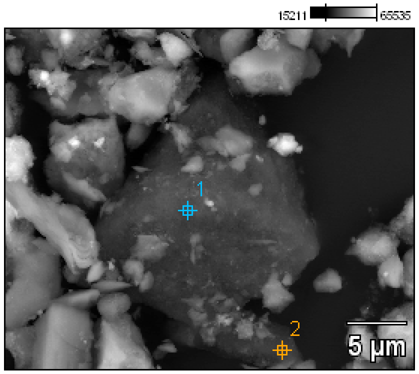


Image Name: SB3-Light(1)

Accelerating Voltage: 20.0 kV

Magnification: 4110

Weight %

	C	O	Na	Mg	Al	Si	S	K	Ca	Fe	Zn
SB3-Light(1)_pt1	85.15	8.26			0.52	1.63	1.98	0.14		0.34	1.98
SB3-Light(1)_pt2	96.62		0.20	0.08	0.57	1.46	0.40	0.15	0.09	0.42	

	O	Na	Mg	Al	Si	S	K	Ca	Fe	Zn
SB3-Light(1)_pt1	39.83			5.43	16.89	20.39	1.31		2.45	13.70
SB3-Light(1)_pt2		4.71	2.04	14.35	45.43	16.74	4.69	2.58	9.45	

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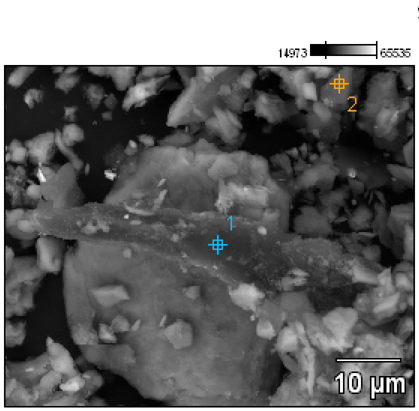
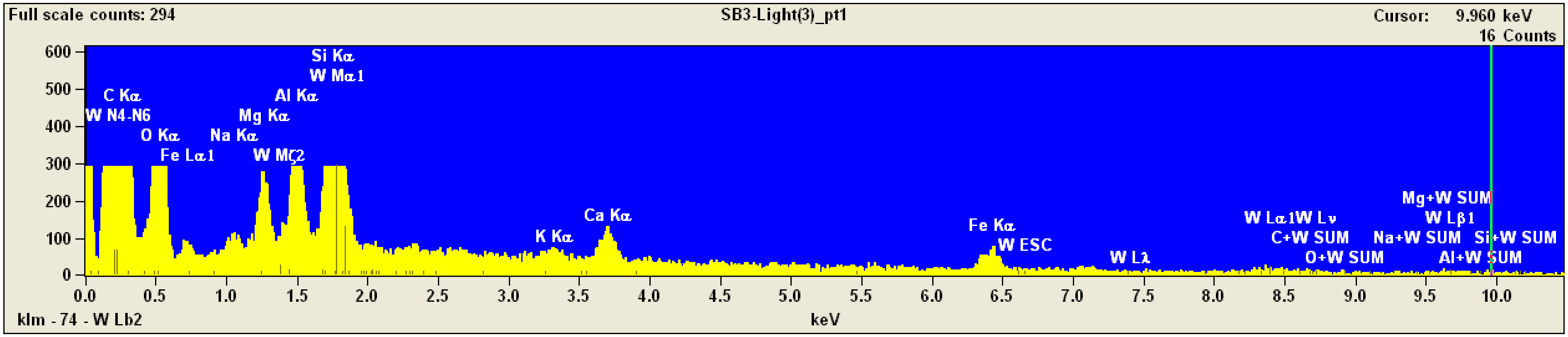
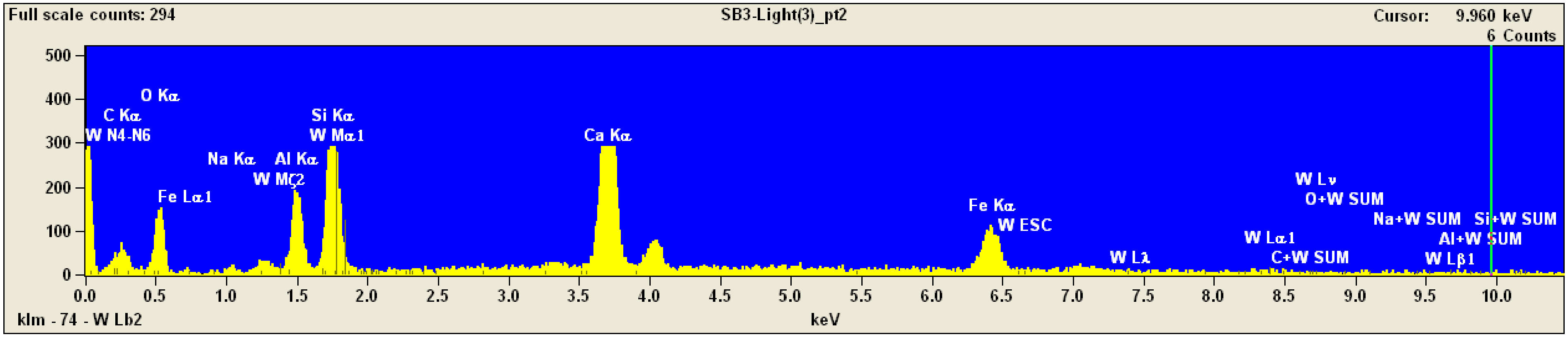


Image Name: SB3-Light(3)

Accelerating Voltage: 20.0 kV

Magnification: 2241





Project: 05-13-2015

SB3-Light(3)

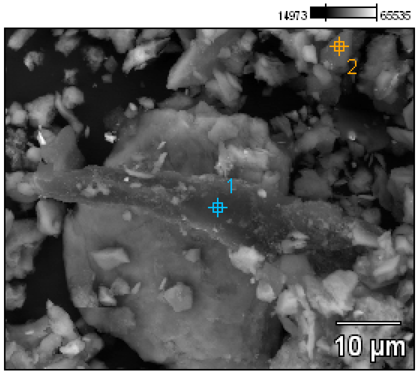


Image Name: SB3-Light(3)

Accelerating Voltage: 20.0 kV

Magnification: 2241

Weight %

	C	O	Na	Mg	Al	Si	K	Ca	Fe	W
SB3-Light(3)_pt1	65.03	26.61	0.40	0.86	1.36	3.12	0.14	0.56	1.00	0.92
SB3-Light(3)_pt2	22.08	29.09	0.75		4.55	10.88		19.84	10.62	2.17

	O	Na	Mg	Al	Si	K	Ca	Fe	W
SB3-Light(3)_pt1	57.00	1.88	4.50	7.37	17.75	0.69	2.68	4.26	3.87
SB3-Light(3)_pt2	35.11	1.04		6.27	15.08		26.06	13.67	2.77

Project: 05-13-2015

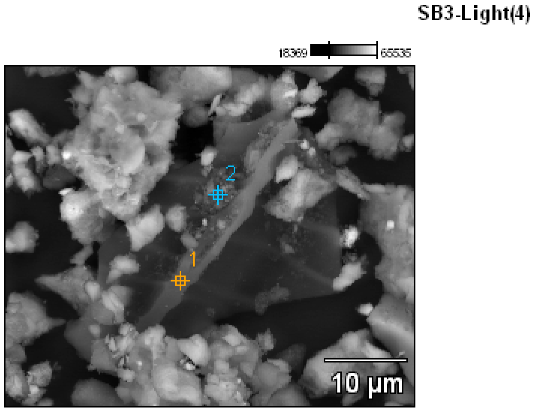
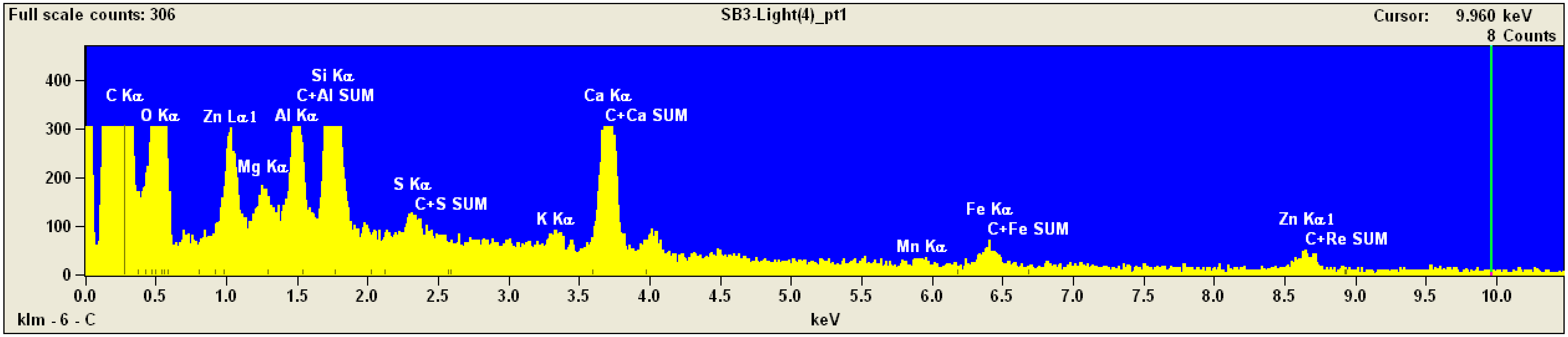
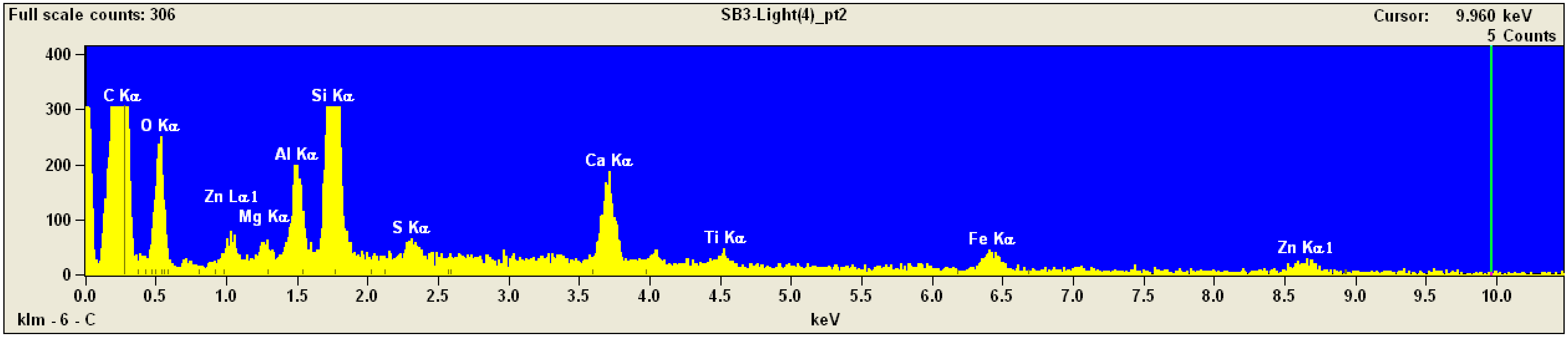


Image Name: SB3-Light(4)

Accelerating Voltage: 20.0 kV

Magnification: 2906





Project: 05-13-2015

SB3-Light(4)

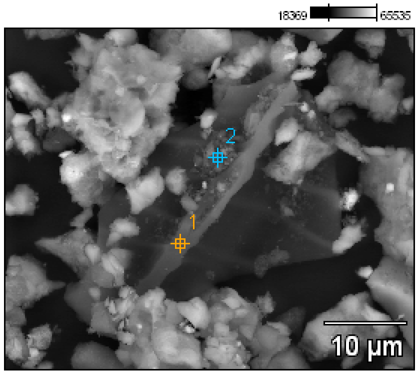


Image Name: SB3-Light(4)

Accelerating Voltage: 20.0 kV

Magnification: 2906

Weight %

	C	*O*	*Mg*	*Al*	*Si*	*S*	*K*	*Ca*	*Ti*	*Mn*	*Fe*	*Zn*
SB3-Light(4)_pt1	63.86	29.11	0.26	0.79	2.15	0.17	0.14	1.78		0.20	0.52	1.02
SB3-Light(4)_pt2	63.79	20.12	0.41	1.81	5.96	0.46		2.70	0.54		1.86	2.35

	O	*Mg*	*Al*	*Si*	*S*	*K*	*Ca*	*Ti*	*Mn*	*Fe*	*Zn*
SB3-Light(4)_pt1	65.75	1.40	4.37	11.82	0.89	0.62	7.94		0.84	2.19	4.18
SB3-Light(4)_pt2	46.22	1.47	6.59	22.10	1.77		8.36	1.62		5.31	6.56

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SB3-Light(5)

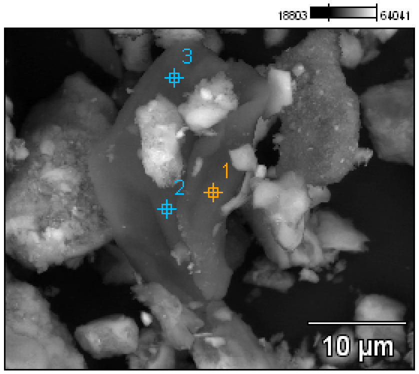
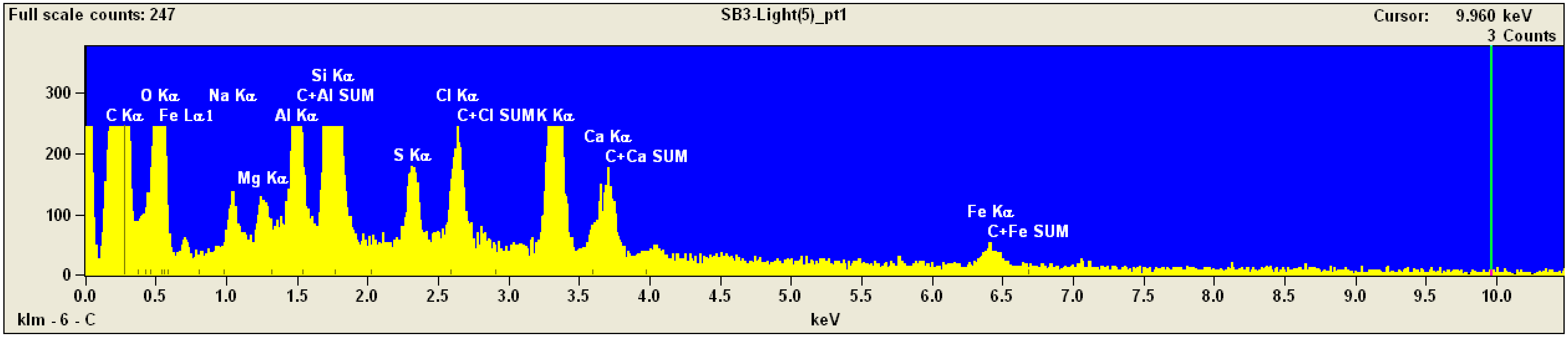
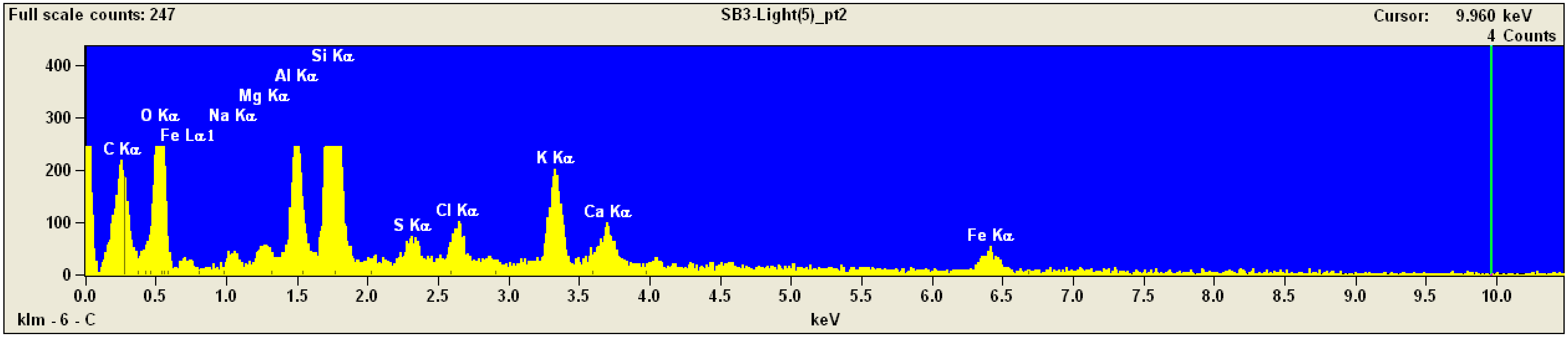


Image Name: SB3-Light(5)

Accelerating Voltage: 20.0 kV

Magnification: 3456





Project: 05-13-2015

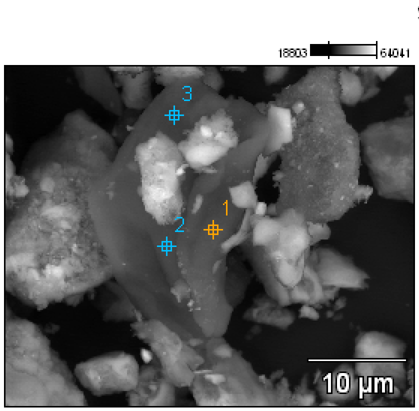
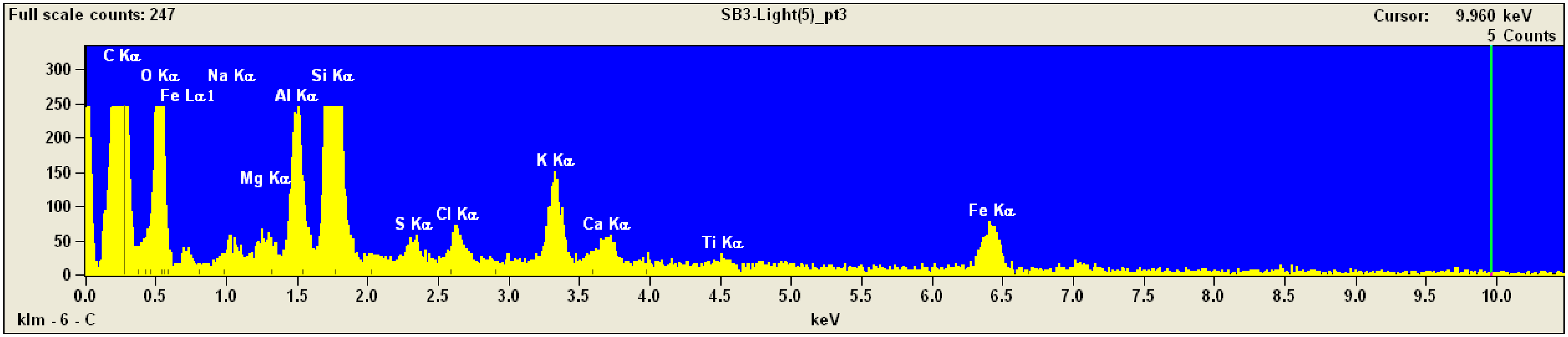


Image Name: SB3-Light(5)

Accelerating Voltage: 20.0 kV

Magnification: 3456



Project: 05-13-2015

SB3-Light(5)

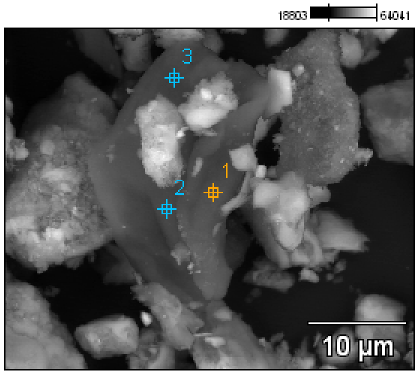


Image Name: SB3-Light(5)

Accelerating Voltage: 20.0 kV

Magnification: 3456

Weight %

	C	O	Na	Mg	Al	Si	S	Cl	K	Ca	Ti	Fe
SB3-Light(5)_pt1	50.05	33.29	1.09	0.39	1.79	5.44	0.87	1.34	3.42	1.27		1.04
SB3-Light(5)_pt2	39.69	36.96	1.08	0.56	3.12	9.71	0.89	1.13	3.07	1.42		2.37
SB3-Light(5)_pt3	52.82	29.12	1.06	0.42	2.26	7.69	0.43	0.61	1.68	0.64	0.30	2.97

	O	Na	Mg	Al	Si	S	Cl	K	Ca	Ti	Fe
SB3-Light(5)_pt1	49.41	3.70	1.25	5.42	16.78	2.81	4.17	9.97	3.75		2.76
SB3-Light(5)_pt2	47.40	2.37	1.25	6.88	22.36	2.20	2.71	6.85	3.16		4.83
SB3-Light(5)_pt3	40.43	3.98	1.46	7.32	26.29	1.61	2.17	5.39	2.04	0.90	8.41

Project: 05-13-2015

SB5-Film(1)

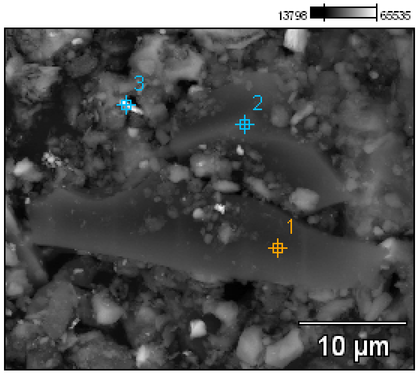
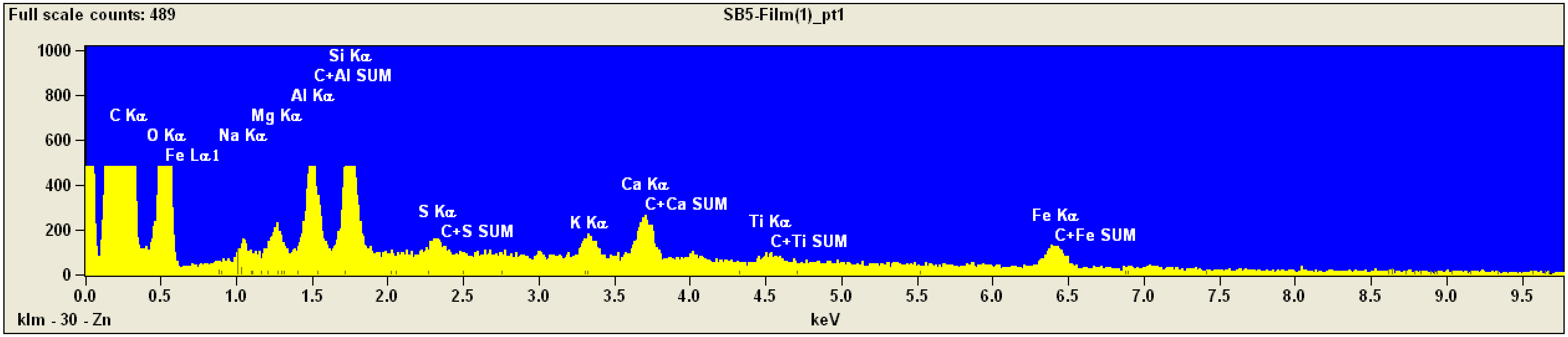
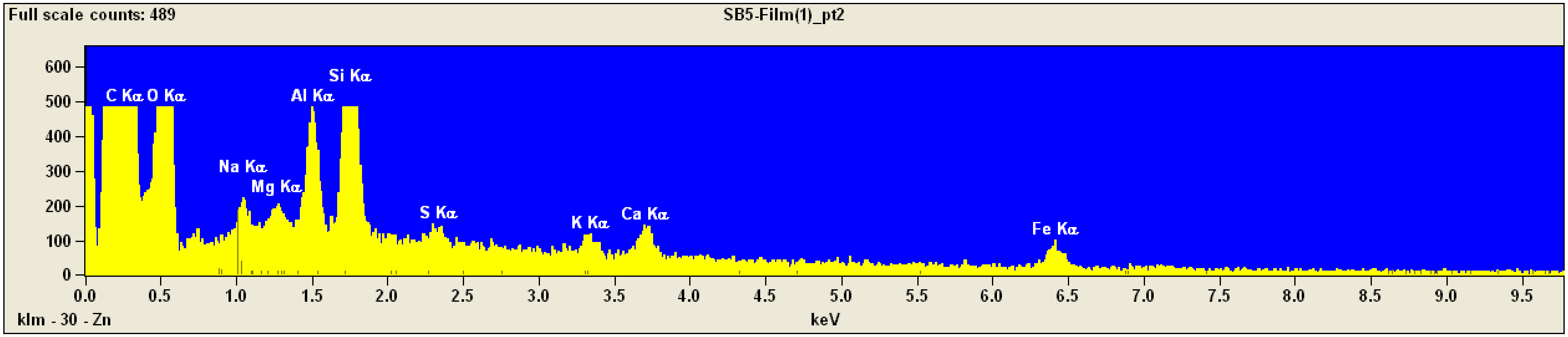


Image Name: SB5-Film(1)

Accelerating Voltage: 20.0 kV

Magnification: 3769





Project: 05-13-2015

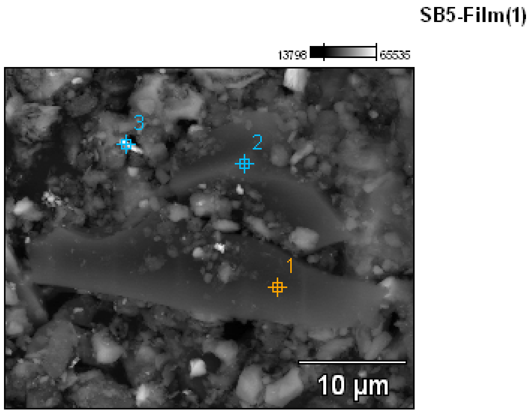
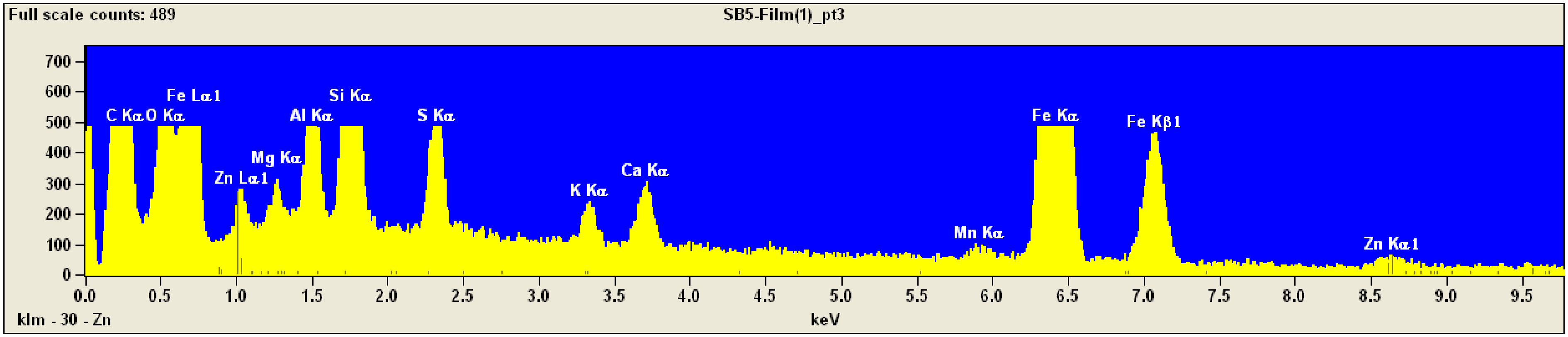


Image Name: SB5-Film(1)

Accelerating Voltage: 20.0 kV

Magnification: 3769



Project: 05-13-2015

SB5-Film(1)

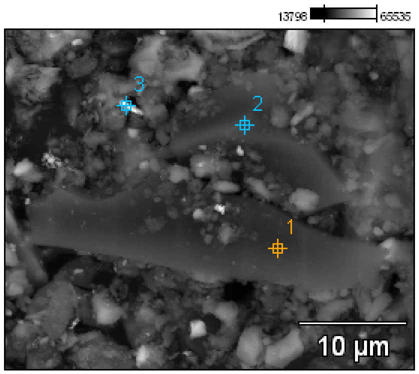


Image Name: SB5-Film(1)

Accelerating Voltage: 20.0 kV

Magnification: 3769

Weight %

	C	*O*	*Na*	*Mg*	*Al*	*Si*	*S*	*K*	*Ca*	*Ti*	*Mn*	*Fe*	*Zn*
SB5-Film(1)_pt1	65.82	26.69	0.51	0.39	1.34	1.74	0.25	0.42	1.04	0.32		1.48	
SB5-Film(1)_pt2	69.34	26.36	0.51	0.17	0.72	1.78	0.12	0.15	0.29			0.56	
SB5-Film(1)_pt3	38.39	13.24		0.44	1.94	6.15	1.53	0.38	0.85		0.40	35.47	1.21

	O	*Na*	*Mg*	*Al*	*Si*	*S*	*K*	*Ca*	*Ti*	*Mn*	*Fe*	*Zn*
SB5-Film(1)_pt1	62.70	2.48	2.15	7.32	9.87	1.35	1.91	4.66	1.41		6.15	
SB5-Film(1)_pt2	67.04	3.43	1.31	5.83	14.83	0.99	1.09	1.96			3.51	
SB5-Film(1)_pt3	16.09		0.98	4.08	12.65	3.07	0.69	1.50		0.66	58.28	2.01

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SB5-Film(2)

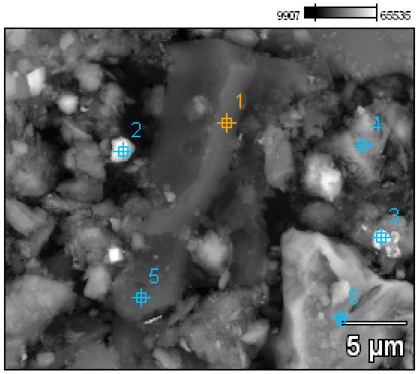
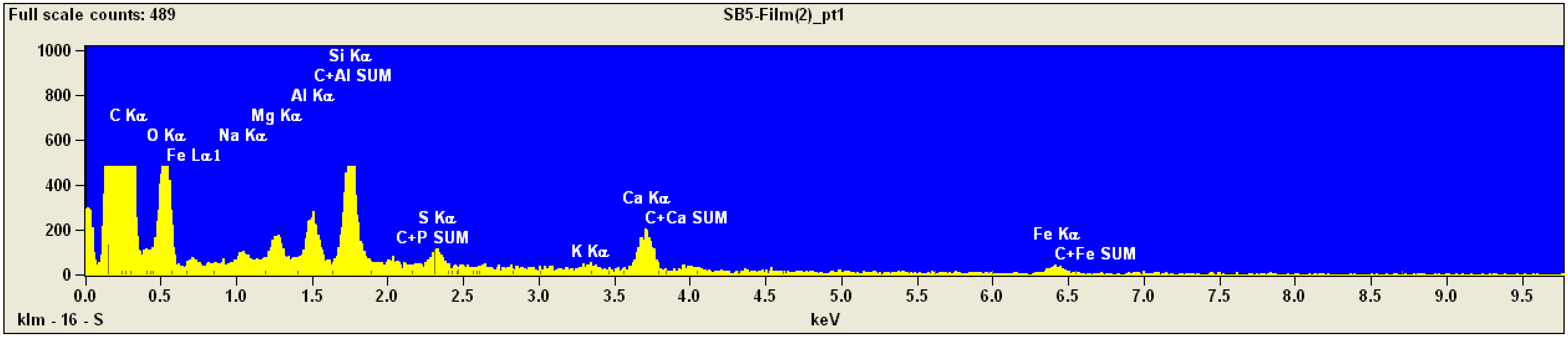
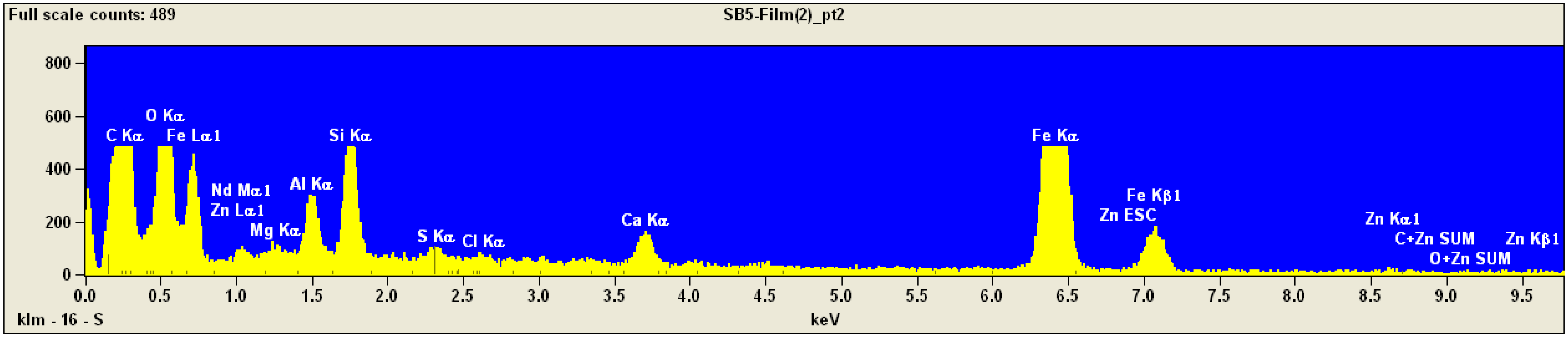


Image Name: SB5-Film(2)

Accelerating Voltage: 20.0 kV

Magnification: 4482





Project: 05-13-2015

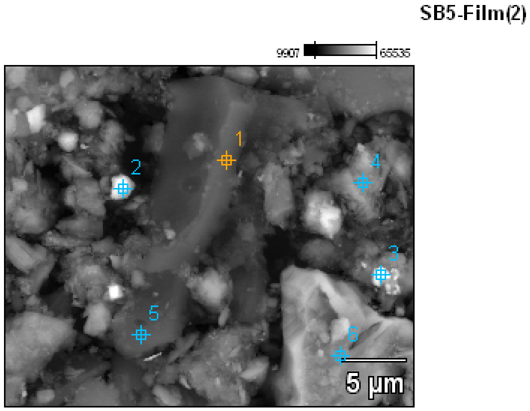
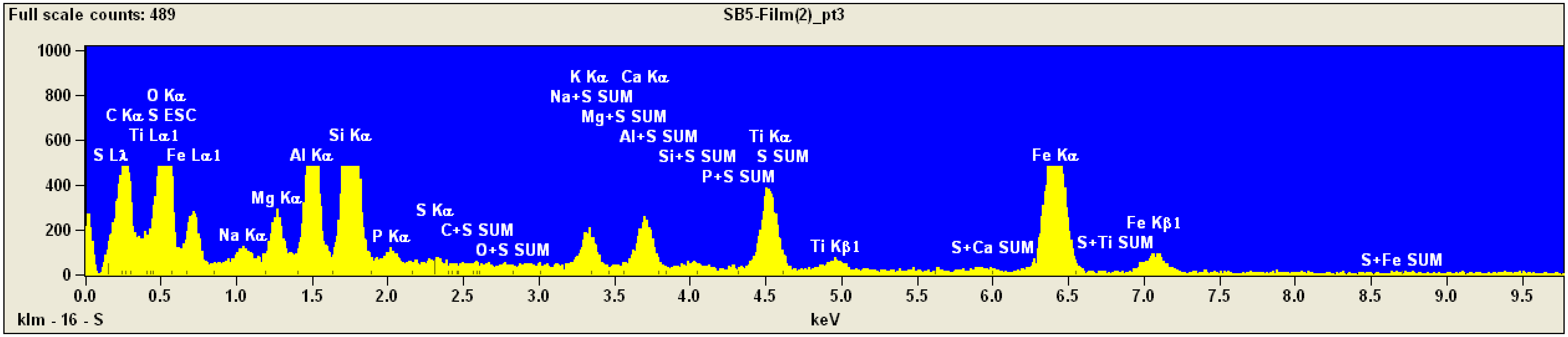
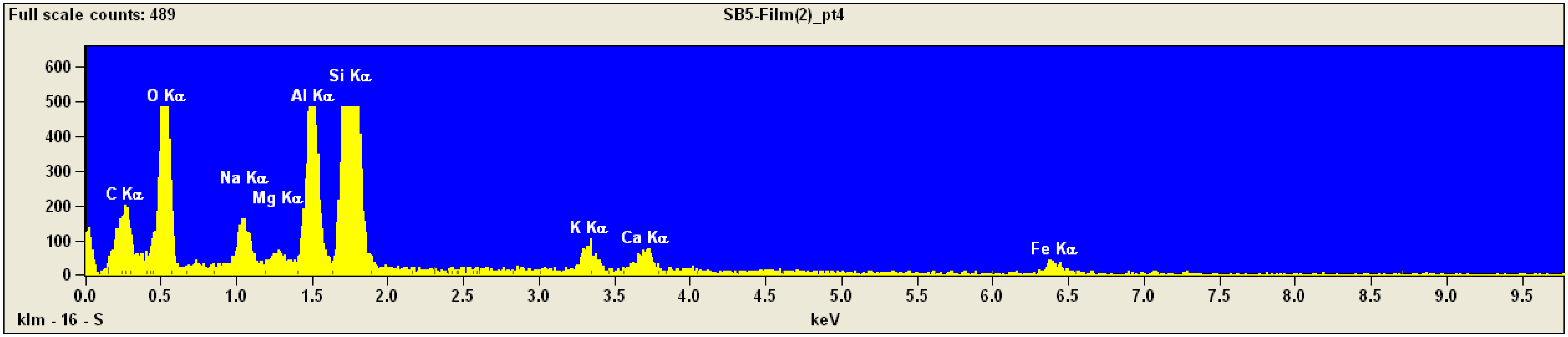


Image Name: SB5-Film(2)

Accelerating Voltage: 20.0 kV

Magnification: 4482





Project: 05-13-2015

SB5-Film(2)

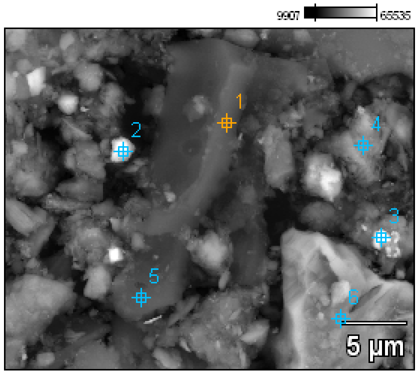
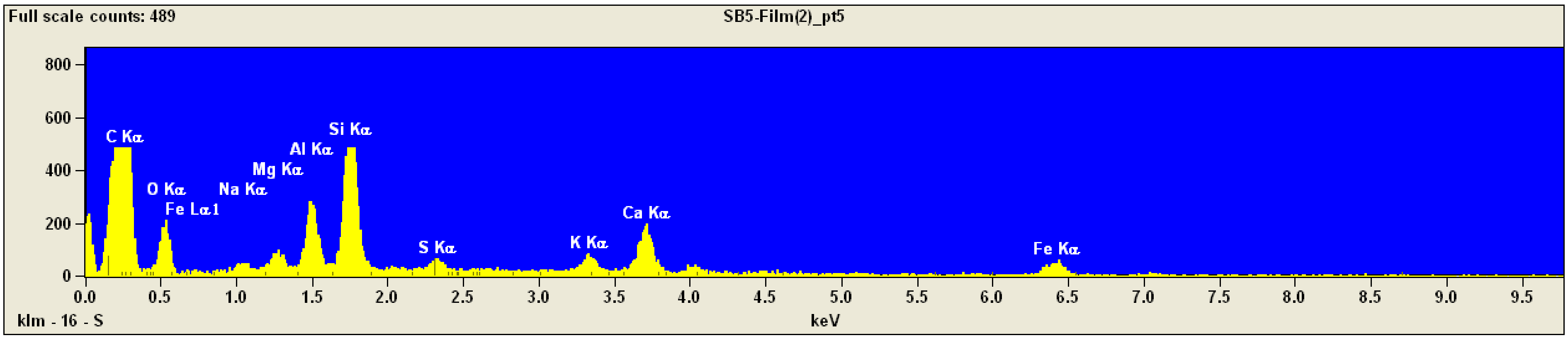
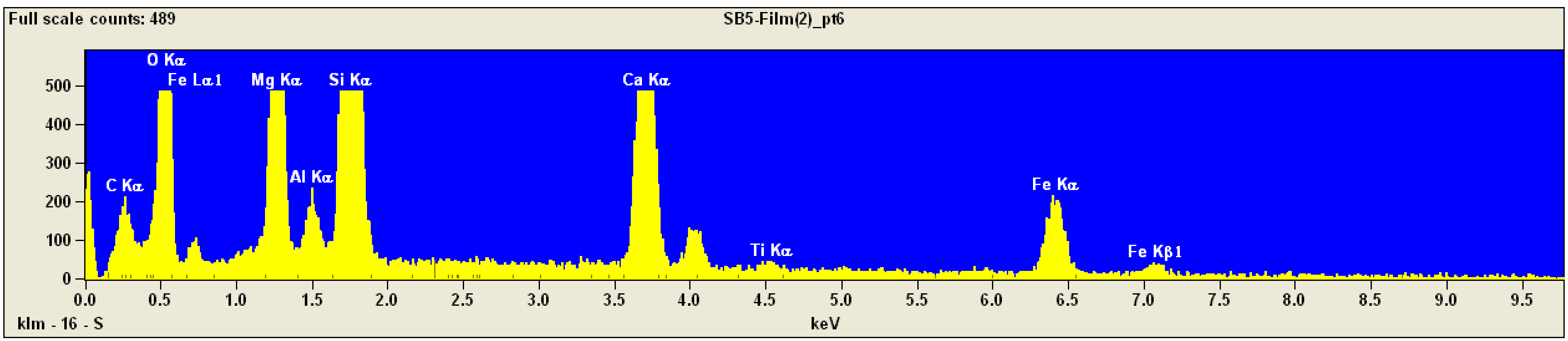


Image Name: SB5-Film(2)

Accelerating Voltage: 20.0 kV

Magnification: 4482





Project: 05-13-2015

SB5-Film(2)

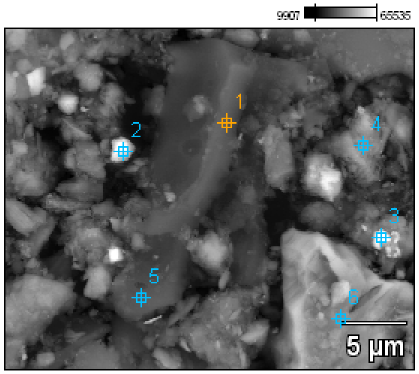


Image Name: SB5-Film(2)

Accelerating Voltage: 20.0 kV

Magnification: 4482

Weight %

	C	***O***	***Na***	***Mg***	***Al***	***Si***	***P***	***S***	***Cl***	***K***	***Ca***	***Ti***	***Fe***	***Zn***	***Nd***
SB5-Film(2)_pt1	74.60	19.52	0.35	0.45	0.85	2.00		0.36		0.14	1.17		0.57		
SB5-Film(2)_pt2	40.52	29.53		0.27	1.46	2.71		0.26	0.13		1.00		23.80	0.33	0.00
SB5-Film(2)_pt3	32.36	34.58	0.80	1.28	3.96	7.26	0.34	0.11		1.00	1.53	3.76	13.01		
SB5-Film(2)_pt4	34.03	36.96	3.47	0.33	5.17	16.78				1.12	1.05		1.09		
SB5-Film(2)_pt5	70.97	14.10	0.61	0.71	2.25	5.41		0.47		0.82	2.57		2.09		
SB5-Film(2)_pt6	24.38	36.16		6.90	0.79	17.99					8.67	0.29	4.83		

	O	***Na***	***Mg***	***Al***	***Si***	***P***	***S***	***Cl***	***K***	***Ca***	***Ti***	***Fe***	***Zn***	***Nd***
SB5-Film(2)_pt1	59.22	2.46	3.28	6.21	15.01		2.72		0.87	7.07		3.16		
SB5-Film(2)_pt2	28.84		0.83	4.49	8.20		0.73	0.36		2.40		53.40	0.74	0.00
SB5-Film(2)_pt3	40.85	1.48	2.31	7.58	14.29	0.69	0.22		1.79	2.67	6.42	21.70		
SB5-Film(2)_pt4	45.04	6.03	0.61	9.49	32.78				2.15	1.99		1.92		
SB5-Film(2)_pt5	38.06	2.49	2.99	9.53	24.48		2.27		3.19	9.81		7.16		
SB5-Film(2)_pt6	40.79		10.21	1.22	27.63					12.81	0.43	6.91		

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SB5-Film(3)

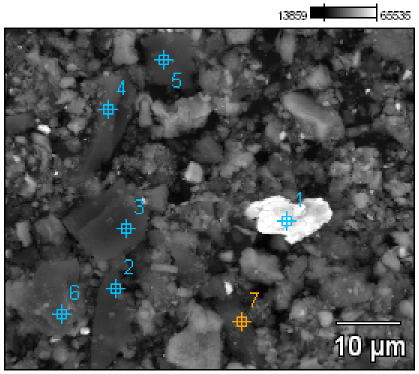
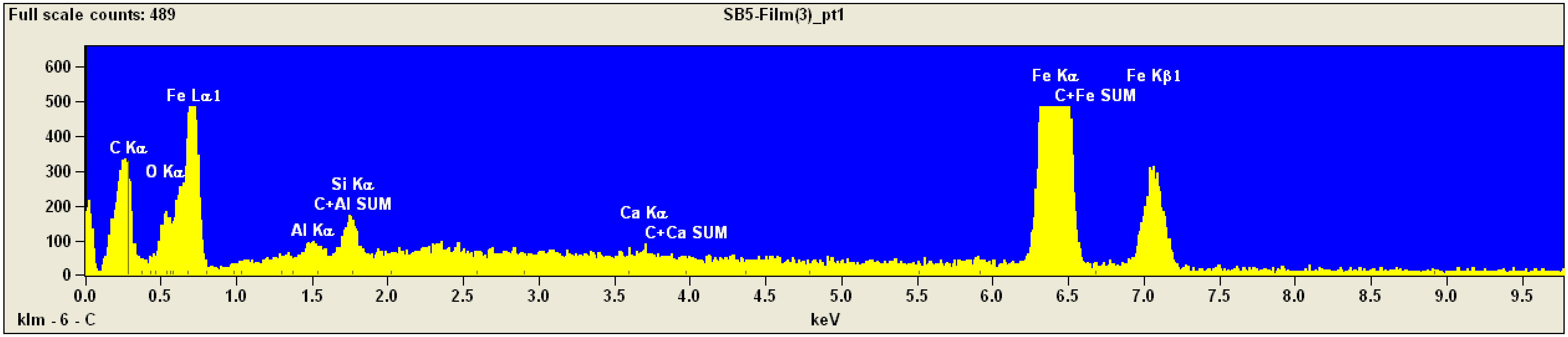
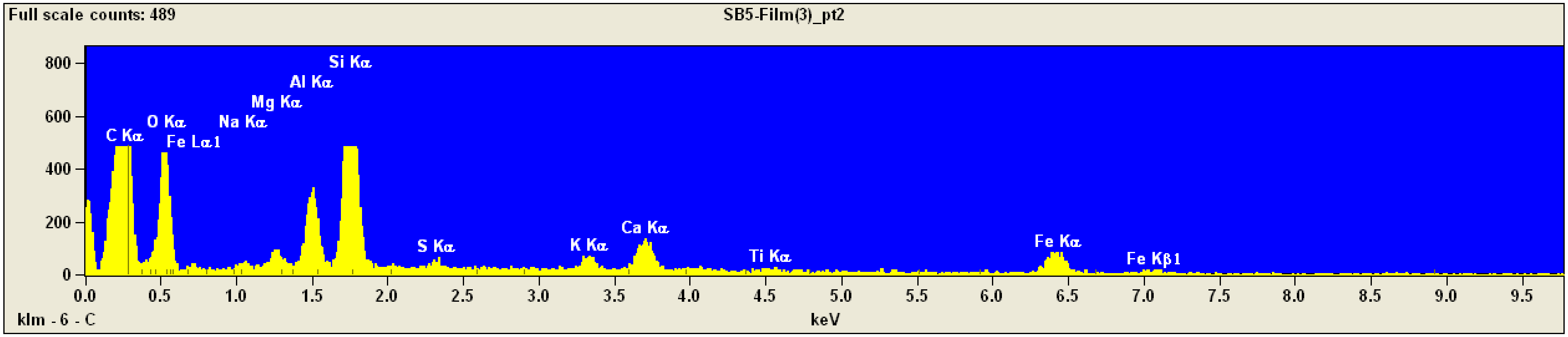


Image Name: SB5-Film(3)

Accelerating Voltage: 20.0 kV

Magnification: 2241





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SB5-Film(3)

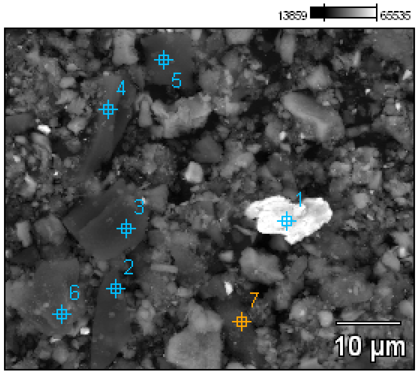
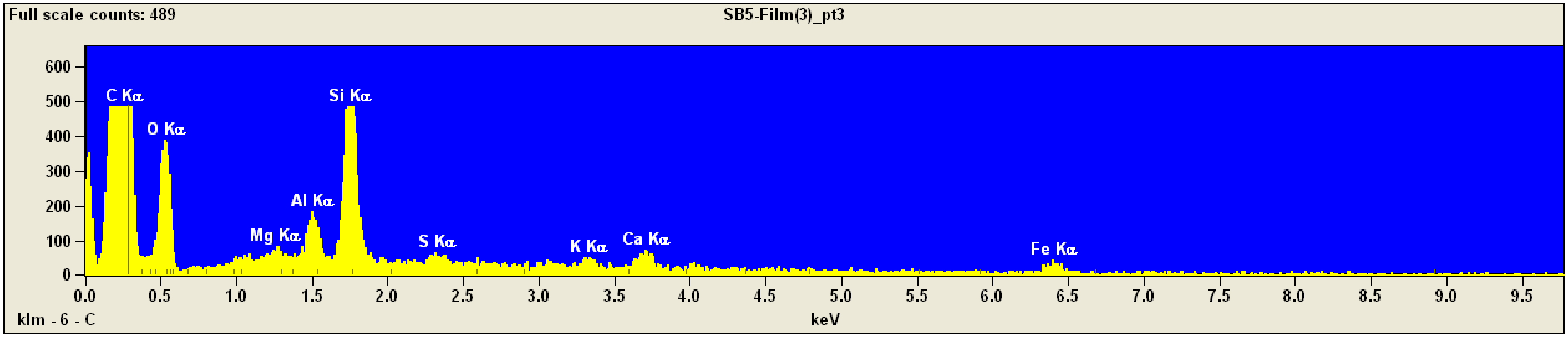
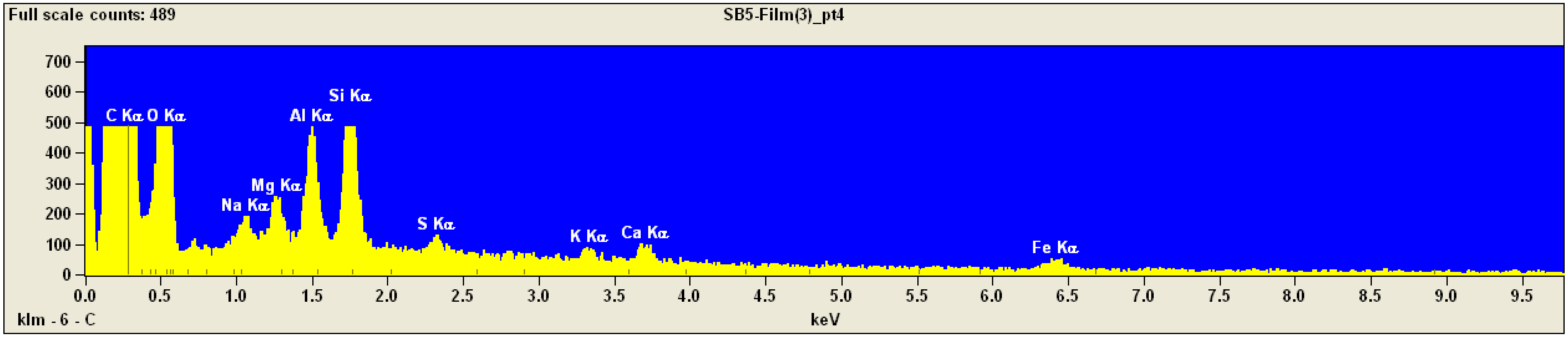


Image Name: SB5-Film(3)

Accelerating Voltage: 20.0 kV

Magnification: 2241





Project: 05-13-2015

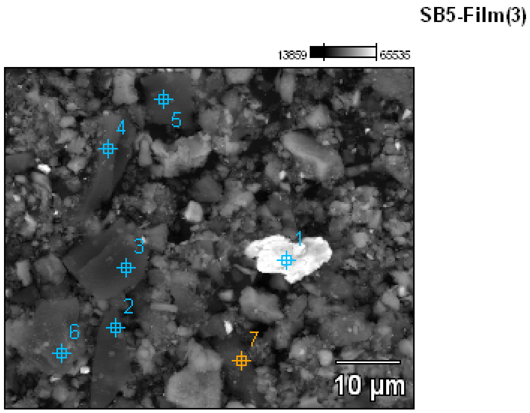
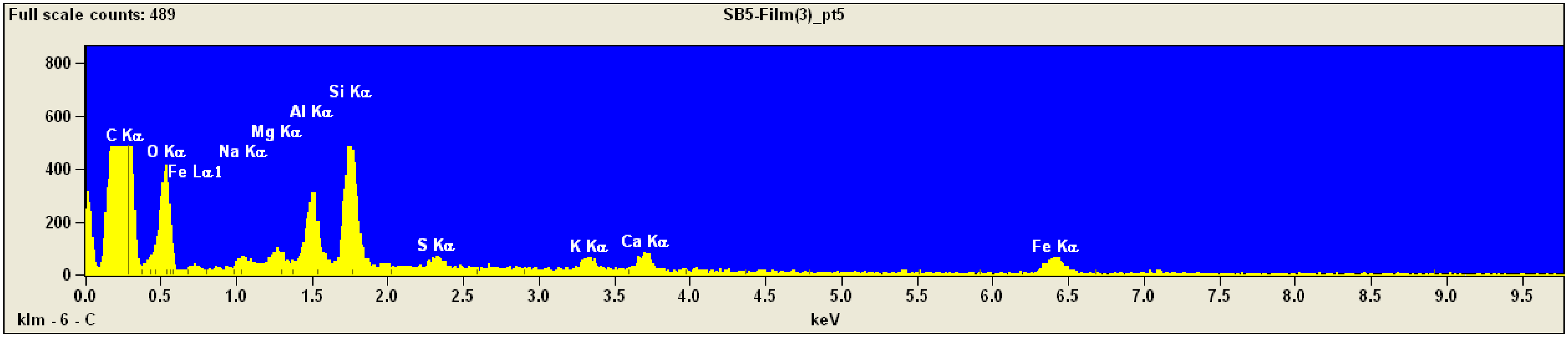
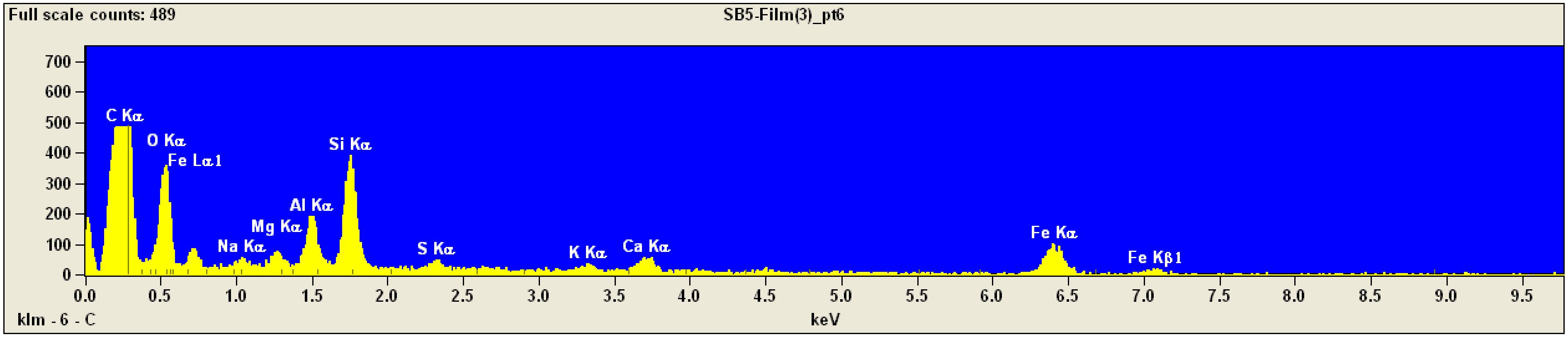


Image Name: SB5-Film(3)

Accelerating Voltage: 20.0 kV

Magnification: 2241





Project: 05-13-2015

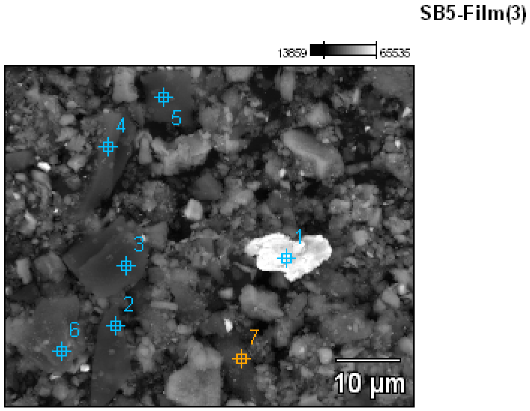
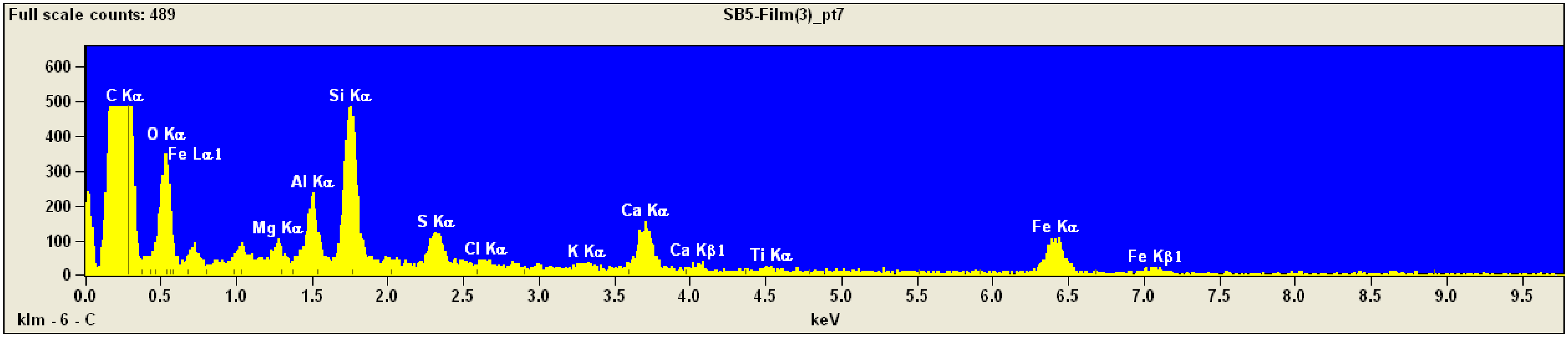


Image Name: SB5-Film(3)

Accelerating Voltage: 20.0 kV

Magnification: 2241



Project: 05-13-2015

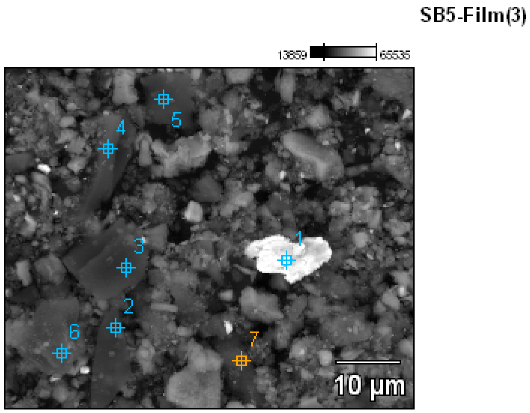


Image Name: SB5-Film(3)

Accelerating Voltage: 20.0 kV

Magnification: 2241

Weight %

	C	O	Na	Mg	Al	Si	S	Cl	K	Ca	Ti	Fe
SB5-Film(3)_pt1	30.57	4.23			0.53	1.12				0.16		63.39
SB5-Film(3)_pt2	57.64	27.15	0.43	0.53	2.21	6.71	0.29		0.47	1.56	0.21	2.79
SB5-Film(3)_pt3	70.50	22.99		0.27	0.87	3.53	0.22		0.24	0.61		0.76
SB5-Film(3)_pt4	70.43	25.68	0.49	0.38	0.89	1.25	0.13		0.12	0.23		0.40
SB5-Film(3)_pt5	68.32	22.19	0.74	0.39	1.68	3.25	0.34		0.48	0.64		1.95
SB5-Film(3)_pt6	63.93	24.84	0.70	0.51	1.41	3.32	0.30		0.30	0.72		3.96
SB5-Film(3)_pt7	68.57	21.63		0.32	1.00	2.86	0.81	0.15	0.18	1.31	0.14	3.03

	O	Na	Mg	Al	Si	S	Cl	K	Ca	Ti	Fe
SB5-Film(3)_pt1	4.64			0.96	1.99				0.25		92.17
SB5-Film(3)_pt2	50.74	1.38	1.77	7.29	23.16	1.09		1.47	4.72	0.61	7.77
SB5-Film(3)_pt3	60.15		1.70	5.40	22.56	1.56		1.36	3.39		3.87
SB5-Film(3)_pt4	66.79	3.93	3.39	7.91	11.60	1.12		0.92	1.67		2.66
SB5-Film(3)_pt5	50.66	3.82	2.11	9.09	18.74	2.01		2.32	3.01		8.24
SB5-Film(3)_pt6	49.76	3.19	2.59	7.03	16.91	1.55		1.27	2.93		14.76
SB5-Film(3)_pt7	51.28		1.81	5.49	15.89	4.52	0.79	0.85	6.02	0.64	12.70

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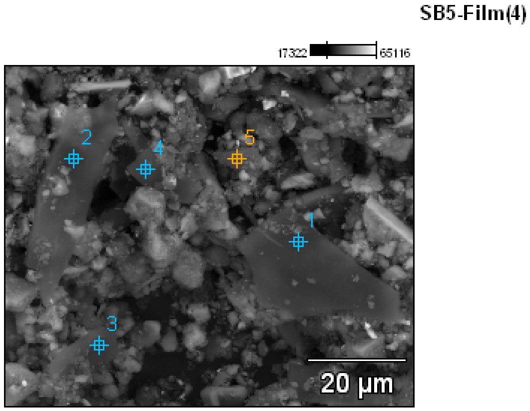
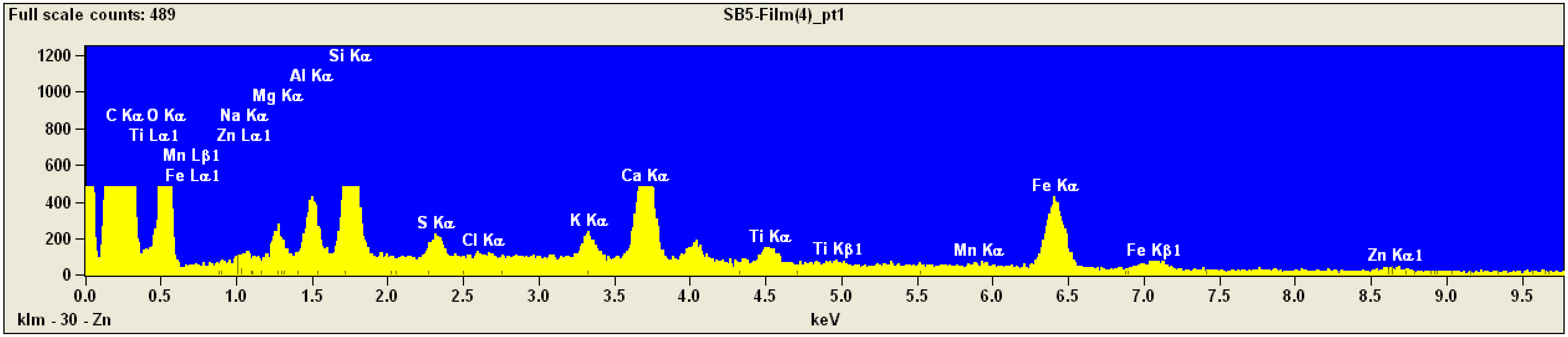
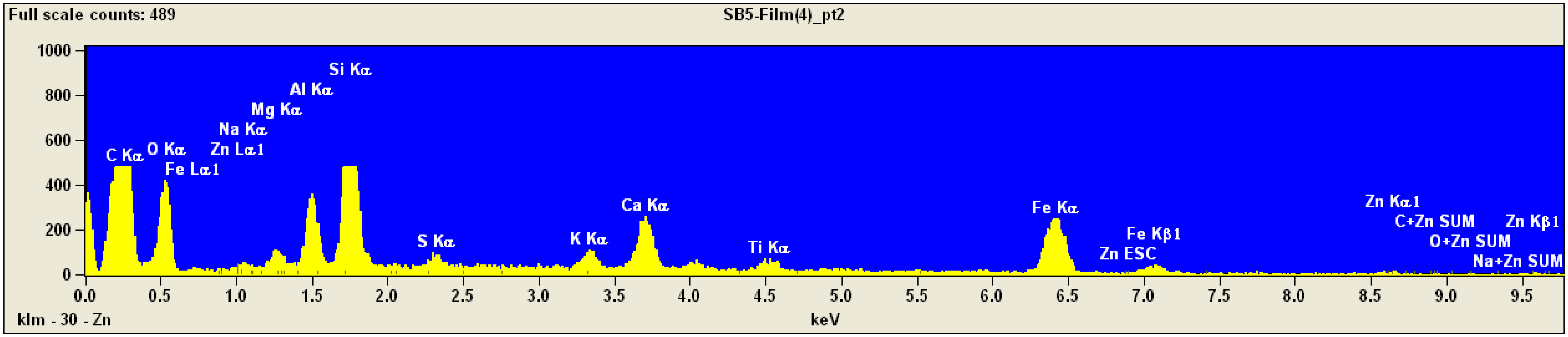


Image Name: SB5-Film(4)

Accelerating Voltage: 20.0 kV

Magnification: 1728





Project: 05-13-2015

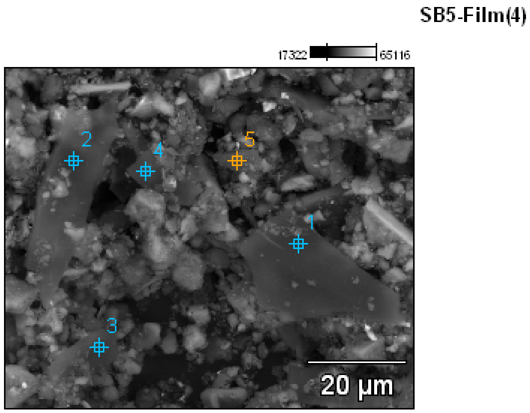
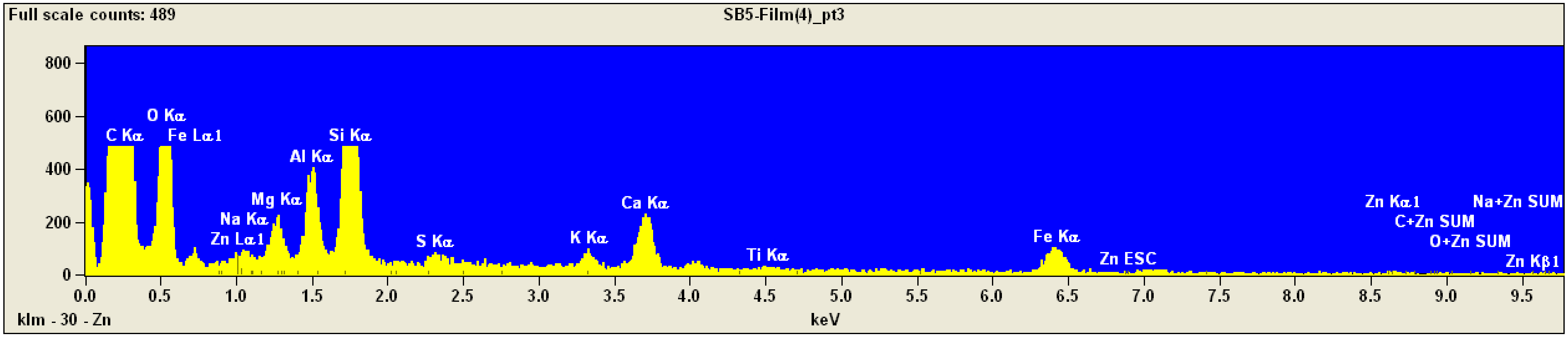
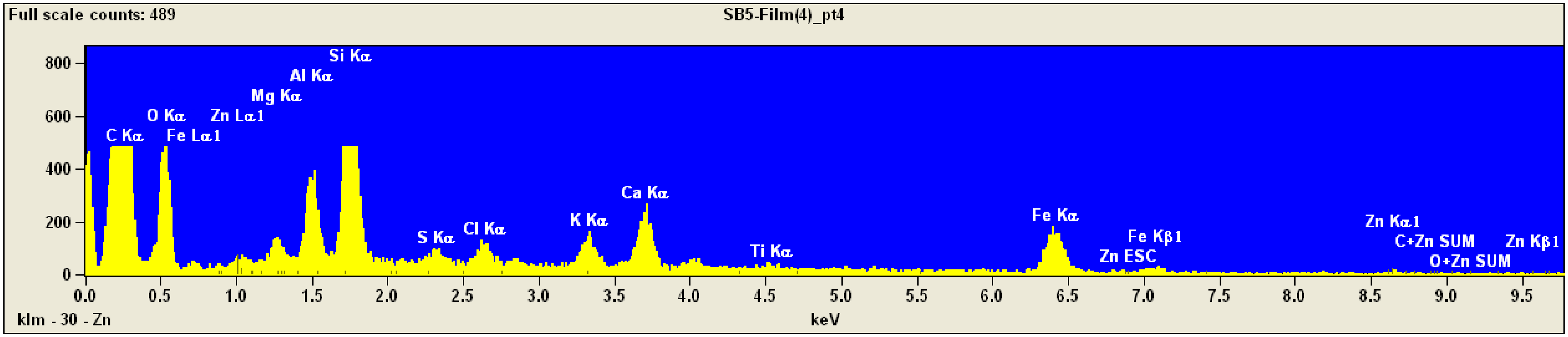


Image Name: SB5-Film(4)

Accelerating Voltage: 20.0 kV

Magnification: 1728





Project: 05-13-2015

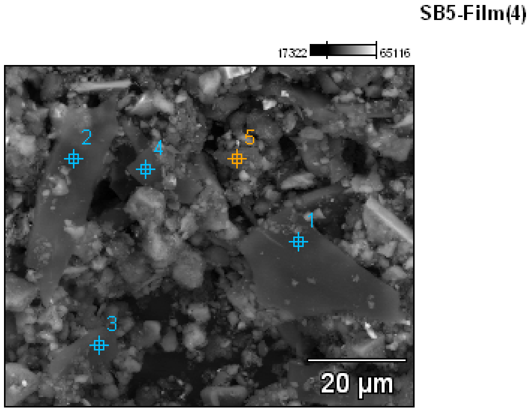
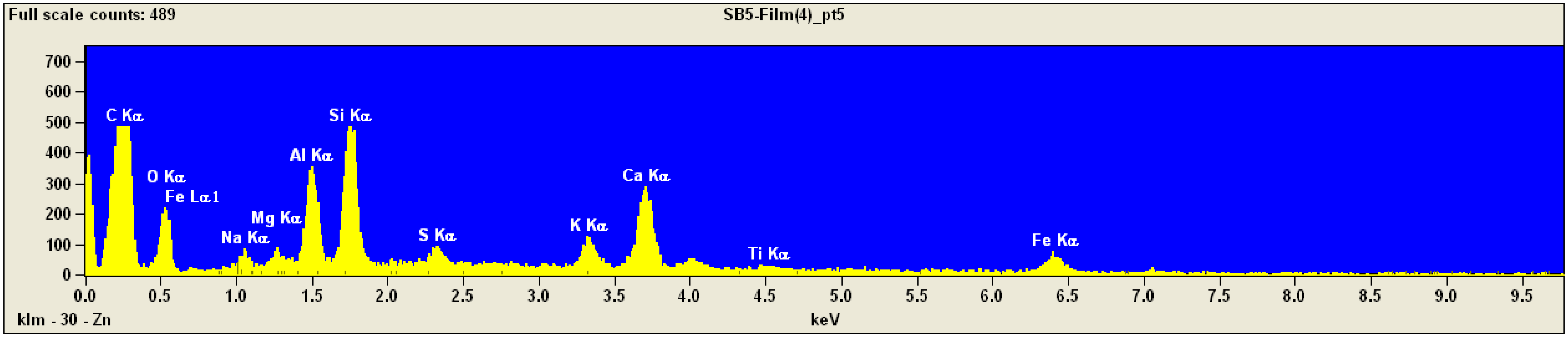


Image Name: SB5-Film(4)

Accelerating Voltage: 20.0 kV

Magnification: 1728



Project: 05-13-2015

SB5-Film(4)

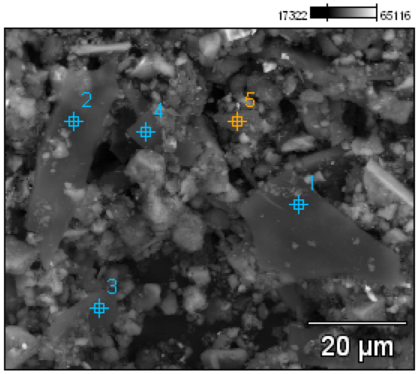


Image Name: SB5-Film(4)

Accelerating Voltage: 20.0 kV

Magnification: 1728

Weight %

	C	O	Na	Mg	Al	Si	S	Cl	K	Ca	Ti	Mn	Fe	Zn
SB5-Film(4)_pt1	61.92	24.86	0.35	0.41	0.70	2.53	0.39	0.07	0.39	2.88	0.57	0.20	4.08	0.66
SB5-Film(4)_pt2	57.52	20.87	0.51	0.57	1.92	6.24	0.44		0.65	2.39	0.88		7.34	0.67
SB5-Film(4)_pt3	61.44	27.00	0.37	0.82	1.54	4.38	0.22		0.32	1.50	0.13		1.99	0.30
SB5-Film(4)_pt4	59.00	24.46		0.50	2.03	5.55	0.40	0.55	0.97	1.89	0.18		3.99	0.47
SB5-Film(4)_pt5	62.75	20.57	1.08	0.35	2.68	4.56	0.65		1.09	3.98	0.26		2.04	

	O	Na	Mg	Al	Si	S	Cl	K	Ca	Ti	Mn	Fe	Zn
SB5-Film(4)_pt1	51.23	0.00	1.80	3.09	11.26	1.68	0.29	1.42	10.42	2.06	0.67	13.85	2.23
SB5-Film(4)_pt2	39.17	1.31	1.98	6.60	19.75	1.42		1.75	6.31	2.26		17.85	1.61
SB5-Film(4)_pt3	55.84	1.39	3.33	6.23	18.16	0.92		1.14	5.23	0.42		6.38	0.96
SB5-Film(4)_pt4	46.34		2.13	7.02	19.56	1.46	1.87	3.02	5.75	0.52		11.07	1.29
SB5-Film(4)_pt5	43.52	3.75	1.29	9.43	16.95	2.43		3.47	12.47	0.79		5.89	

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SB5-Film(6)

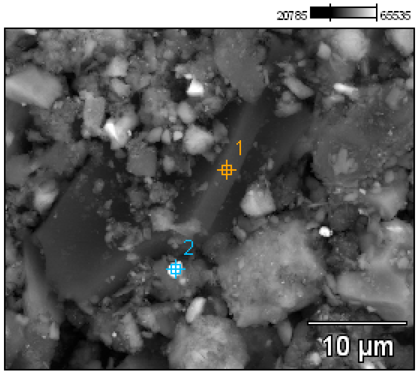
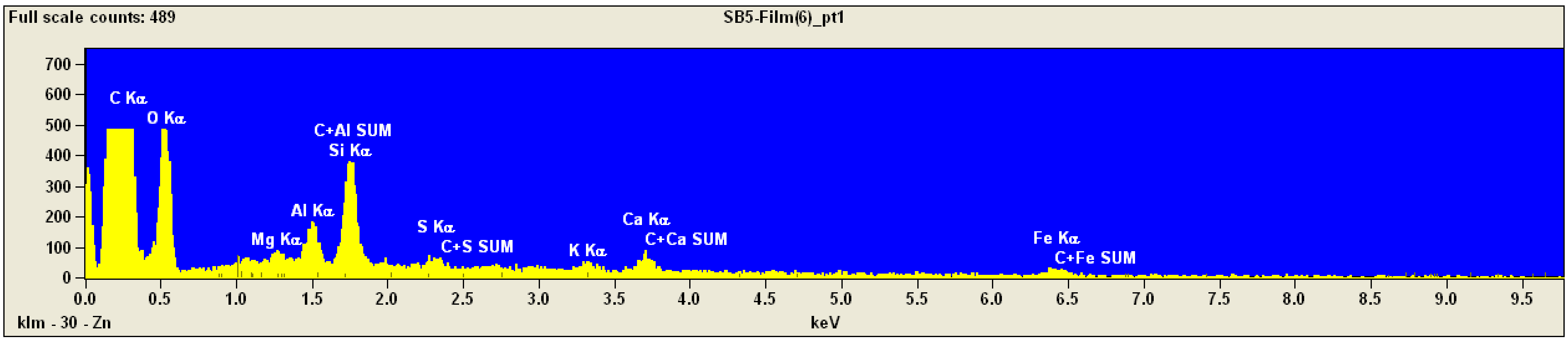
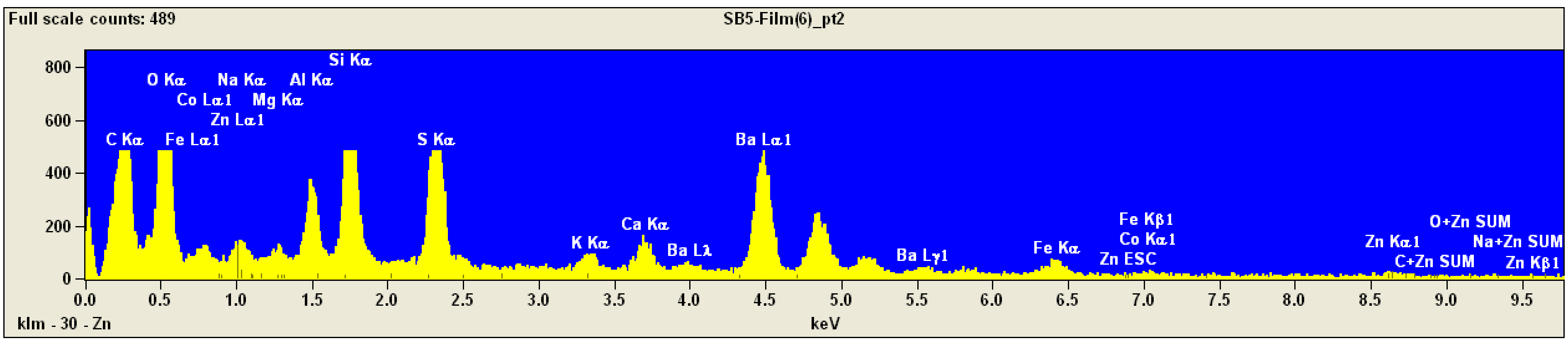


Image Name: SB5-Film(6)

Accelerating Voltage: 20.0 kV

Magnification: 3456





Project: 05-13-2015

SB5-Film(6)

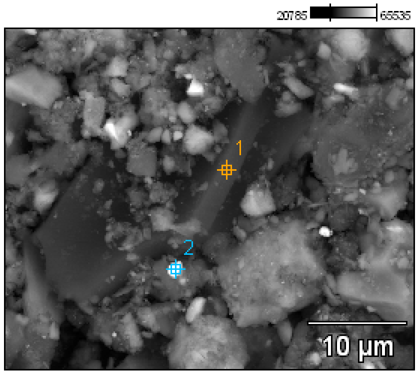


Image Name: SB5-Film(6)

Accelerating Voltage: 20.0 kV

Magnification: 3456

Weight %

	C	O	Na	Mg	Al	Si	S	K	Ca	Fe	Co	Zn	Ba
SB5-Film(6)_pt1	72.70	23.08		0.18	0.69	1.79	0.23	0.23	0.52	0.60			
SB5-Film(6)_pt2	37.05	31.51	0.94	0.37	2.02	4.74	4.45	0.59	0.95	1.40	0.02	0.50	15.44

	O	Na	Mg	Al	Si	S	K	Ca	Fe	Co	Zn	Ba
SB5-Film(6)_pt1	67.00		1.47	5.60	14.92	1.95	1.61	3.63	3.83			
SB5-Film(6)_pt2	37.54	1.99	0.83	4.51	10.55	9.61	1.17	1.81	2.57	0.04	0.88	28.49

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SB5-Fines(1)

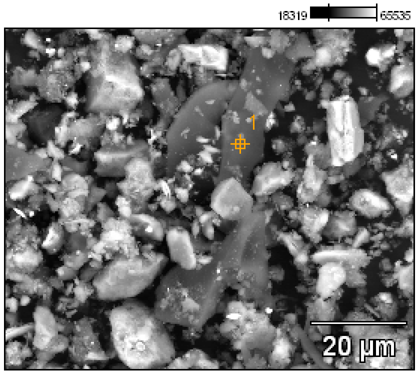
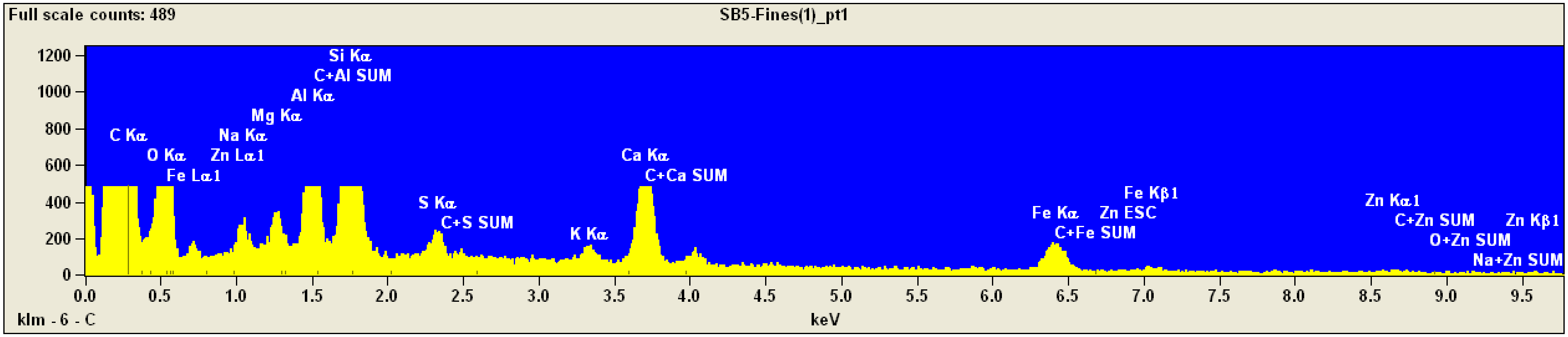


Image Name: SB5-Fines(1)

Accelerating Voltage: 20.0 kV

Magnification: 1691



Project: 05-13-2015

SB5-Fines(1)

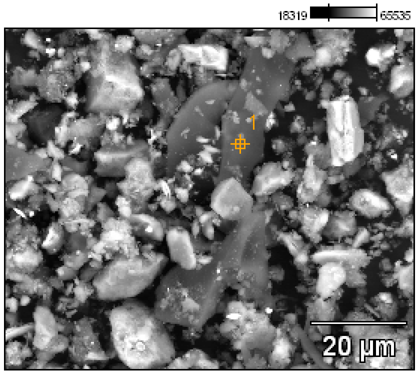


Image Name: SB5-Fines(1)

Accelerating Voltage: 20.0 kV

Magnification: 1691

Weight %

	C	**O**	**Na**	**Mg**	**Al**	**Si**	**S**	**K**	**Ca**	**Fe**	**Zn**
SB5-Fines(1)_pt1	68.81	21.47	0.71	0.38	1.48	3.48	0.25	0.20	1.72	1.35	0.16

	O	**Na**	**Mg**	**Al**	**Si**	**S**	**K**	**Ca**	**Fe**	**Zn**
SB5-Fines(1)_pt1	54.45	0.00	1.69	7.55	19.36	1.43	0.97	8.06	5.81	0.67

Project: 05-13-2015

SB5-Fines(2)

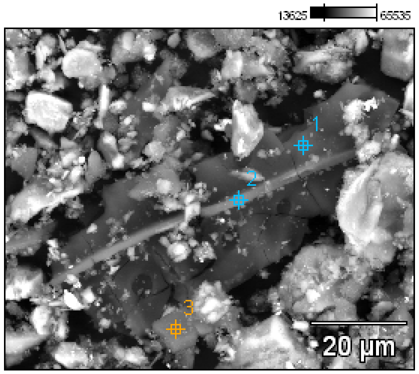
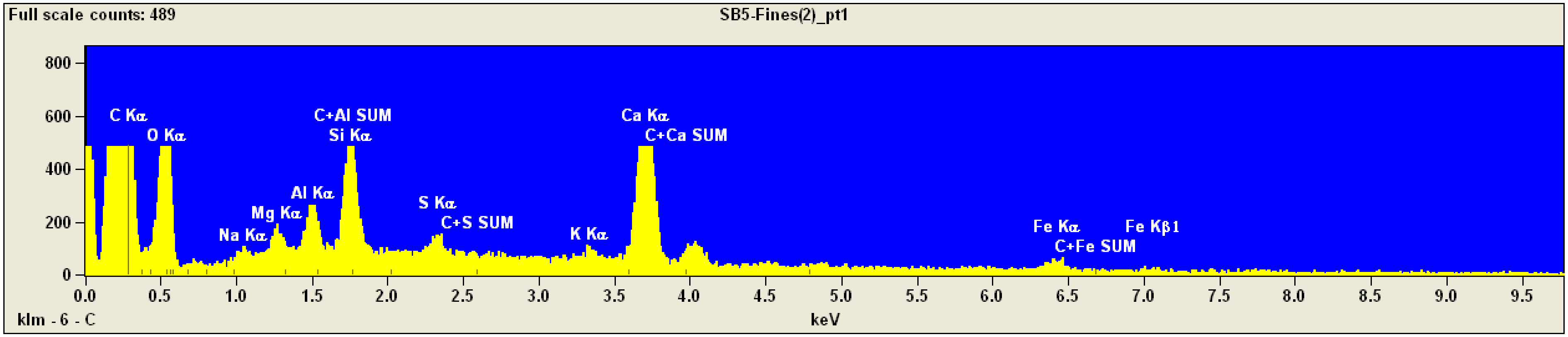
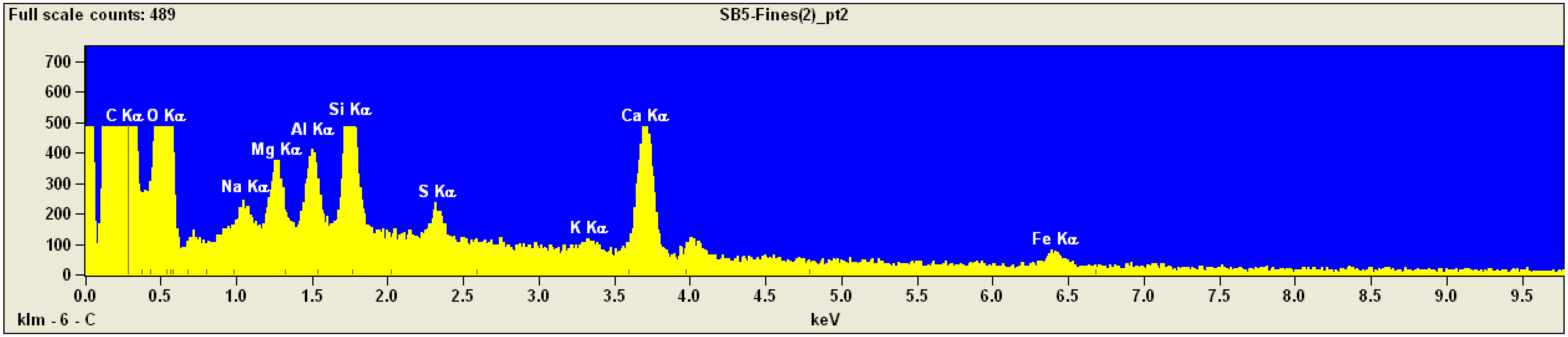


Image Name: SB5-Fines(2)

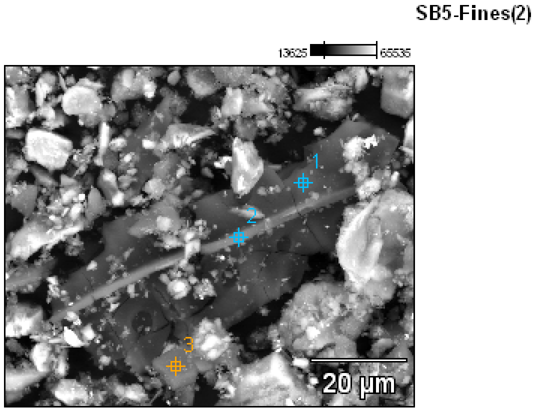
Accelerating Voltage: 20.0 kV

Magnification: 1691





Project: 05-13-2015



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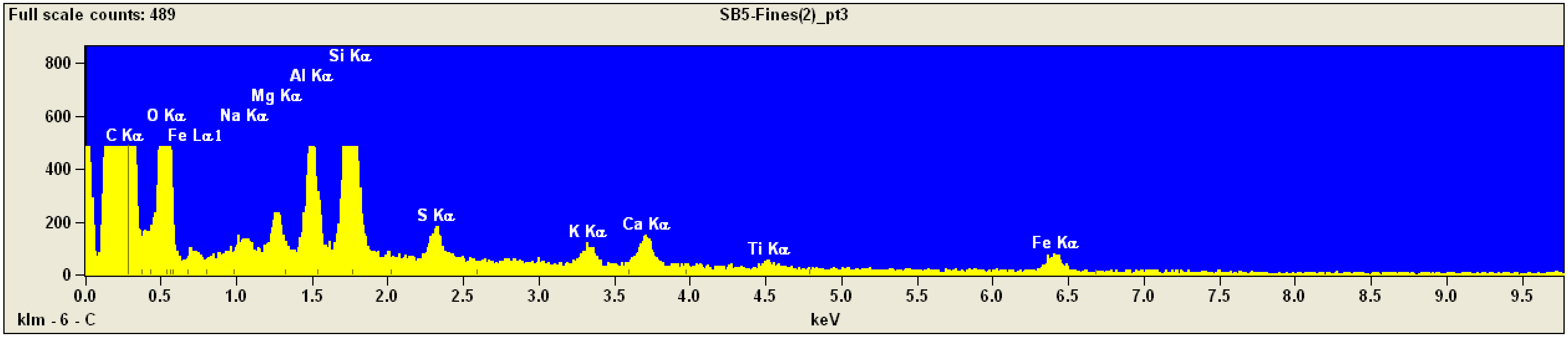
Accelerating Voltage: 20.0 kV

Magnification: 1691



Project: 05-13-2015

SB5-Fines(2)

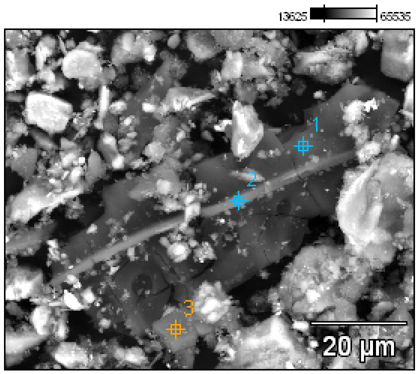


Image Name: SB5-Fines(2)

Accelerating Voltage: 20.0 kV

Magnification: 1691

Weight %

	C	O	Na	Mg	Al	Si	S	K	Ca	Ti	Fe
SB5-Fines(2)_pt1	61.84	28.26	0.55	0.48	0.79	1.92	0.30	0.23	4.94		0.69
SB5-Fines(2)_pt2	66.72	28.91	0.40	0.48	0.47	0.94	0.21	0.10	1.38		0.38
SB5-Fines(2)_pt3	73.39	20.23	0.46	0.41	1.15	2.49	0.31	0.30	0.41	0.15	0.70

	O	Na	Mg	Al	Si	S	K	Ca	Ti	Fe
SB5-Fines(2)_pt1	64.03	1.72	2.00	3.31	7.84	1.19	0.79	16.84		2.28
SB5-Fines(2)_pt2	72.37	2.19	3.42	3.45	6.65	1.41	0.59	7.85		2.06
SB5-Fines(2)_pt3	59.96	2.40	2.93	7.54	16.83	2.12	1.69	2.27	0.80	3.46

Project: 05-13-2015

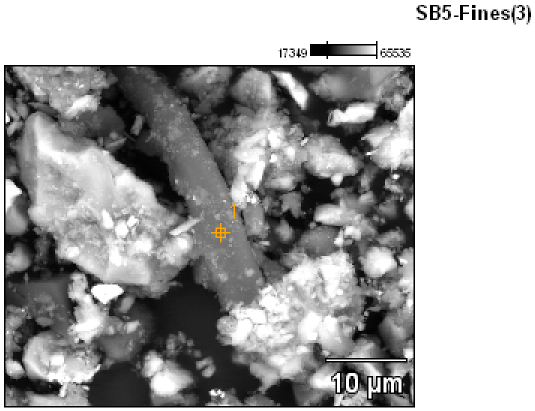
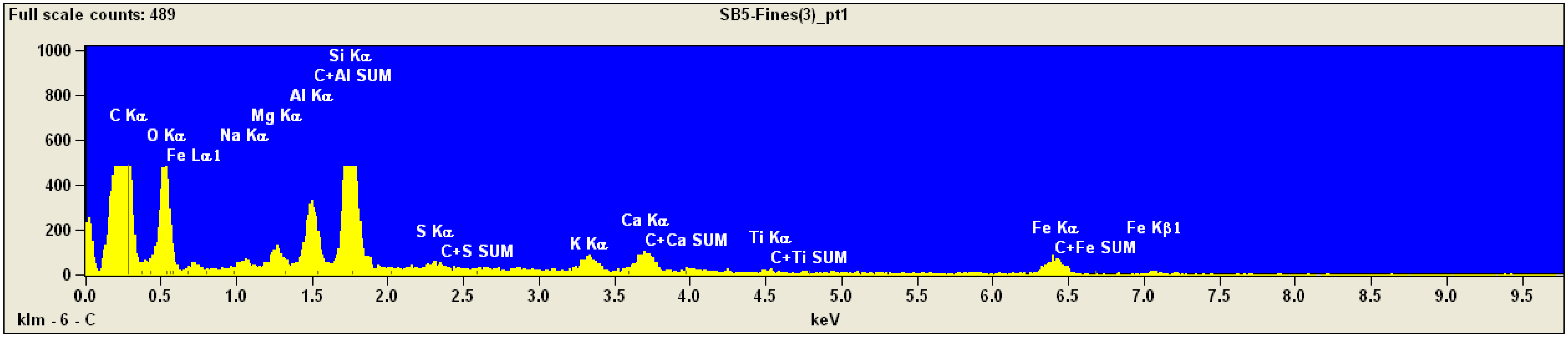


Image Name: SB5-Fines(3)

Accelerating Voltage: 20.0 kV

Magnification: 2844



Project: 05-13-2015

SB5-Fines(3)

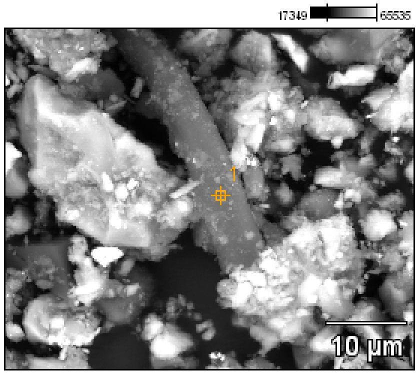


Image Name: SB5-Fines(3)

Accelerating Voltage: 20.0 kV

Magnification: 2844

Weight %

	C	***O***	***Na***	***Mg***	***Al***	***Si***	***S***	***K***	***Ca***	***Ti***	***Fe***
SB5-Fines(3)_pt1	59.75	26.31	0.65	0.73	2.19	5.69	0.25	0.77	1.14	0.21	2.30

	O	***Na***	***Mg***	***Al***	***Si***	***S***	***K***	***Ca***	***Ti***	***Fe***
SB5-Fines(3)_pt1	52.15	2.18	2.60	7.72	20.97	0.96	2.51	3.62	0.63	6.65

Project: 05-13-2015

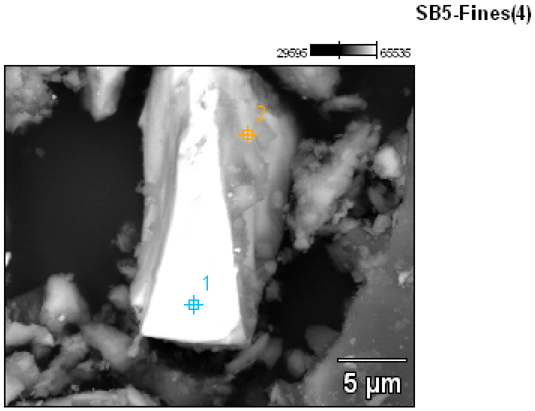
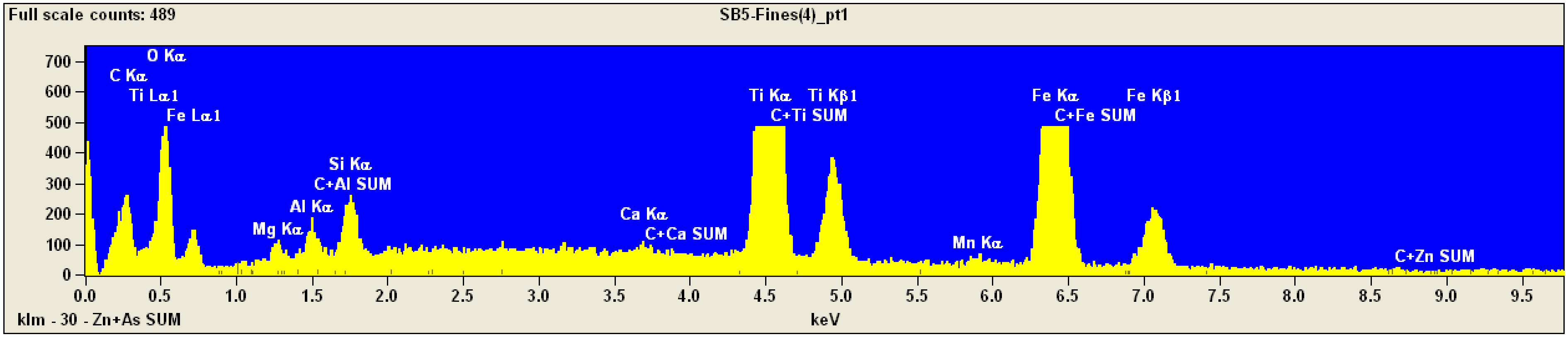
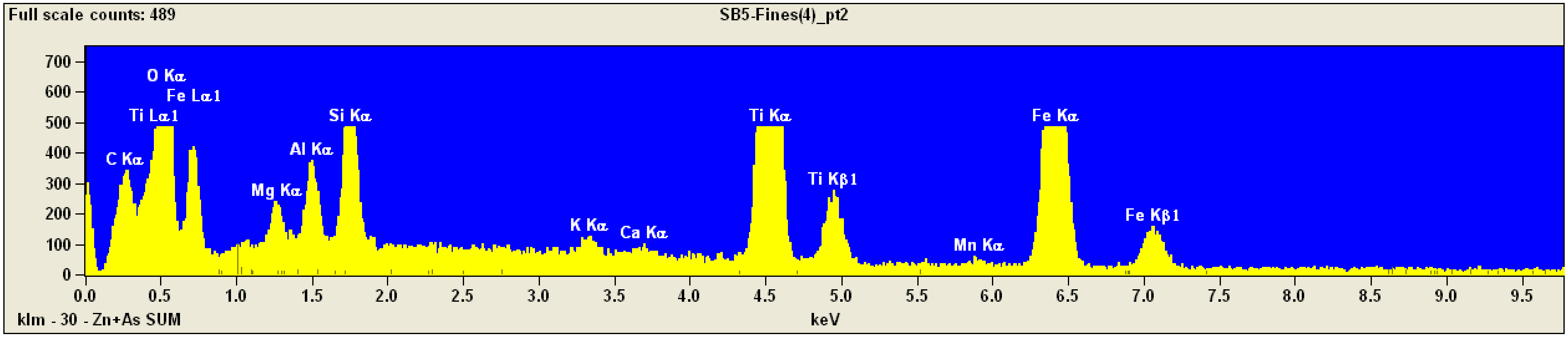


Image Name: SB5-Fines(4)

Accelerating Voltage: 20.0 kV

Magnification: 4783





Project: 05-13-2015

SB5-Fines(4)

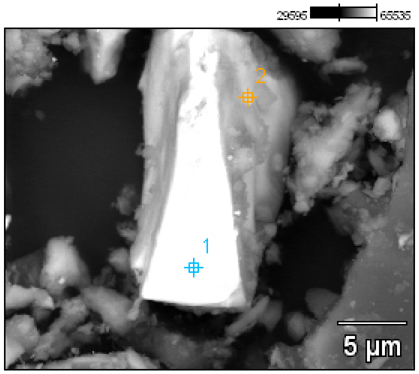


Image Name: SB5-Fines(4)

Accelerating Voltage: 20.0 kV

Magnification: 4783

Weight %

	C	O	Mg	Al	Si	K	Ca	Ti	Mn	Fe
SB5-Fines(4)_pt1	15.93	19.19	0.55	0.64	1.38		0.16	29.19	0.43	32.53
SB5-Fines(4)_pt2	19.90	39.04	0.77	1.44	3.02	0.33	0.20	16.65	0.32	18.32

	O	Mg	Al	Si	K	Ca	Ti	Mn	Fe
SB5-Fines(4)_pt1	23.16	0.71	0.82	1.76		0.19	34.42	0.51	38.44
SB5-Fines(4)_pt2	36.22	1.35	2.50	5.21	0.52	0.31	25.36	0.50	28.03

Project: 05-13-2015

SB5-Fines(5)

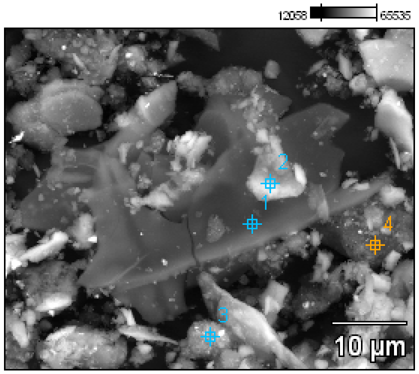
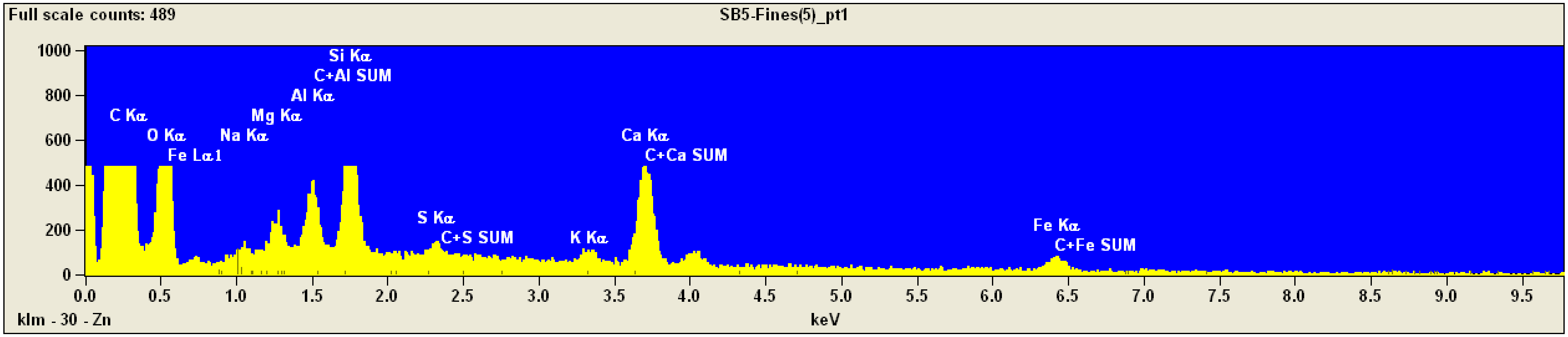
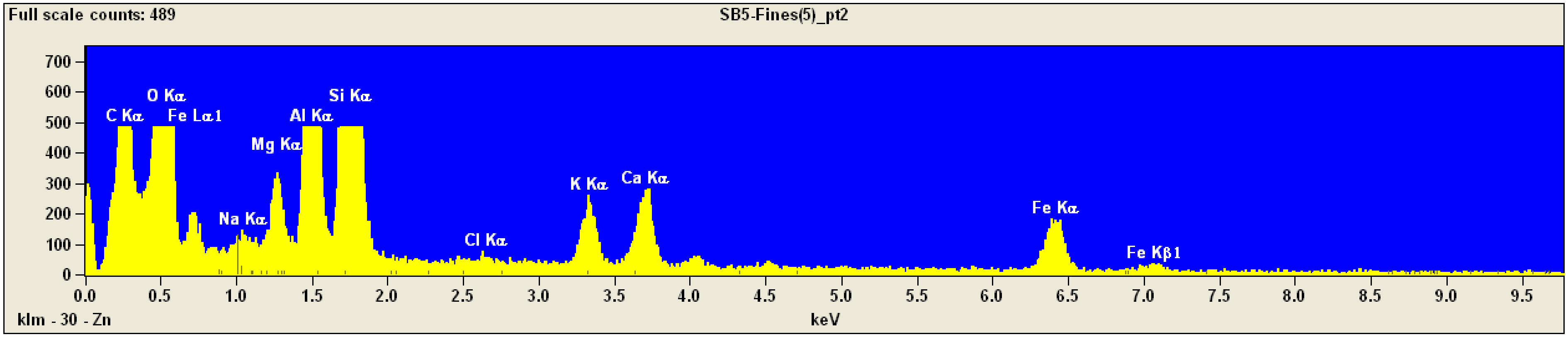


Image Name: SB5-Fines(5)

Accelerating Voltage: 20.0 kV

Magnification: 2608





Project: 05-13-2015

SB5-Fines(5)

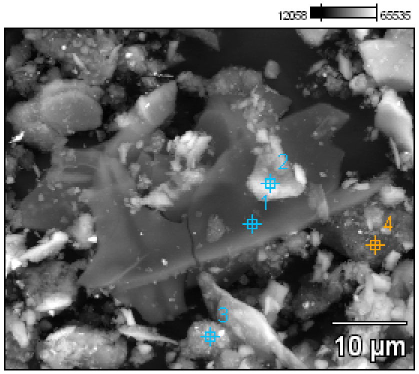
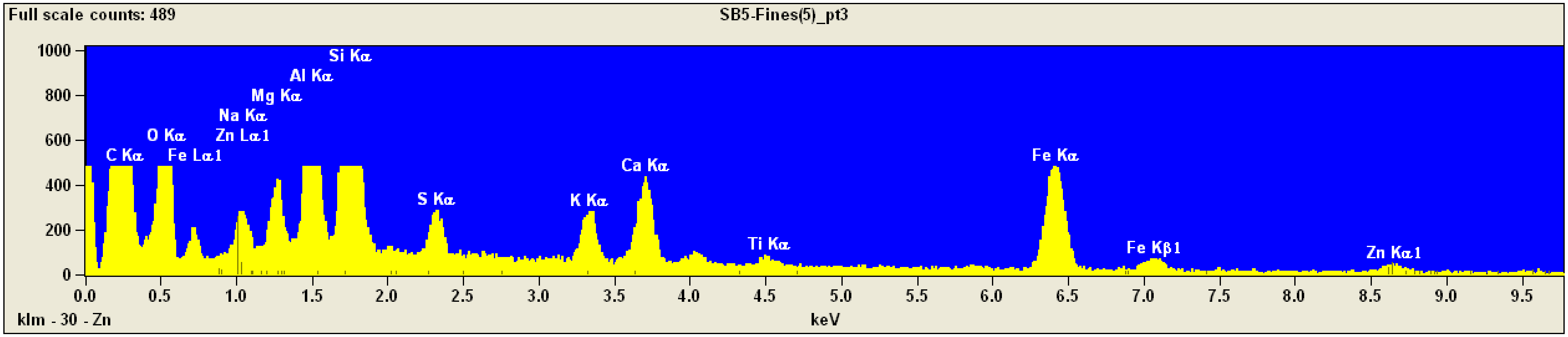
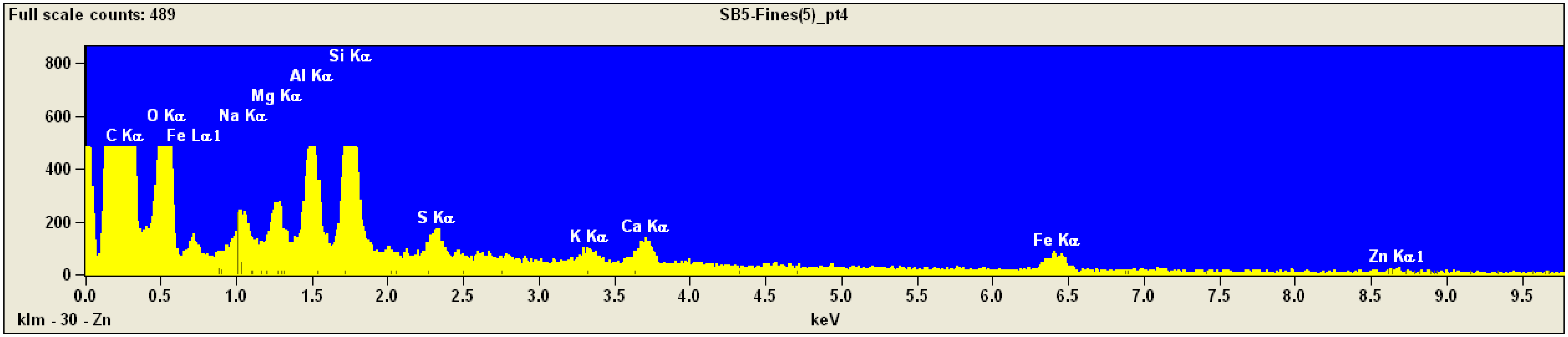


Image Name: SB5-Fines(5)

Accelerating Voltage: 20.0 kV

Magnification: 2608





Project: 05-13-2015

SB5-Fines(5)

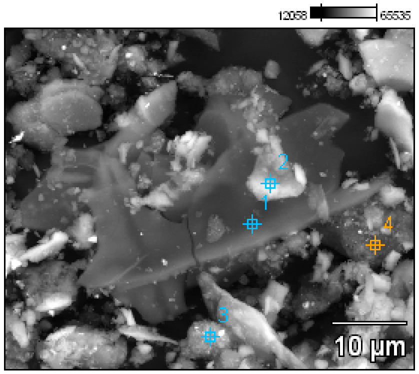


Image Name: SB5-Fines(5)

Accelerating Voltage: 20.0 kV

Magnification: 2608

Weight %

	C	O	Na	Mg	Al	Si	S	Cl	K	Ca	Ti	Fe	Zn
SB5-Fines(5)_pt1	65.31	26.93	0.37	0.56	0.96	2.10	0.21		0.25	2.48		0.83	
SB5-Fines(5)_pt2	29.03	48.12	0.33	0.85	4.90	11.79		0.06	1.01	1.40		2.49	
SB5-Fines(5)_pt3	48.31	26.16	1.16	1.03	3.73	8.45	0.81		0.91	1.86	0.26	6.24	1.09
SB5-Fines(5)_pt4	65.07	27.97	0.57	0.54	1.33	2.18	0.39		0.21	0.46		0.94	0.32

	O	Na	Mg	Al	Si	S	Cl	K	Ca	Ti	Fe	Zn
SB5-Fines(5)_pt1	63.30	1.78	3.00	4.97	10.94	1.06		1.07	10.56		3.32	
SB5-Fines(5)_pt2	55.06	1.10	1.65	9.25	23.69		0.13	1.95	2.68		4.49	
SB5-Fines(5)_pt3	39.82	2.89	2.53	9.16	21.66	2.15		2.07	4.15	0.56	12.82	2.21
SB5-Fines(5)_pt4	63.29	0.00	2.65	7.72	14.05	2.51		1.18	2.46		4.57	1.56

Project: 05-13-2015

SB5-Fines(6)

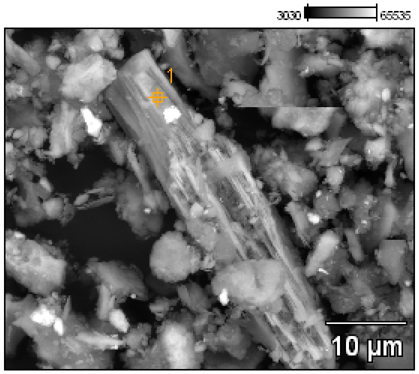
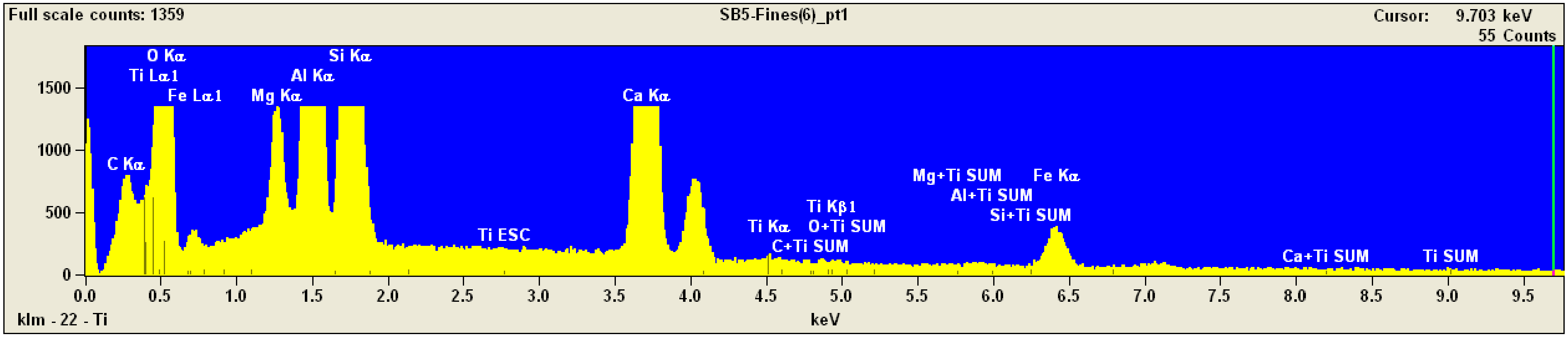


Image Name: SB5-Fines(6)

Accelerating Voltage: 20.0 kV

Magnification: 2844



Project: 05-13-2015

SB5-Fines(6)

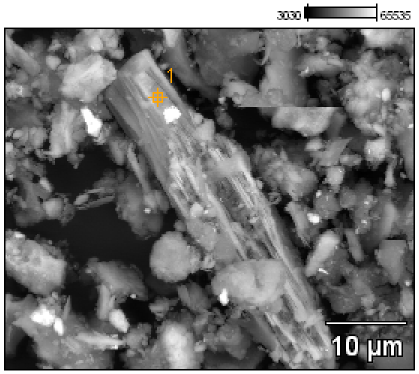


Image Name: SB5-Fines(6)

Accelerating Voltage: 20.0 kV

Magnification: 2844

Weight %

	C	O	Mg	Al	Si	Ca	Ti	Fe
SB5-Fines(6)_pt1	18.28	43.20	1.25	10.95	14.07	10.60	0.08	1.56

	O	Mg	Al	Si	Ca	Ti	Fe
SB5-Fines(6)_pt1	44.34	1.74	15.37	21.06	15.19	0.11	2.18

Project: 05-13-2015

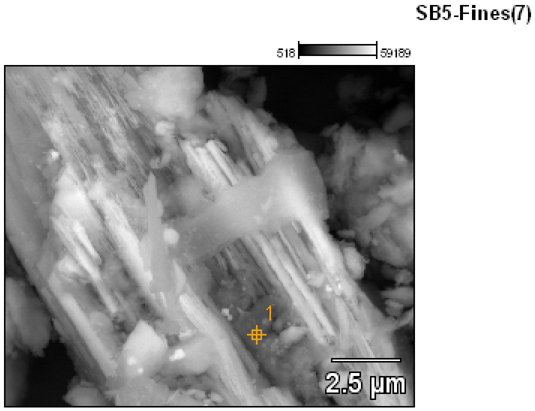
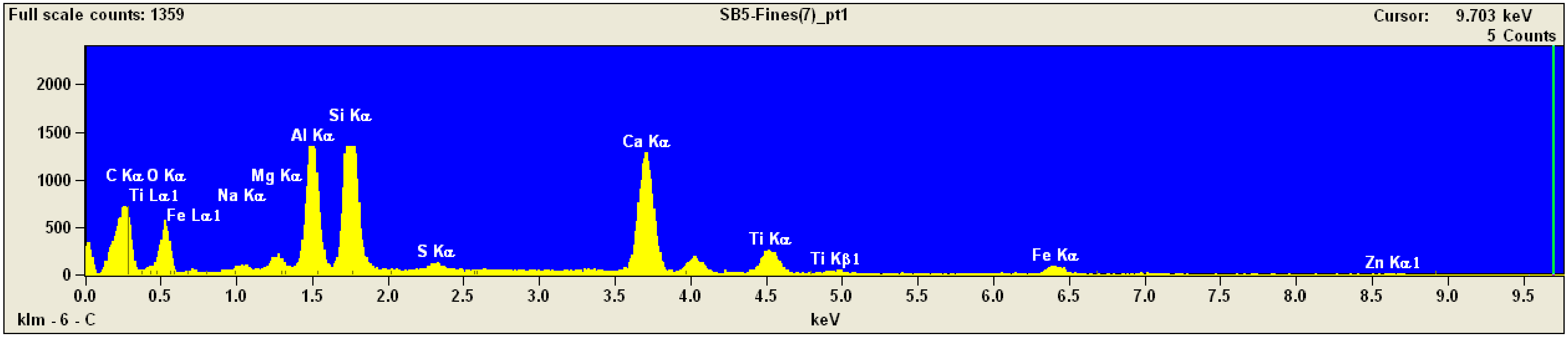


Image Name: SB5-Fines(7)

Accelerating Voltage: 20.0 kV

Magnification: 9566



Project: 05-13-2015

SB5-Fines(7)

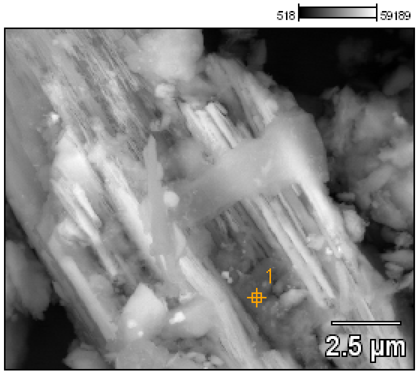


Image Name: SB5-Fines(7)

Accelerating Voltage: 20.0 kV

Magnification: 9566

Weight %

	C	O	Na	Mg	Al	Si	S	Ca	Ti	Fe	Zn
SB5-Fines(7)_pt1	47.13	20.57	0.50	0.72	6.28	9.21	0.53	9.56	3.11	1.72	0.68

	O	Na	Mg	Al	Si	S	Ca	Ti	Fe	Zn
SB5-Fines(7)_pt1	36.59	0.81	1.53	12.82	19.52	1.13	17.65	5.75	3.03	1.17

Project: 05-13-2015

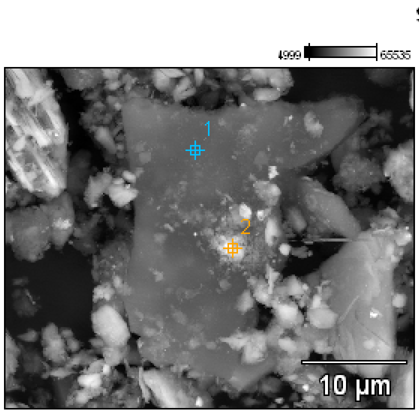
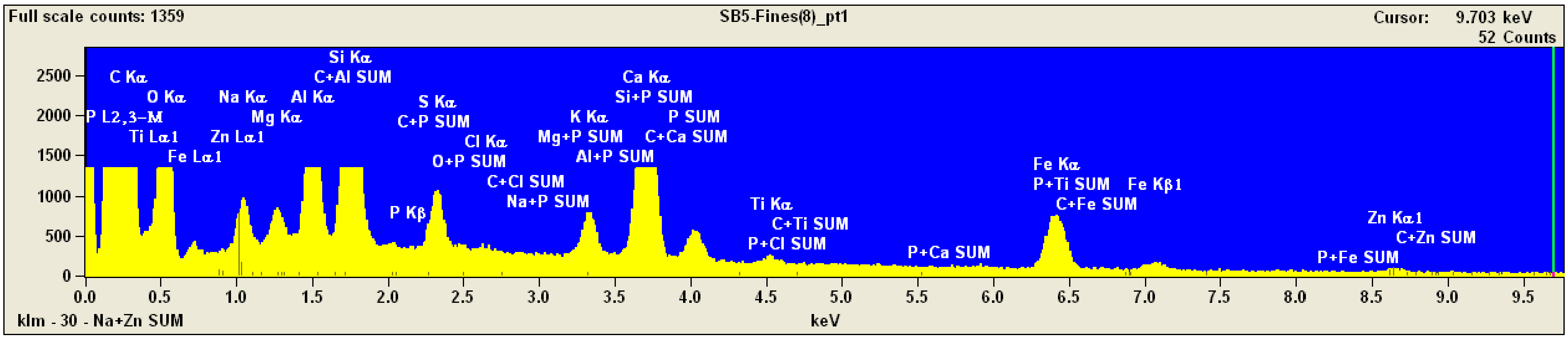
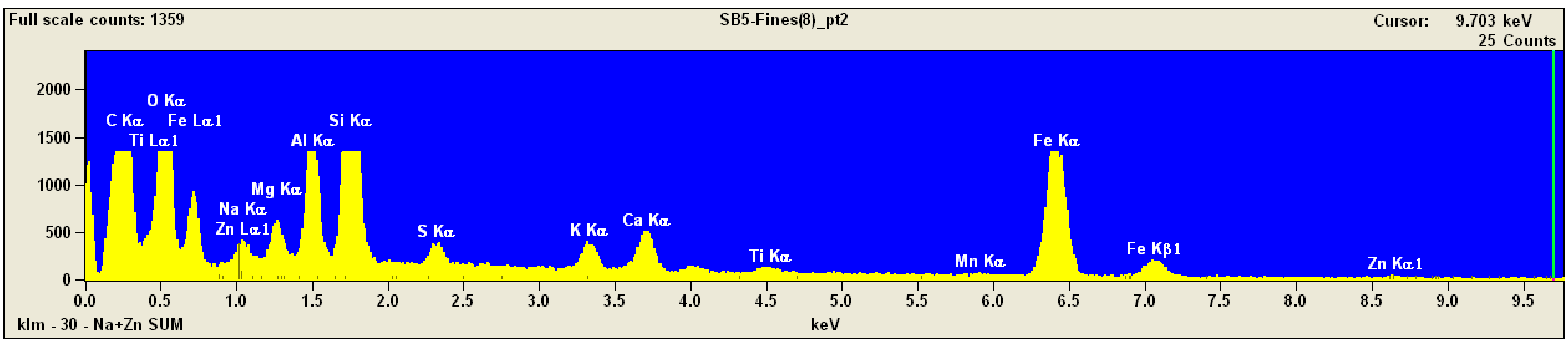


Image Name: SB5-Fines(8)

Accelerating Voltage: 20.0 kV

Magnification: 3688





Project: 05-13-2015

SB5-Fines(8)

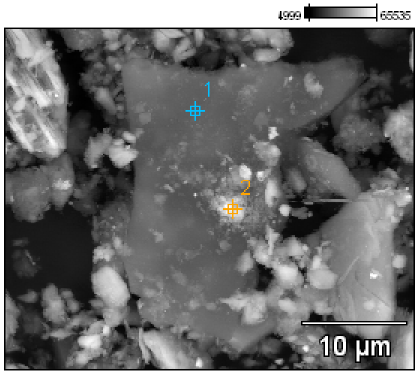


Image Name: SB5-Fines(8)

Accelerating Voltage: 20.0 kV

Magnification: 3688

Weight %

	C	O	Na	Mg	Al	Si	P	S	Cl	K	Ca	Ti	Mn	Fe	Zn
SB5-Fines(8)_pt1	66.91	17.75	1.11	0.34	1.69	4.03	0.04	0.65	0.06	0.53	3.97	0.17		2.38	0.36
SB5-Fines(8)_pt2	43.14	33.42	1.16	0.75	2.50	6.34		0.48		0.65	1.12	0.21	0.15	9.75	0.34

	O	Na	Mg	Al	Si	P	S	Cl	K	Ca	Ti	Mn	Fe	Zn
SB5-Fines(8)_pt1	49.81	3.98	1.16	5.88	14.71	0.17	2.35	0.20	1.64	11.94	0.51		6.67	0.98
SB5-Fines(8)_pt2	45.50	2.77	1.92	6.38	16.42		1.26		1.47	2.50	0.46	0.31	20.32	0.69

Project: 05-13-2015

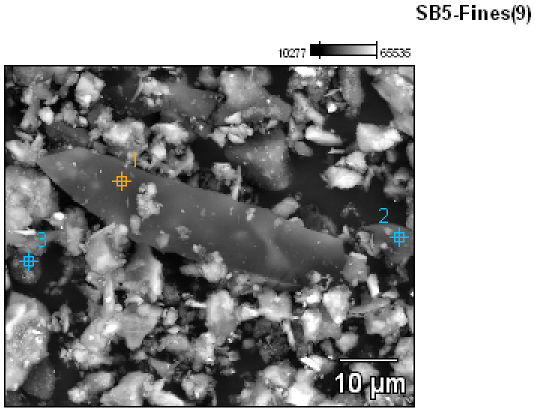
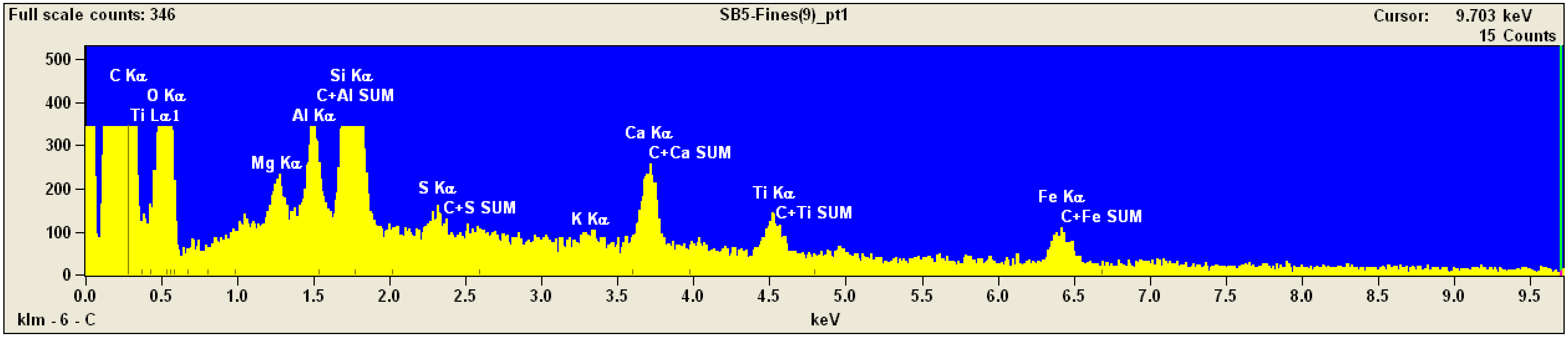
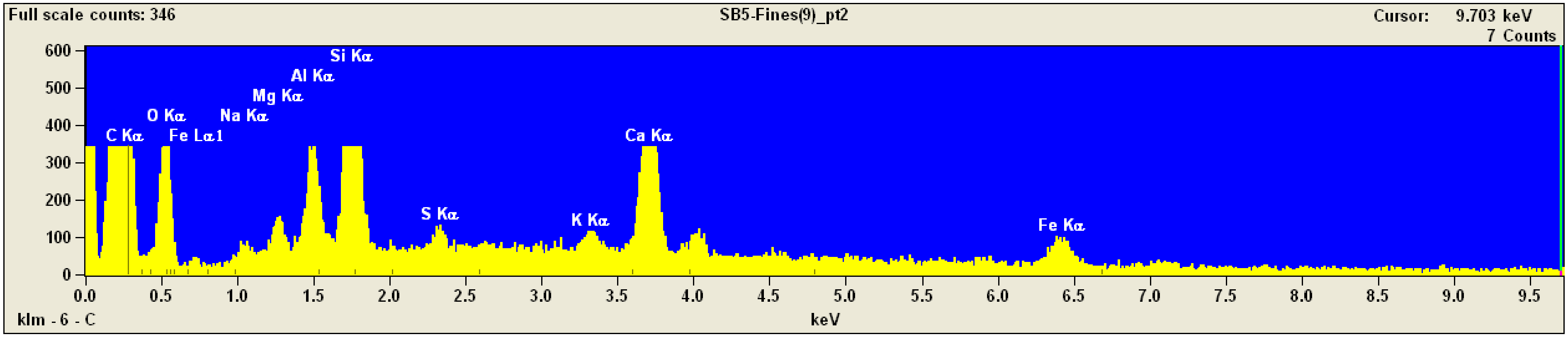


Image Name: SB5-Fines(9)

Accelerating Voltage: 20.0 kV

Magnification: 2011





Project: 05-13-2015

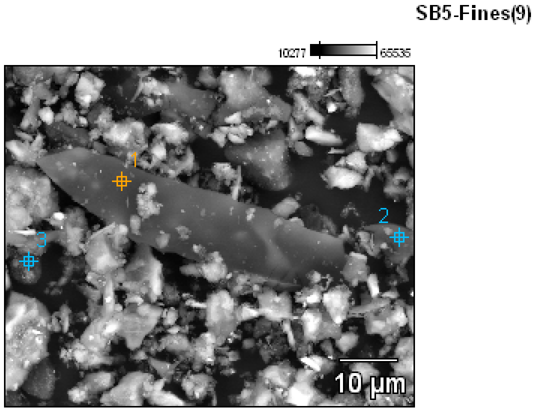
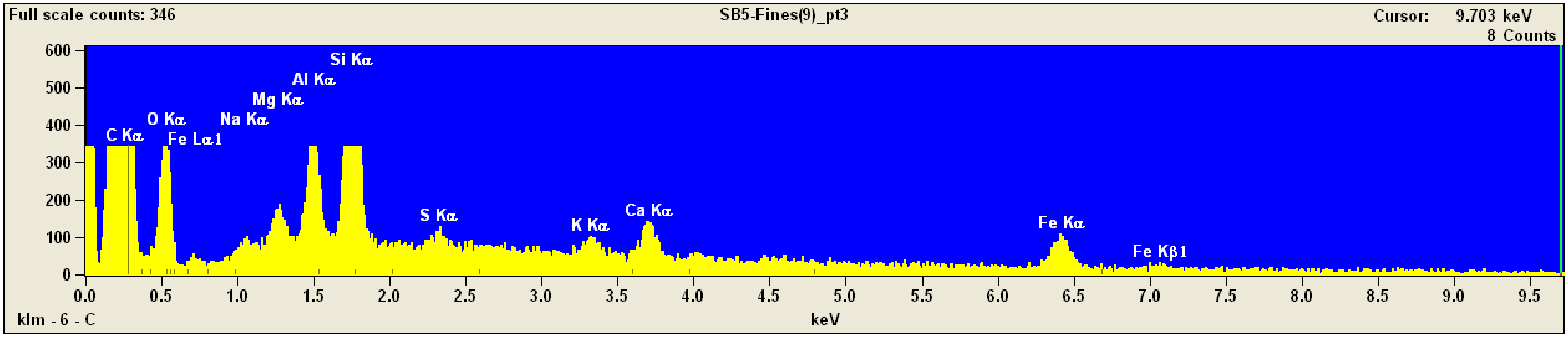


Image Name: SB5-Fines(9)

Accelerating Voltage: 20.0 kV

Magnification: 2011



Project: 05-13-2015

SB5-Fines(9)

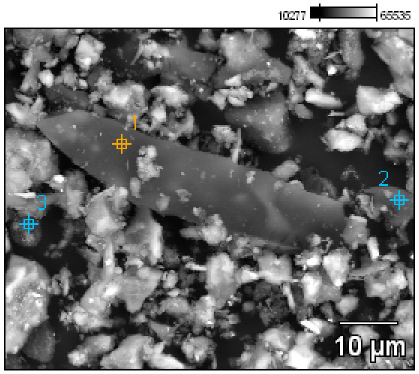


Image Name: SB5-Fines(9)

Accelerating Voltage: 20.0 kV

Magnification: 2011

Weight %

	C	O	Na	Mg	Al	Si	S	K	Ca	Ti	Fe
SB5-Fines(9)_pt1	69.16	22.98		0.32	0.60	4.16	0.20	0.11	0.85	0.65	0.96
SB5-Fines(9)_pt2	61.16	22.36	0.68	0.65	1.80	5.35	0.37	0.48	4.79		2.35
SB5-Fines(9)_pt3	70.04	18.83	0.51	0.64	1.82	4.20	0.32	0.39	1.03		2.21

	O	Na	Mg	Al	Si	S	K	Ca	Ti	Fe
SB5-Fines(9)_pt1	61.59		1.26	3.10	21.58	1.12	0.52	3.88	2.89	4.05
SB5-Fines(9)_pt2	46.64	2.17	2.27	6.22	18.82	1.35	1.48	14.43		6.62
SB5-Fines(9)_pt3	44.62	2.44	3.27	9.35	23.05	1.86	1.82	4.67		8.92

Project: 05-13-2015

SB5-Fines(10)

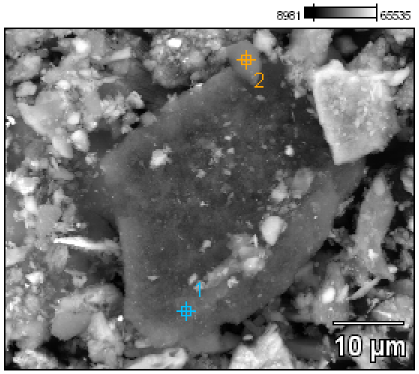
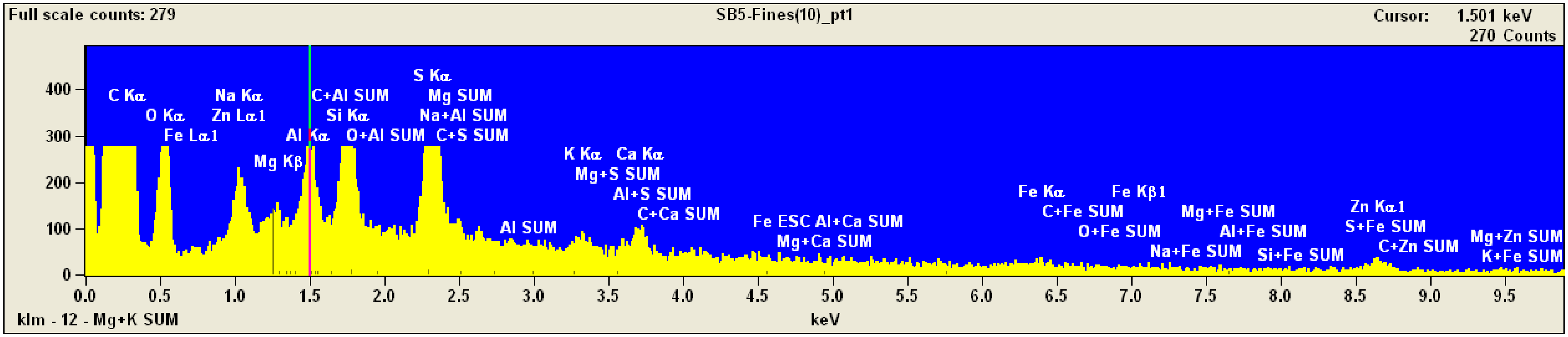
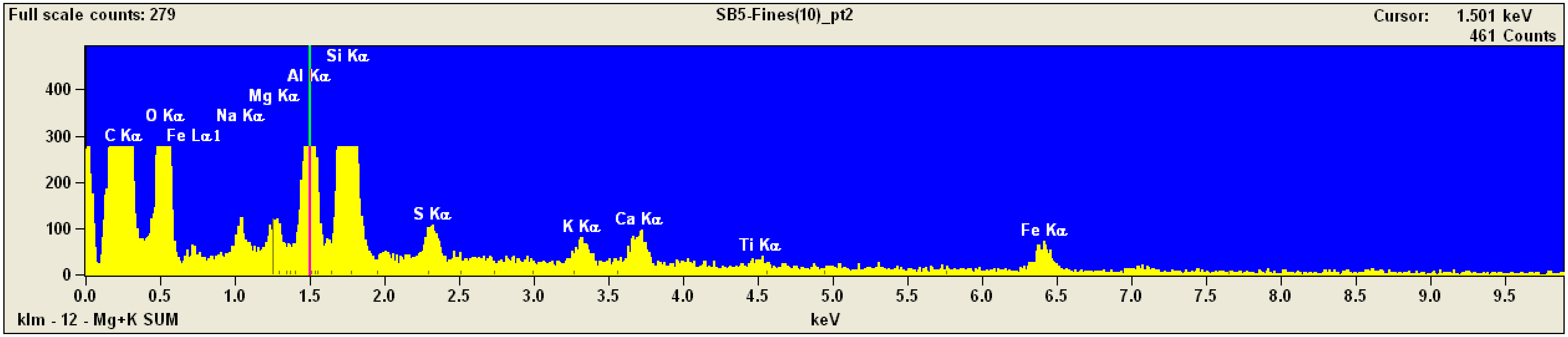


Image Name: SB5-Fines(10)

Accelerating Voltage: 20.0 kV

Magnification: 2444





Project: 05-13-2015

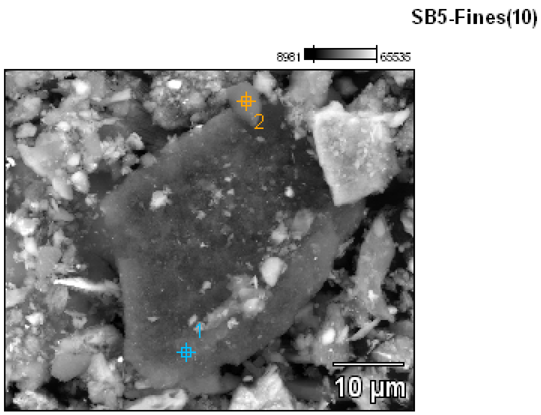


Image Name: SB5-Fines(10)

Accelerating Voltage: 20.0 kV

Magnification: 2444

Weight %

	C	O	Na	Mg	Al	Si	S	K	Ca	Ti	Fe	Zn
SB5-Fines(10)_pt1	81.60	12.62	0.60	0.16	0.67	1.06	1.70	0.18	0.32		0.15	0.94
SB5-Fines(10)_pt2	55.76	30.22	0.97	0.45	2.54	6.63	0.60	0.48	0.64	0.24	1.47	

	O	Na	Mg	Al	Si	S	K	Ca	Ti	Fe	Zn
SB5-Fines(10)_pt1	46.92	0.00	1.16	6.71	12.19	19.16	1.83	3.19		1.23	7.61
SB5-Fines(10)_pt2	53.58	3.03	1.60	8.49	22.88	2.21	1.49	1.93	0.70	4.07	

Project: 05-13-2015

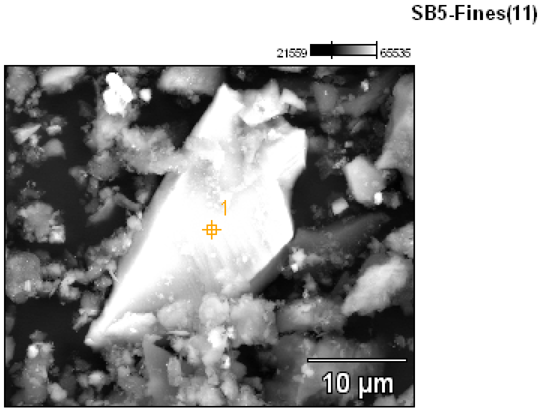
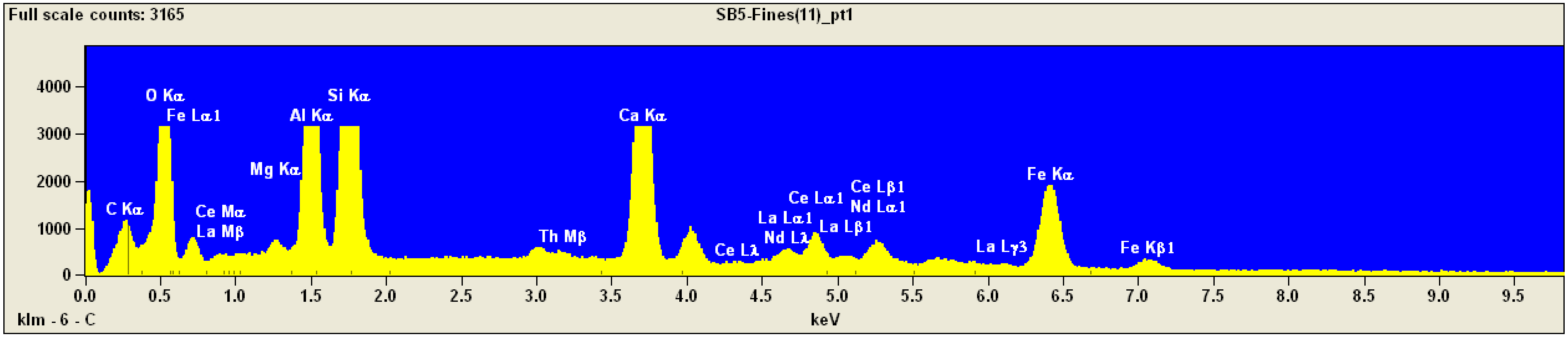


Image Name: SB5-Fines(11)

Accelerating Voltage: 20.0 kV

Magnification: 3456



Project: 05-13-2015

SB5-Fines(11)

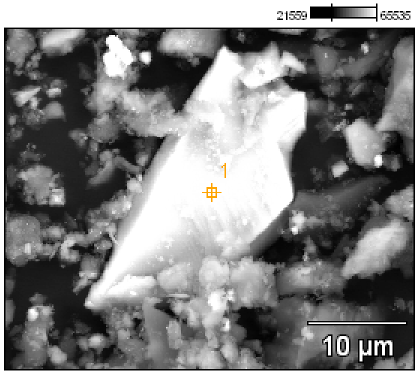


Image Name: SB5-Fines(11)

Accelerating Voltage: 20.0 kV

Magnification: 3456

Weight %

	C	O	Mg	Al	Si	Ca	Fe	La	Ce	Nd	Th
SB5-Fines(11)_pt1	20.26	33.19	0.29	8.32	13.47	9.13	7.67	1.96	3.45	1.25	1.01

	O	Mg	Al	Si	Ca	Fe	La	Ce	Nd	Th
SB5-Fines(11)_pt1	36.24	0.48	11.51	19.30	12.26	10.00	2.60	4.57	1.64	1.40

Project: 05-13-2015

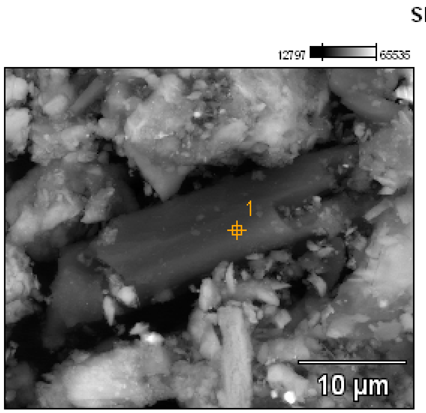
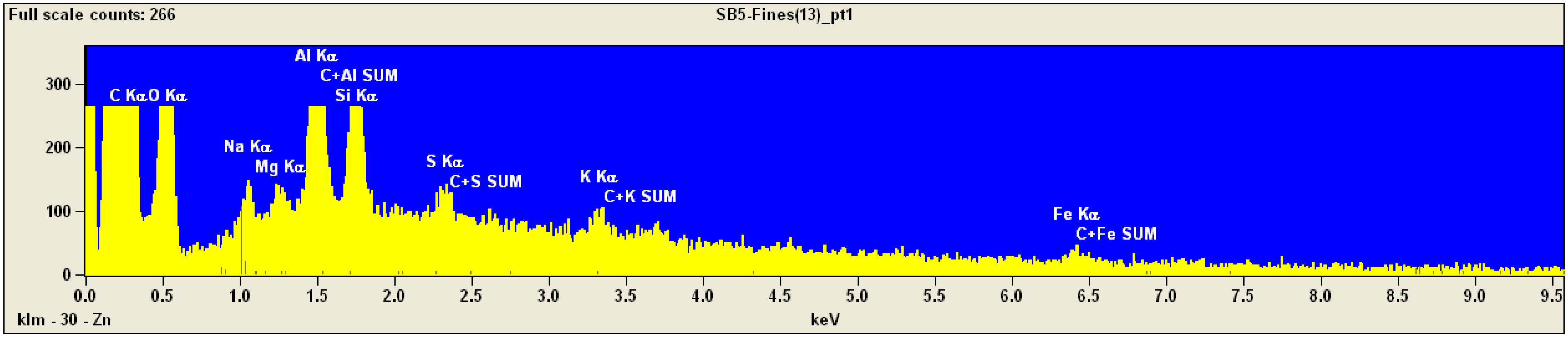


Image Name: SB5-Fines(13)

Accelerating Voltage: 20.0 kV

Magnification: 3769



Project: 05-13-2015

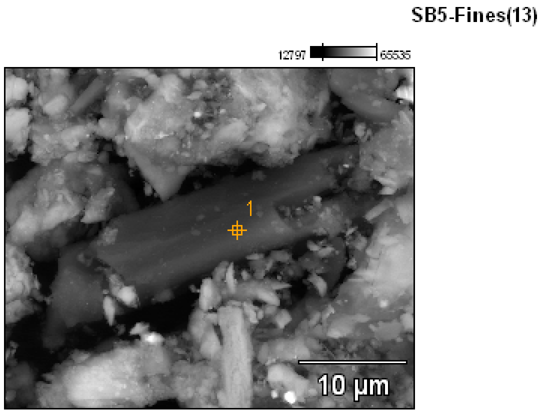


Image Name: SB5-Fines(13)

Accelerating Voltage: 20.0 kV

Magnification: 3769

Weight %

	C	O	Na	Mg	Al	Si	S	K	Fe
SB5-Fines(13)_pt1	73.11	22.35	0.64	0.18	1.78	1.05	0.23	0.24	0.42

	O	Na	Mg	Al	Si	S	K	Fe
SB5-Fines(13)_pt1	60.21	5.22	1.58	15.39	10.75	2.16	1.89	2.80

Project: 05-13-2015

SB5-Fines(14)

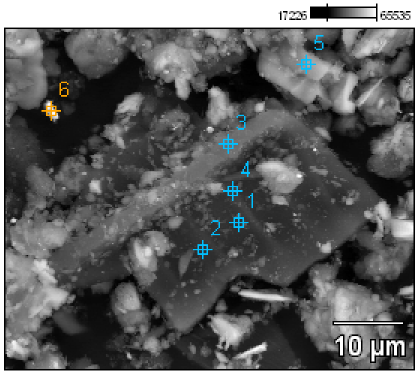
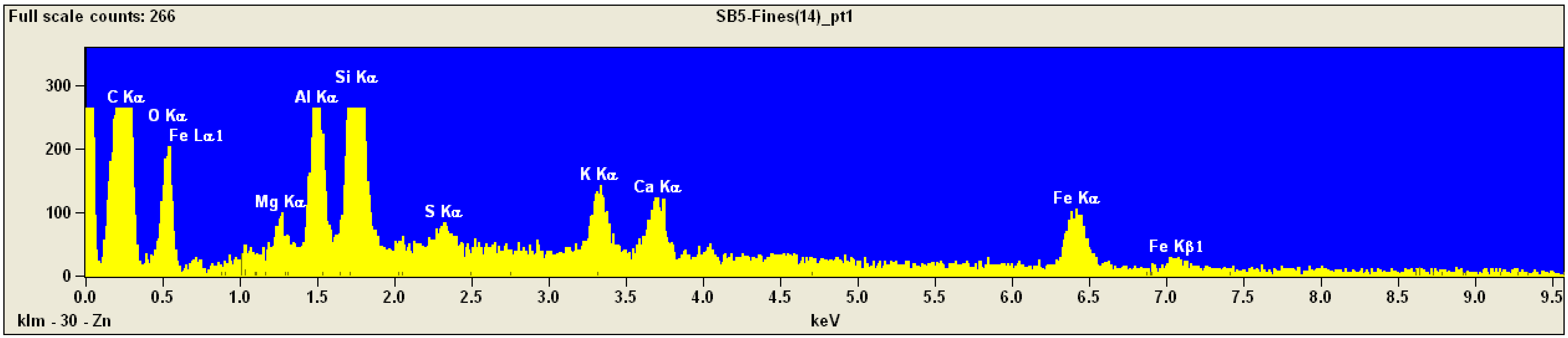
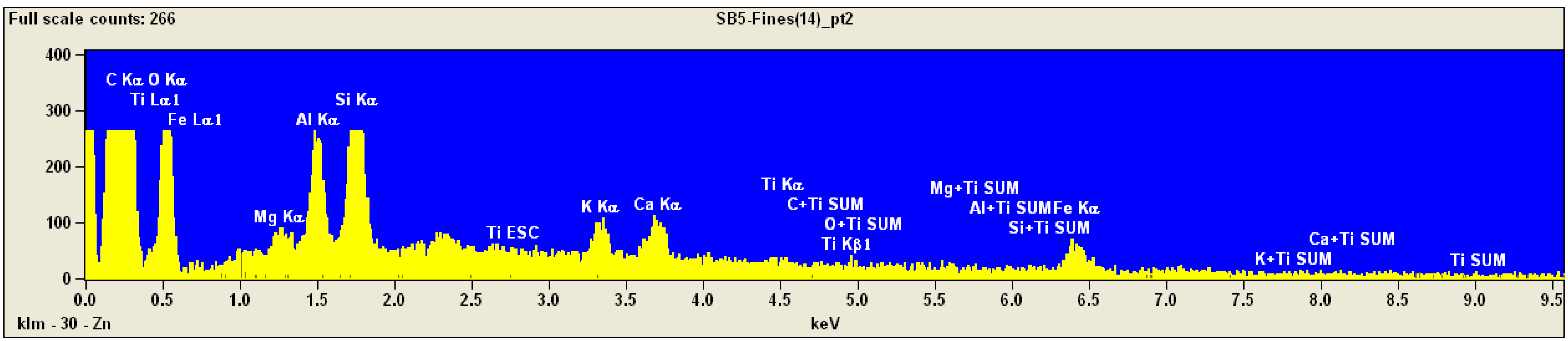


Image Name: SB5-Fines(14)

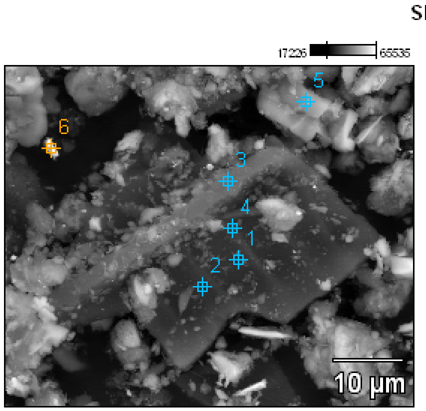
Accelerating Voltage: 20.0 kV

Magnification: 2444





Project: 05-13-2015



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Accelerating Voltage: 20.0 kV

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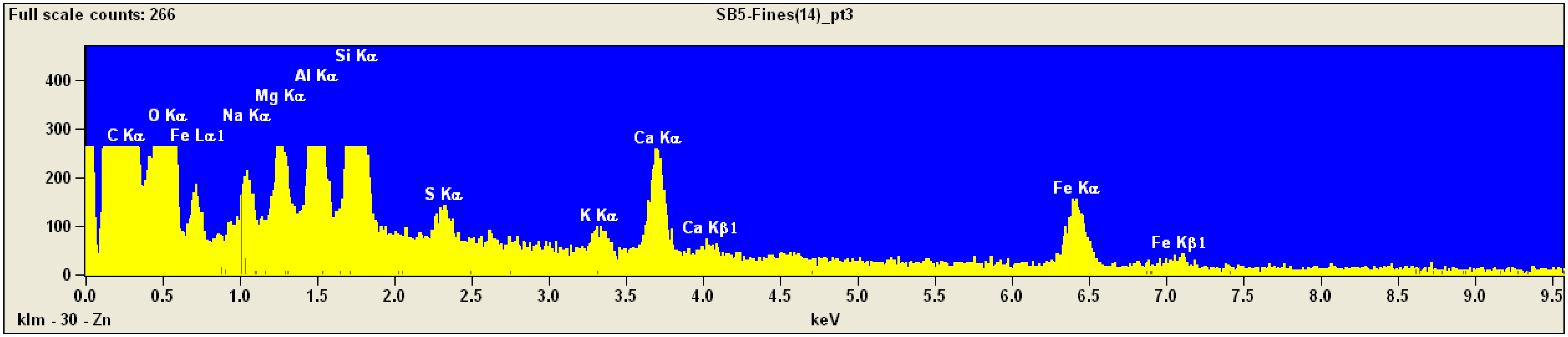

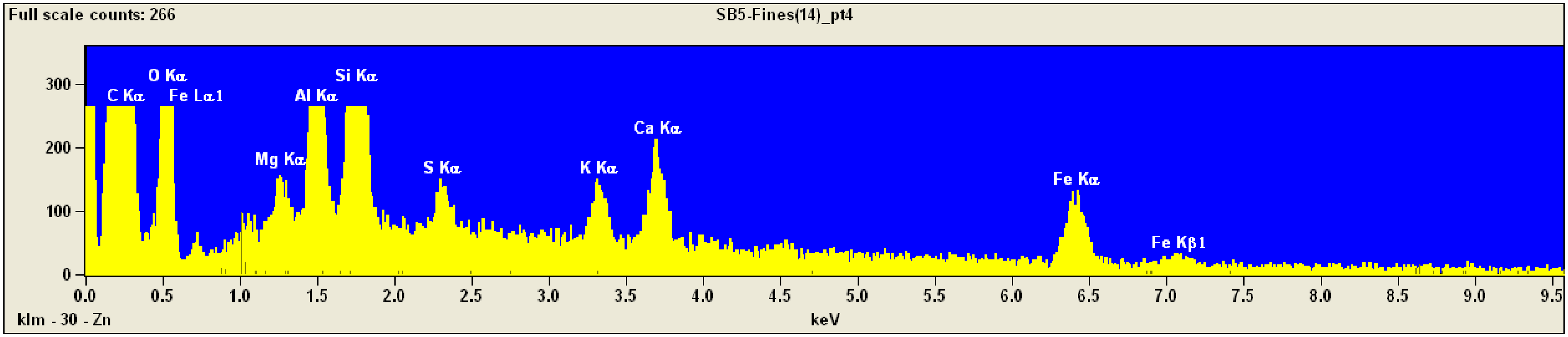

Project: 05-13-2015

SB5-Fines(14)

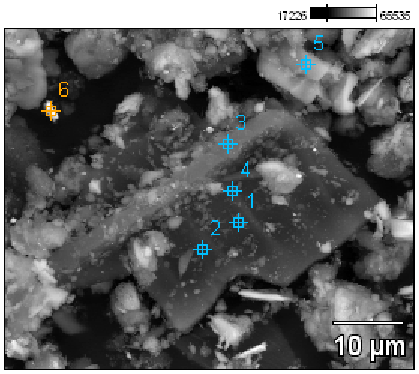

Image Name: SB5-Fines(14)

Accelerating Voltage: 20.0 kV

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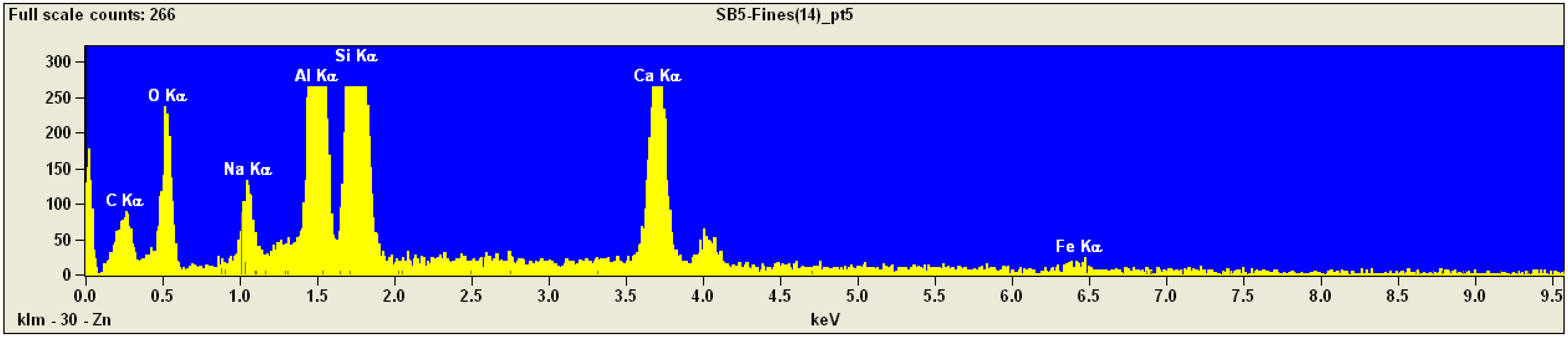
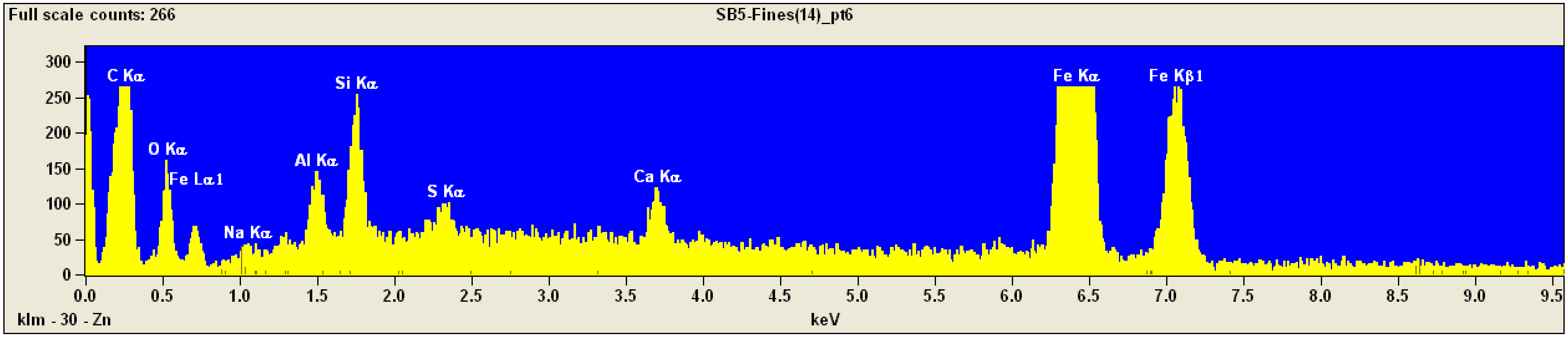




Project: 05-13-2015

SB5-Fines(14)

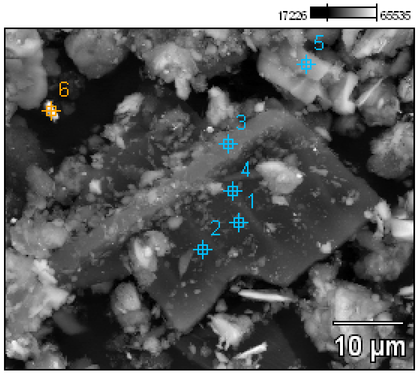


Image Name: SB5-Fines(14)

Accelerating Voltage: 20.0 kV

Magnification: 2444

Weight %

	C	O	Na	Mg	Al	Si	S	K	Ca	Ti	Fe
SB5-Fines(14)_pt1	61.44	18.73		0.62	2.98	7.75	0.48	1.62	1.83		4.56
SB5-Fines(14)_pt2	69.25	22.86		0.34	1.56	3.04		0.57	0.77	0.18	1.44
SB5-Fines(14)_pt3	60.72	31.05	0.75	0.64	1.30	2.49	0.27	0.19	0.87		1.72
SB5-Fines(14)_pt4	65.62	21.96		0.45	2.03	4.79	0.48	0.66	1.27		2.76
SB5-Fines(14)_pt5	27.99	22.84	2.99		12.57	24.44			8.49		0.68
SB5-Fines(14)_pt6	31.71	3.77	0.80		1.02	1.96	0.43		0.65		59.67

	O	Na	Mg	Al	Si	S	K	Ca	Ti	Fe
SB5-Fines(14)_pt1	36.34		2.02	9.71	26.97	1.82	5.04	5.60		12.51
SB5-Fines(14)_pt2	58.78		1.86	8.45	17.50		2.77	3.63	0.81	6.19
SB5-Fines(14)_pt3	61.38	2.96	2.96	6.65	13.25	1.42	0.81	3.80		6.78
SB5-Fines(14)_pt4	47.48		1.95	8.79	22.07	2.32	2.66	4.99		9.75
SB5-Fines(14)_pt5	28.10	4.05		17.65	36.94			12.32		0.94
SB5-Fines(14)_pt6	4.34	1.39		1.86	3.50	0.73		0.99		87.19

Project: 05-13-2015

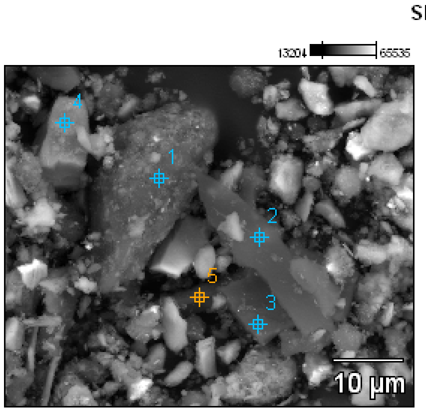
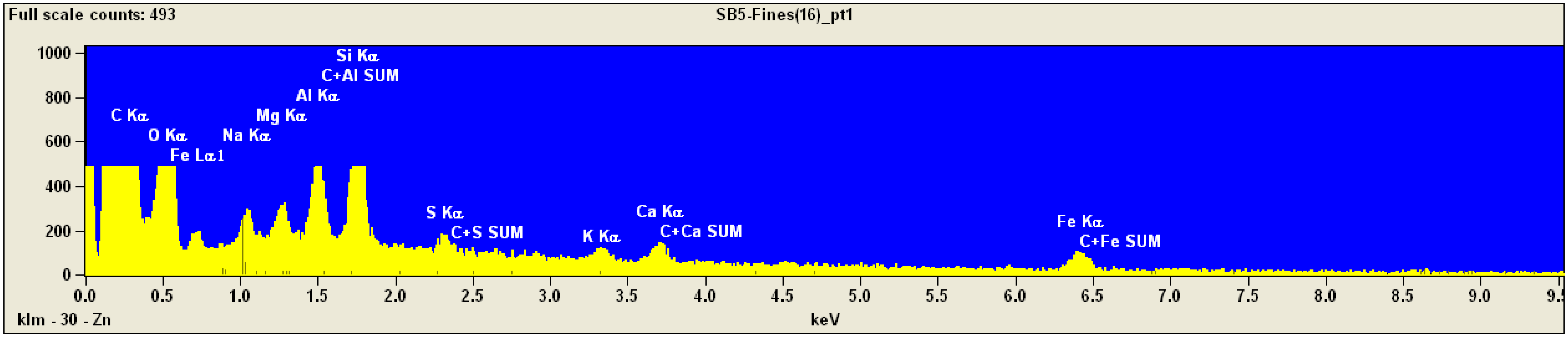
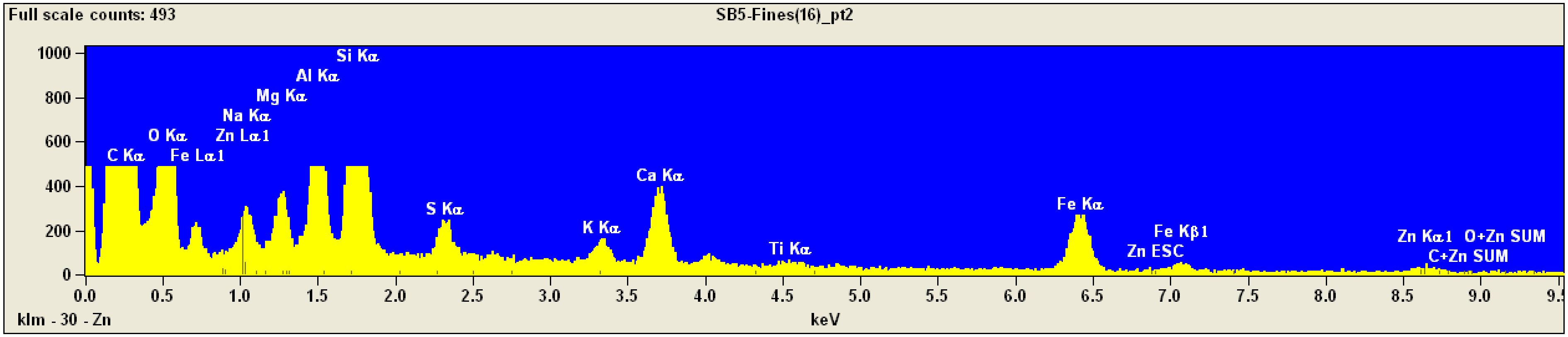


Image Name: SB5-Fines(16)

Accelerating Voltage: 20.0 kV

Magnification: 2444





Project: 05-13-2015

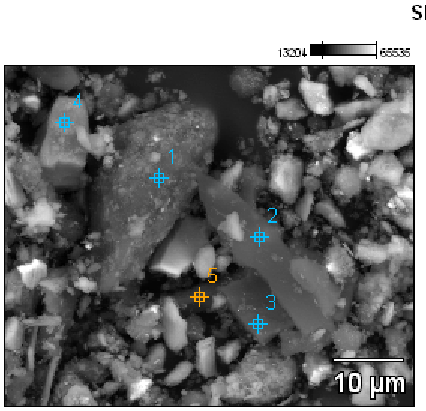
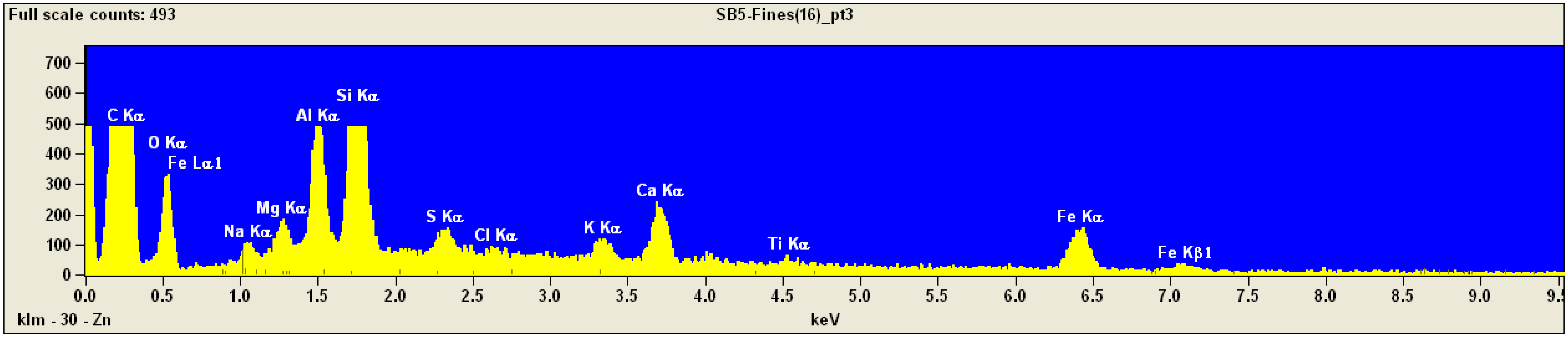
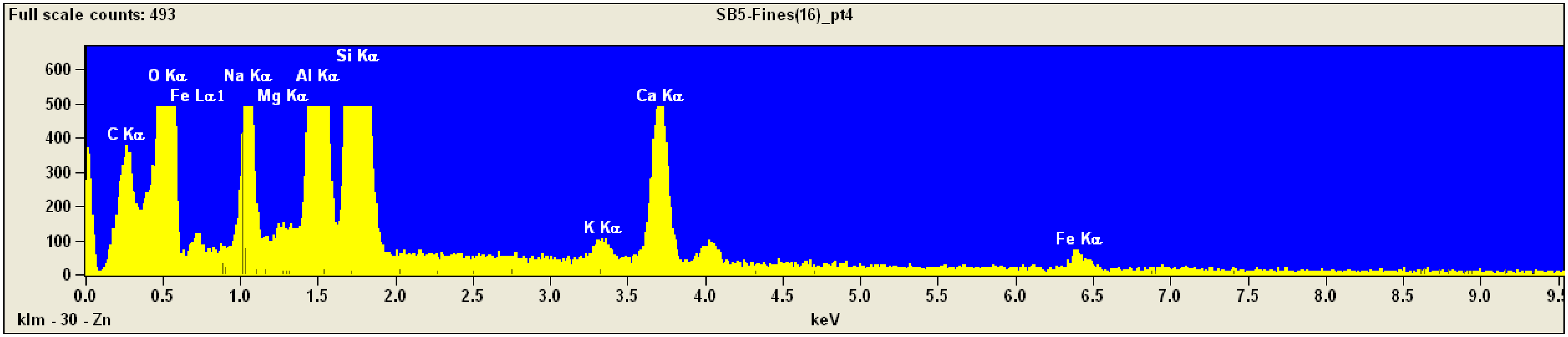


Image Name: SB5-Fines(16)

Accelerating Voltage: 20.0 kV

Magnification: 2444





Project: 05-13-2015

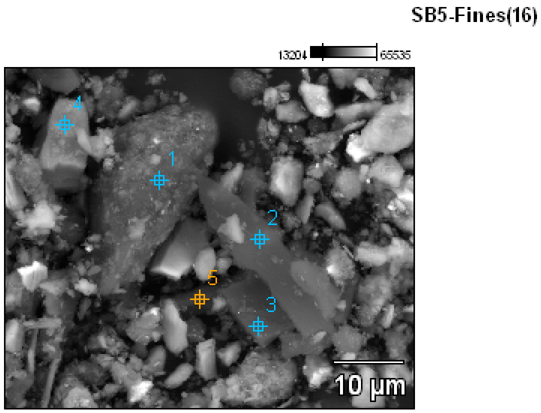
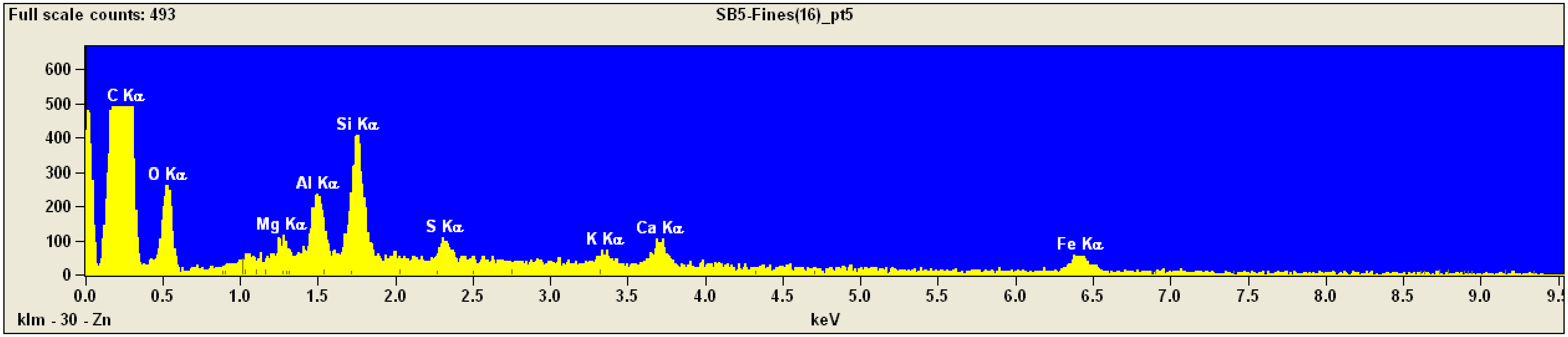


Image Name: SB5-Fines(16)

Accelerating Voltage: 20.0 kV

Magnification: 2444



Project: 05-13-2015

SB5-Fines(16)

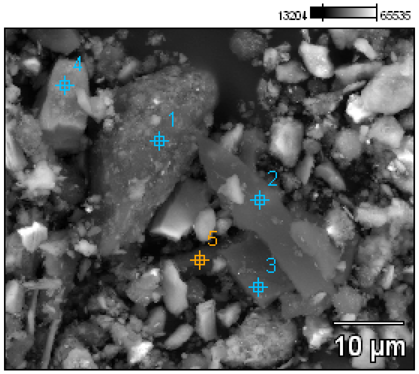


Image Name: SB5-Fines(16)

Accelerating Voltage: 20.0 kV

Magnification: 2444

Weight %

	C	O	Na	Mg	Al	Si	S	Cl	K	Ca	Ti	Fe	Zn
SB5-Fines(16)_pt1	71.73	24.27	0.61	0.33	0.76	1.07	0.15		0.14	0.25		0.69	
SB5-Fines(16)_pt2	55.27	30.70	1.12	0.70	1.86	4.95	0.48		0.33	1.34	0.11	2.62	0.51
SB5-Fines(16)_pt3	67.15	15.51	0.71	0.60	2.47	6.94	0.59	0.11	0.60	1.67	0.19	3.46	
SB5-Fines(16)_pt4	23.19	40.64	4.79	0.04	8.93	18.10			0.38	3.08		0.84	
SB5-Fines(16)_pt5	73.81	18.20		0.39	1.32	2.69	0.50		0.32	1.07		1.70	

	O	Na	Mg	Al	Si	S	Cl	K	Ca	Ti	Fe	Zn
SB5-Fines(16)_pt1	66.38	4.34	2.75	7.09	10.22	1.40		1.18	1.85		4.78	
SB5-Fines(16)_pt2	54.39	3.32	2.39	6.46	17.57	1.74		1.03	4.06	0.31	7.32	1.42
SB5-Fines(16)_pt3	35.47	1.95	2.29	9.39	28.27	2.62	0.46	2.19	5.87	0.64	10.85	
SB5-Fines(16)_pt4	45.18	6.76	0.06	13.16	28.40			0.58	4.64		1.21	
SB5-Fines(16)_pt5	51.57		2.49	8.39	18.10	3.41		1.78	5.87		8.40	

Project: 05-13-2015

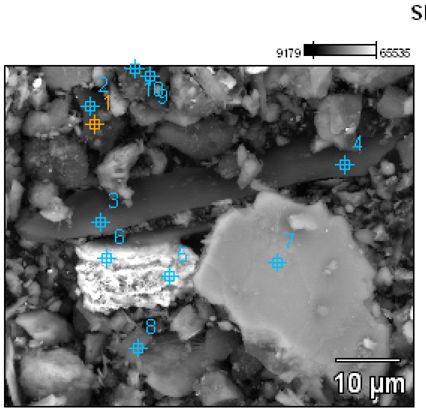
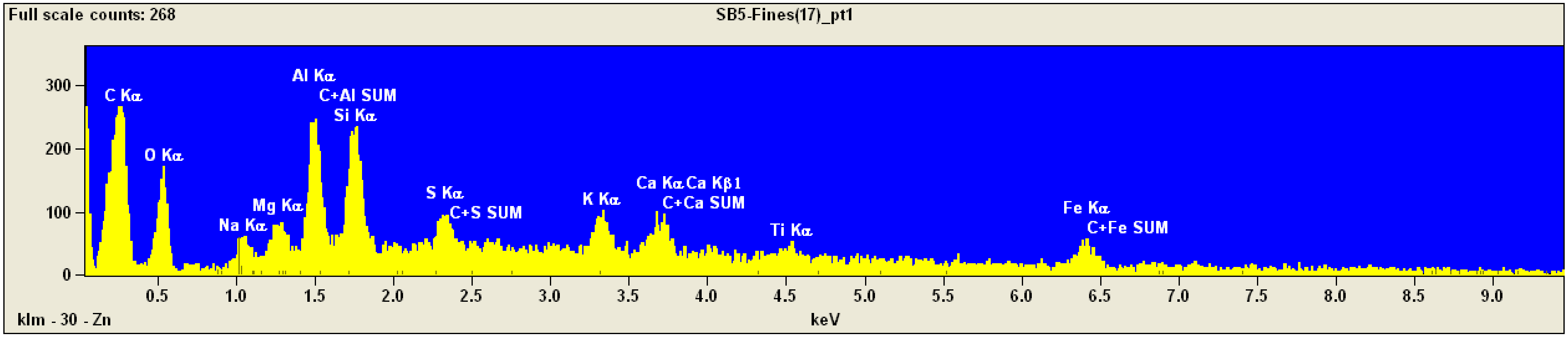
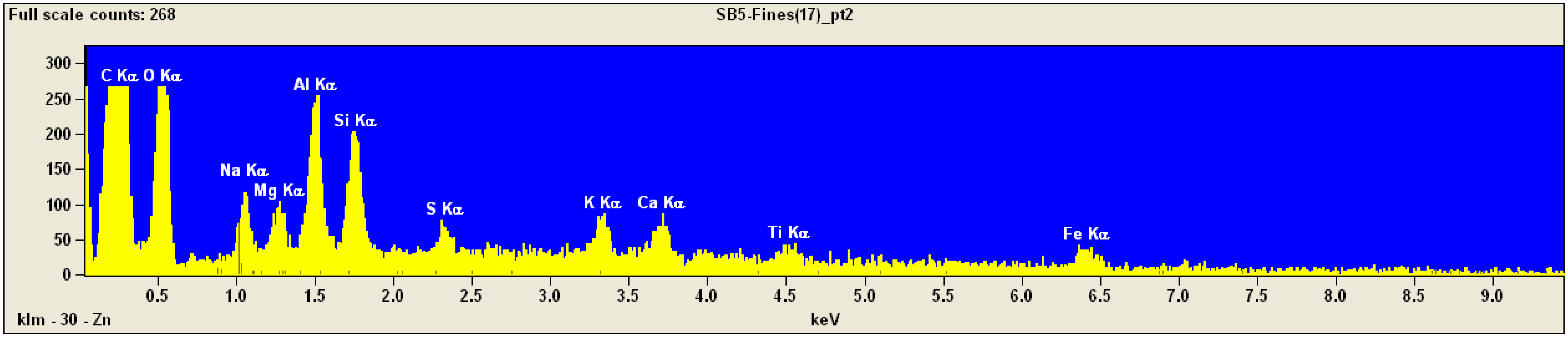


Image Name: SB5-Fines(17)

Accelerating Voltage: 20.0 kV

Magnification: 2241





Project: 05-13-2015

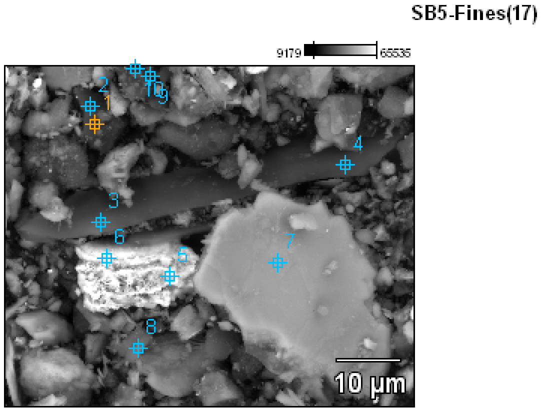
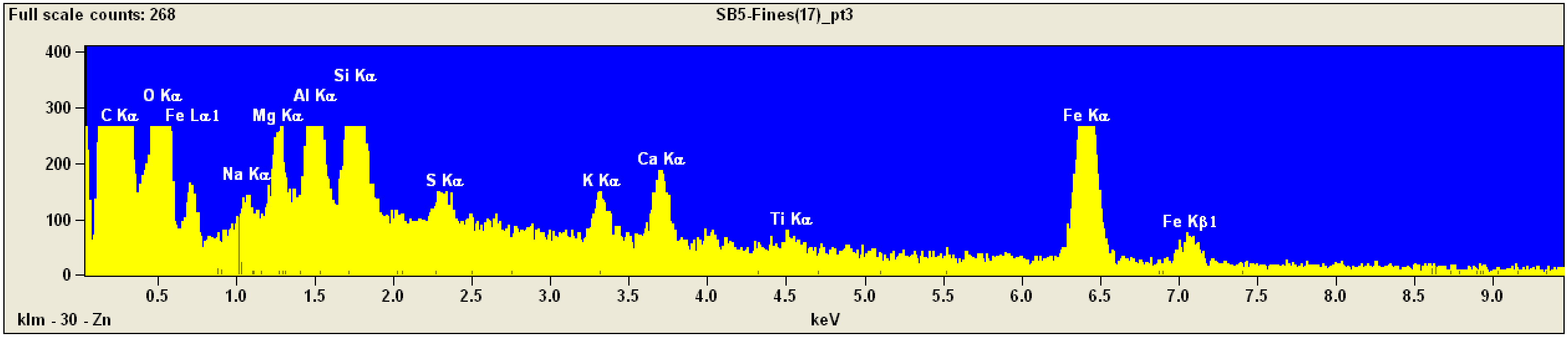
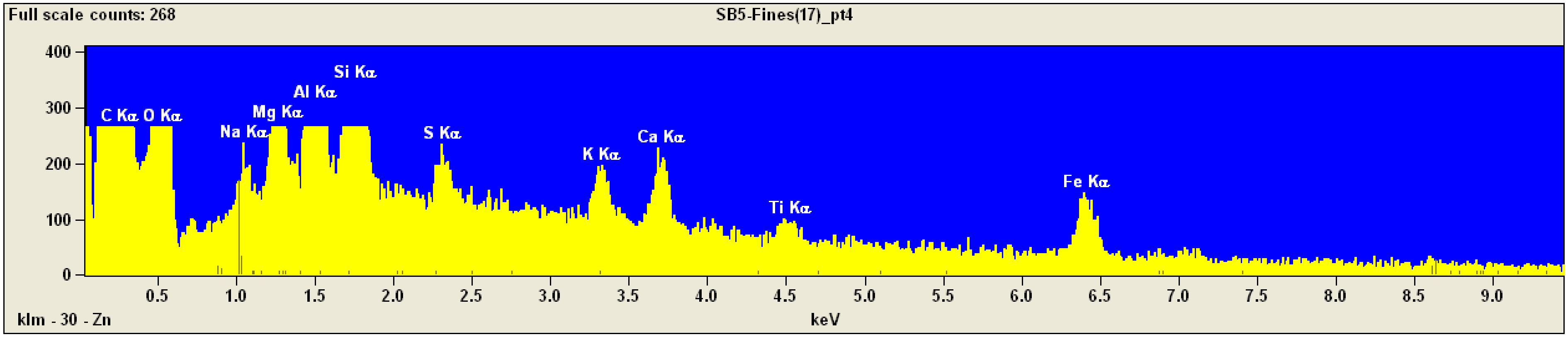


Image Name: SB5-Fines(17)

Accelerating Voltage: 20.0 kV

Magnification: 2241





Project: 05-13-2015

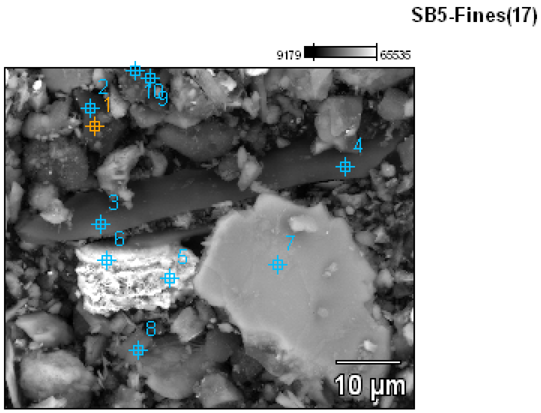
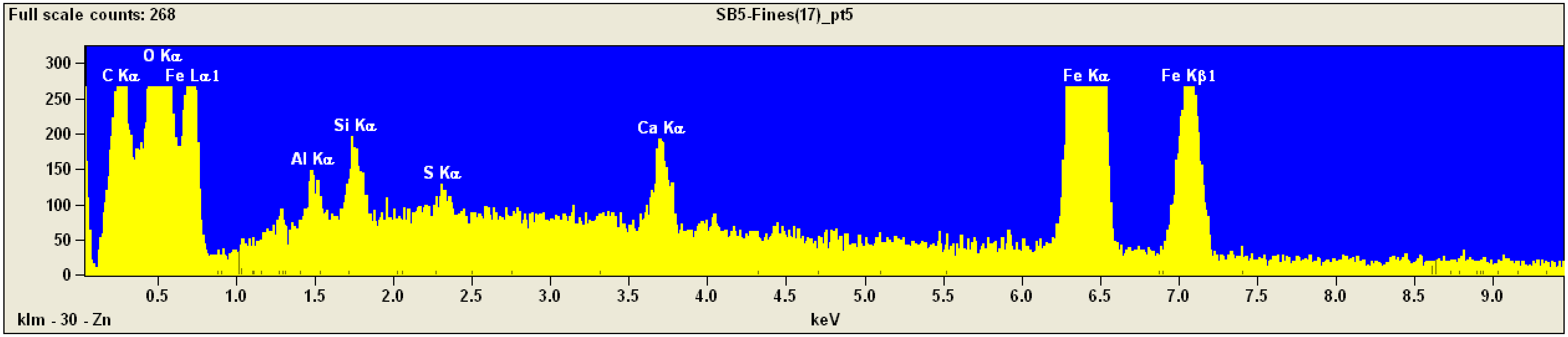
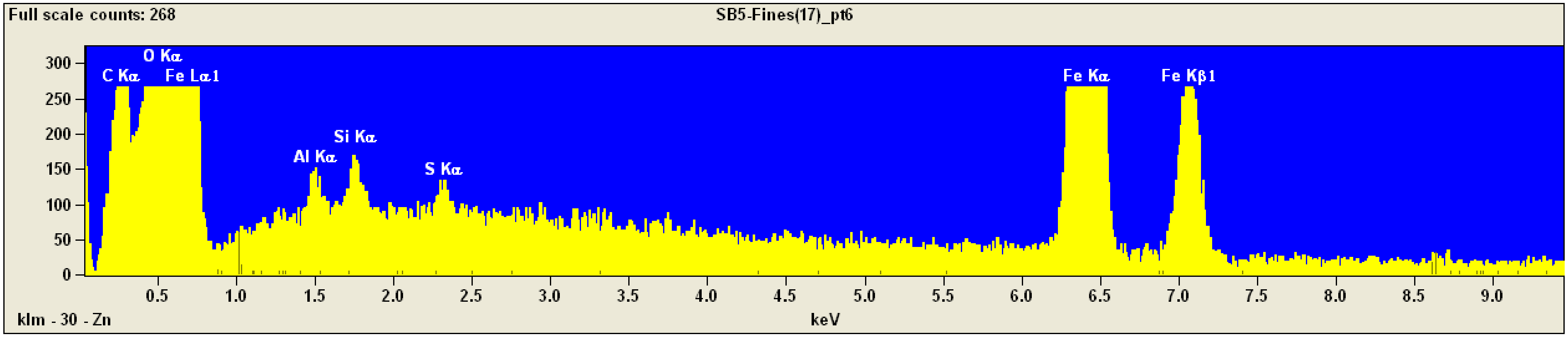


Image Name: SB5-Fines(17)

Accelerating Voltage: 20.0 kV

Magnification: 2241





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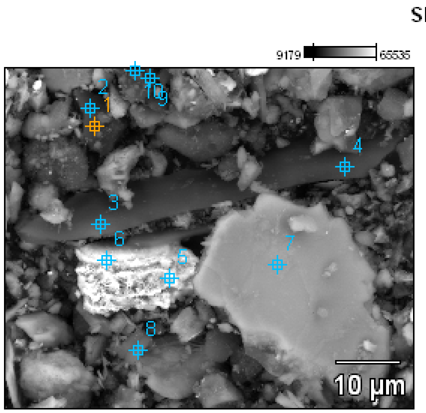
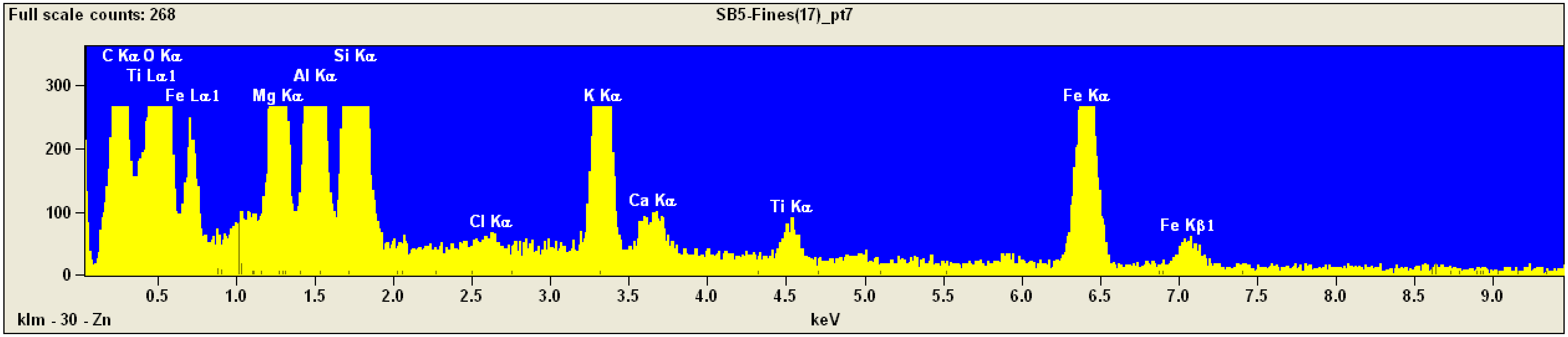
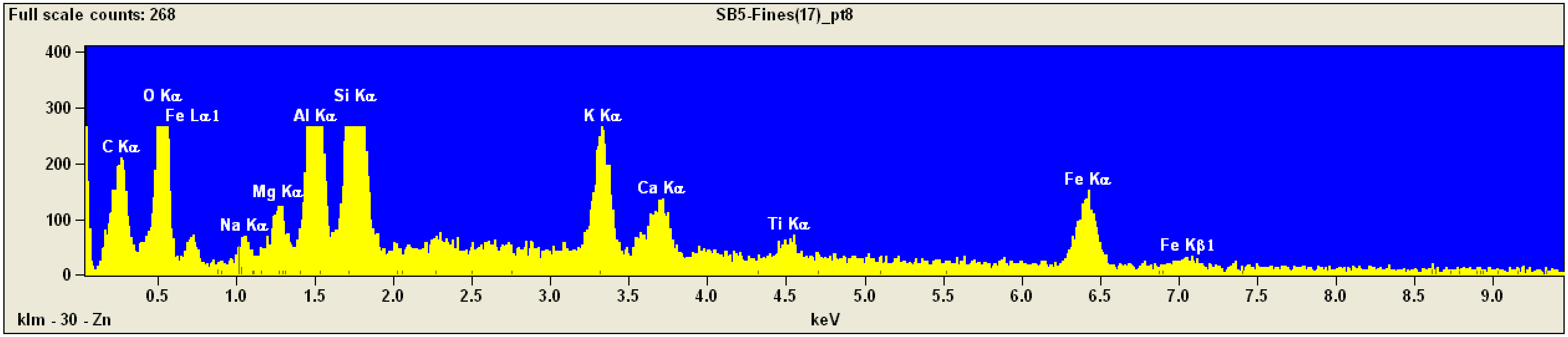


Image Name: SB5-Fines(17)

Accelerating Voltage: 20.0 kV

Magnification: 2241





Project: 05-13-2015

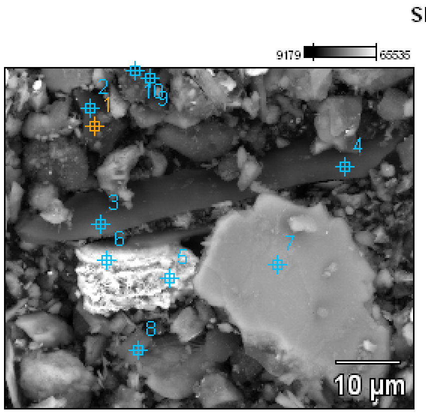
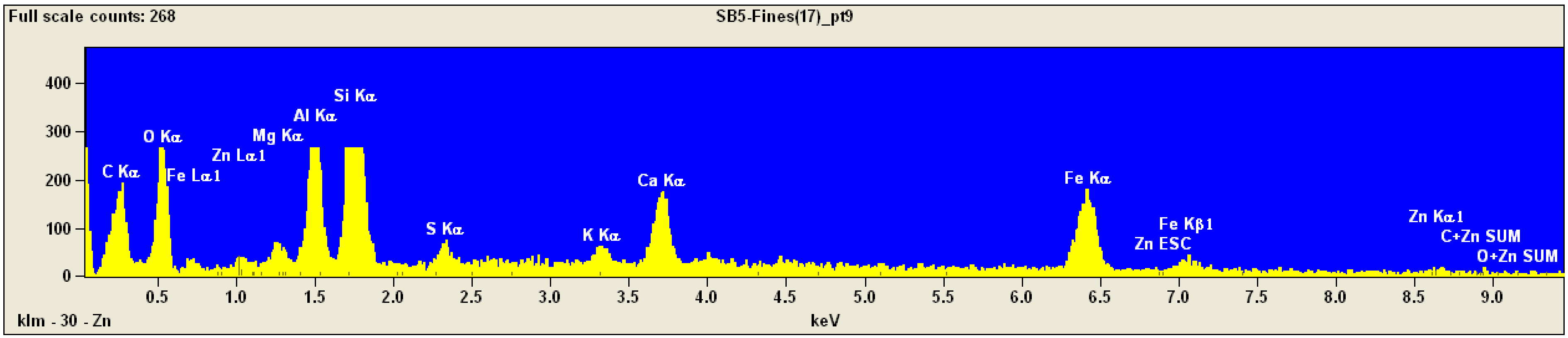
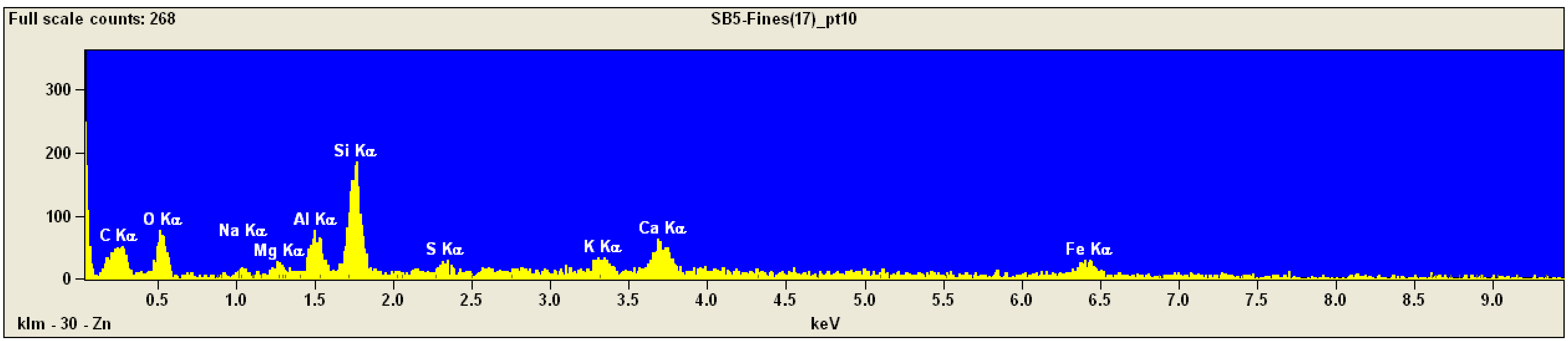


Image Name: SB5-Fines(17)

Accelerating Voltage: 20.0 kV

Magnification: 2241





SB5-Fines(17)

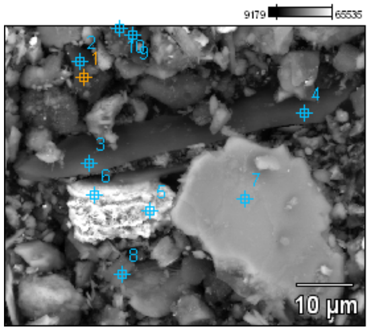


Image Name: SB5-Fines(17)

Accelerating Voltage: 20.0 kV

Magnification: 2241

Weight %

	C	O	Na	Mg	Al	Si	S	Cl	K	Ca	Ti	Fe	Zn
SB5-Fines(17)_pt1	57.71	22.54	1.75	1.20	3.93	4.00	1.38		1.67	1.88	0.82	3.12	
SB5-Fines(17)_pt2	56.39	32.07	2.10	0.85	2.46	2.04	0.47		0.63	0.85	0.60	1.55	
SB5-Fines(17)_pt3	61.59	27.74	0.39	0.56	1.41	2.12	0.25		0.35	0.59	0.15	4.85	
SB5-Fines(17)_pt4	66.04	26.79	0.43	0.70	1.61	2.19	0.24		0.31	0.41	0.22	1.05	
SB5-Fines(17)_pt5	19.91	28.35			0.57	0.76	0.22			1.10		49.10	
SB5-Fines(17)_pt6	17.79	32.75			0.48	0.51	0.26					48.22	
SB5-Fines(17)_pt7	28.87	41.66		3.97	5.05	10.22		0.08	3.03	0.38	0.51	6.23	
SB5-Fines(17)_pt8	34.95	31.38	0.86	1.04	6.99	12.92			3.45	1.66	0.84	5.90	
SB5-Fines(17)_pt9	39.50	25.55		0.82	5.16	11.84	0.96		0.80	3.58		10.42	1.39
SB5-Fines(17)_pt10	41.37	28.57	1.63	1.06	3.70	10.06	1.06		1.91	4.63		6.02	

	O	Na	Mg	Al	Si	S	Cl	K	Ca	Ti	Fe	Zn
SB5-Fines(17)_pt1	42.81	5.01	3.64	11.91	12.99	4.31		4.54	5.03	2.12	7.65	
SB5-Fines(17)_pt2	56.64	8.26	3.49	9.70	8.51	1.82		2.12	2.79	1.92	4.74	
SB5-Fines(17)_pt3	55.00	1.82	2.83	6.99	10.58	1.20		1.37	2.30	0.56	17.33	
SB5-Fines(17)_pt4	62.10	2.09	3.74	8.93	12.85	1.37		1.48	1.93	1.00	4.51	
SB5-Fines(17)_pt5	26.56			0.96	1.25	0.34			1.59		69.30	
SB5-Fines(17)_pt6	30.06			0.80	0.83	0.40					67.91	
SB5-Fines(17)_pt7	45.31		7.11	9.50	20.11		0.16	5.56	0.69	0.91	10.65	
SB5-Fines(17)_pt8	38.73	1.54	1.87	12.58	24.82			6.20	2.97	1.46	9.84	
SB5-Fines(17)_pt9	33.43		1.62	10.13	24.28	2.05		1.51	6.62		17.99	2.37
SB5-Fines(17)_pt10	40.59	3.26	2.16	7.51	20.99	2.28		3.68	8.81		10.74	

Project: 05-13-2015

SB5-Fines(18)

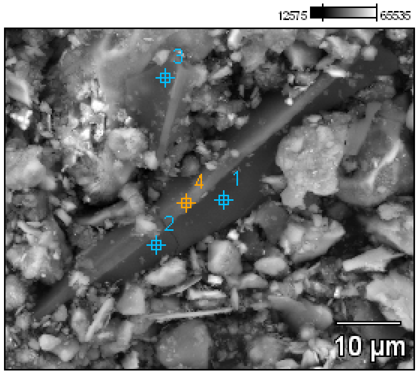
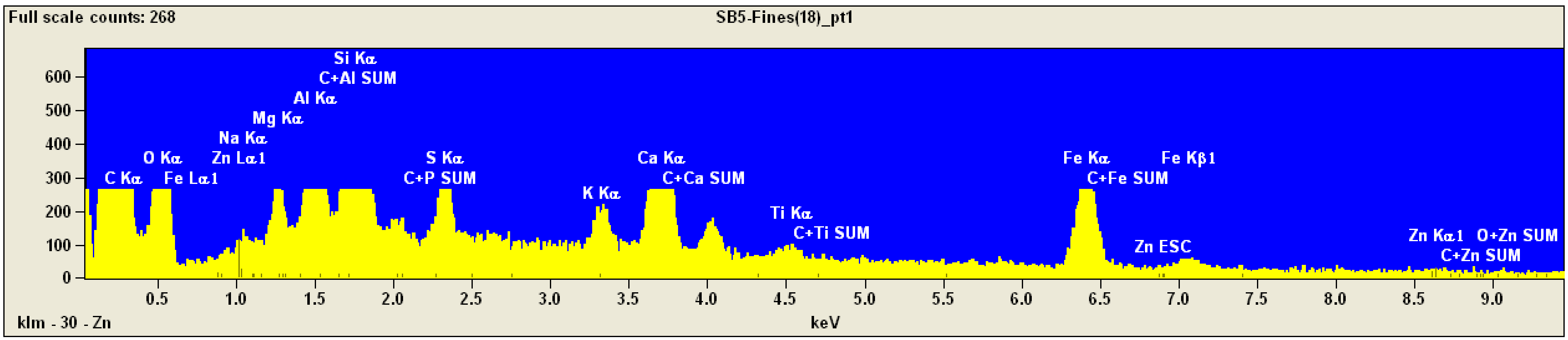
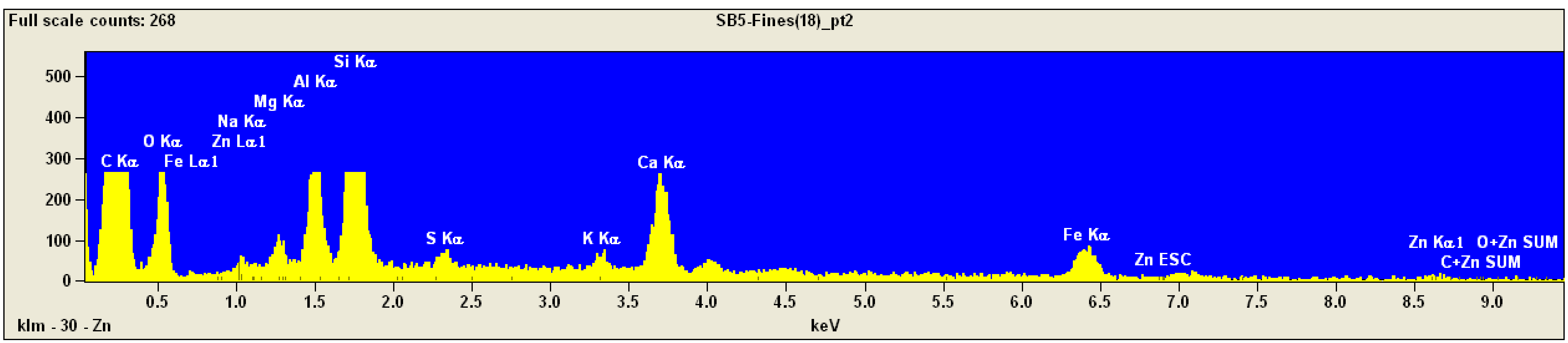


Image Name: SB5-Fines(18)

Accelerating Voltage: 20.0 kV

Magnification: 2241





Project: 05-13-2015

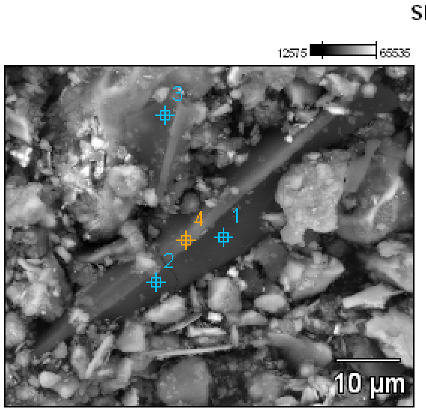
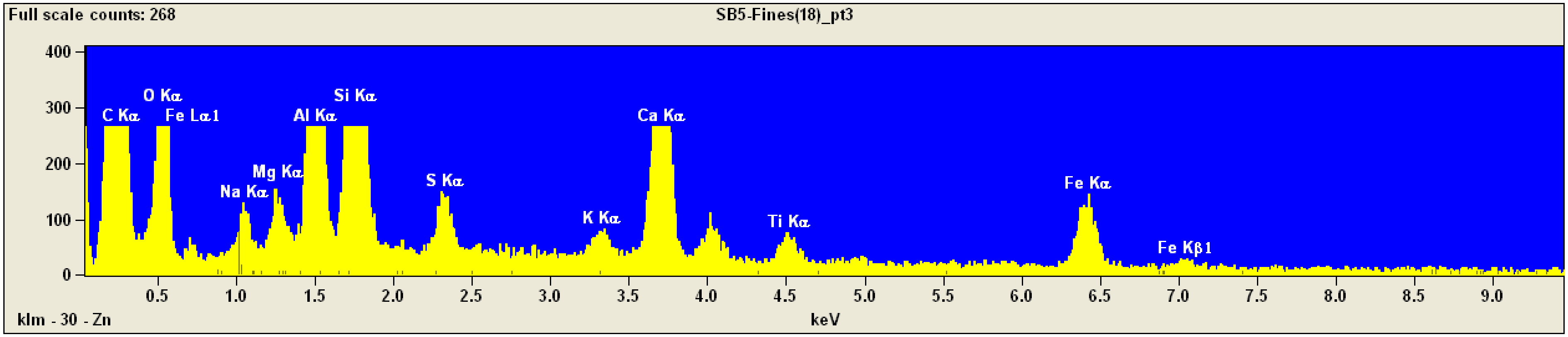
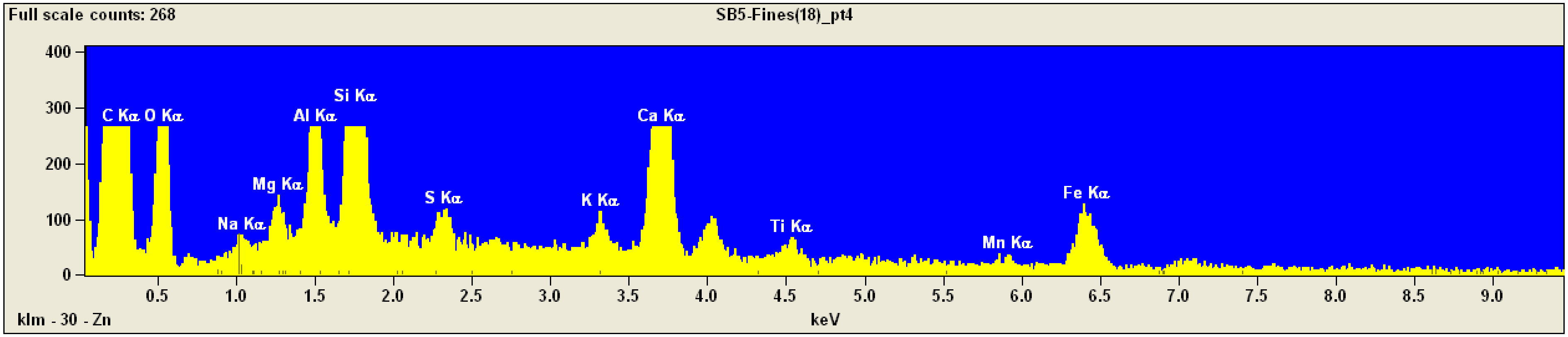


Image Name: SB5-Fines(18)

Accelerating Voltage: 20.0 kV

Magnification: 2241





Project: 05-13-2015

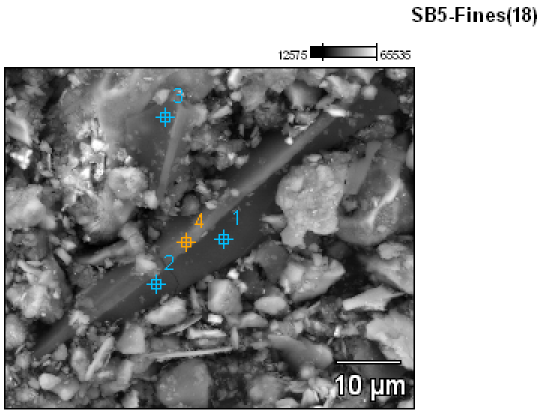


Image Name: SB5-Fines(18)

Accelerating Voltage: 20.0 kV

Magnification: 2241

Weight %

	C	O	Na	Mg	Al	Si	S	K	Ca	Ti	Mn	Fe	Zn
SB5-Fines(18)_pt1	62.67	20.51	0.00	0.39	2.23	6.33	0.68	0.39	3.10	0.21		3.23	0.25
SB5-Fines(18)_pt2	62.34	18.22	0.63	0.56	2.40	7.82	0.41	0.45	3.24			3.08	0.84
SB5-Fines(18)_pt3	50.57	24.40	1.15	0.60	4.38	9.06	0.82	0.37	4.83	0.76		3.05	
SB5-Fines(18)_pt4	57.19	24.92	0.48	0.50	1.51	5.53	0.43	0.45	5.28	0.51	0.36	2.84	

	O	Na	Mg	Al	Si	S	K	Ca	Ti	Mn	Fe	Zn
SB5-Fines(18)_pt1	44.64	0.00	1.15	8.03	22.56	2.54	1.23	9.47	0.64		9.05	0.70
SB5-Fines(18)_pt2	38.49	0.00	1.66	7.90	27.70	1.59	1.44	10.11			8.76	2.35
SB5-Fines(18)_pt3	42.47	2.64	1.41	10.15	22.17	2.10	0.82	10.45	1.61		6.18	
SB5-Fines(18)_pt4	47.19	1.16	1.22	4.98	17.94	1.43	1.29	14.85	1.45	0.96	7.54	

Project: 05-13-2015

SB5-Light(1)

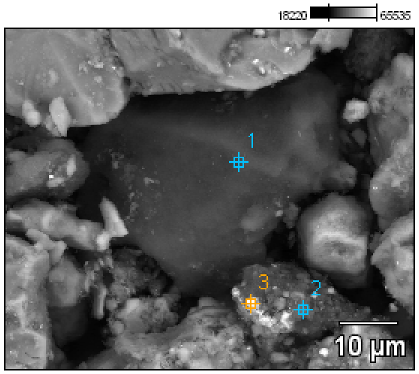
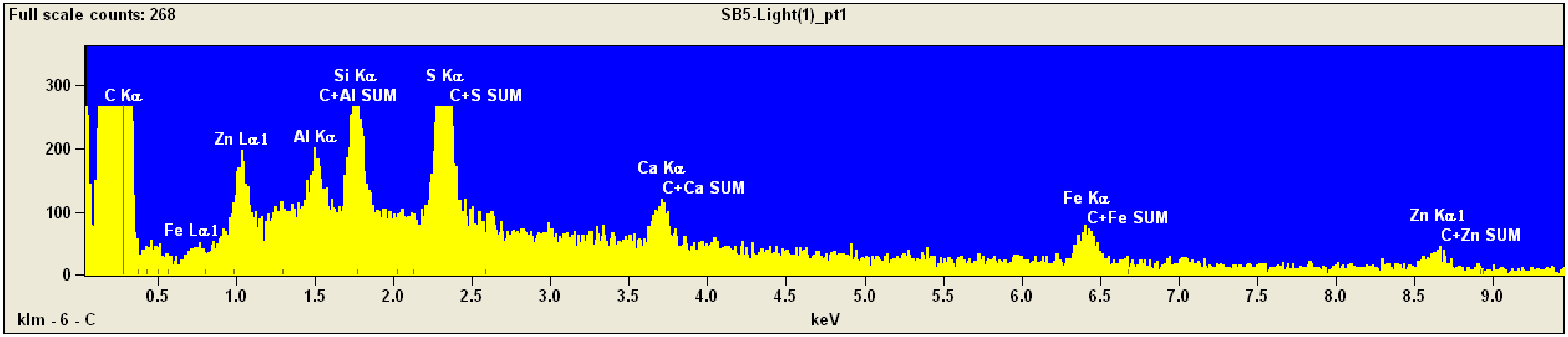
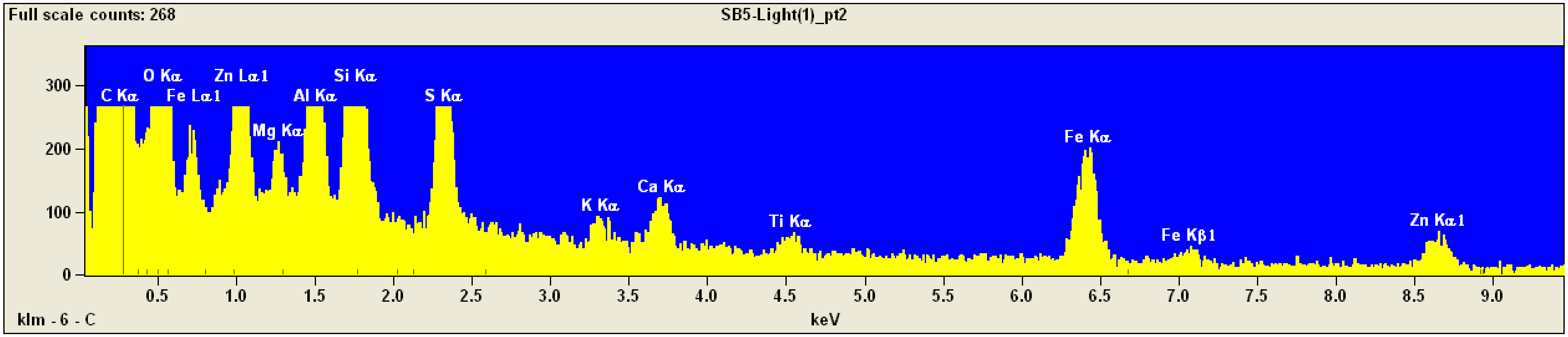


Image Name: SB5-Light(1)

Accelerating Voltage: 20.0 kV

Magnification: 2030





Project: 05-13-2015

SB5-Light(1)

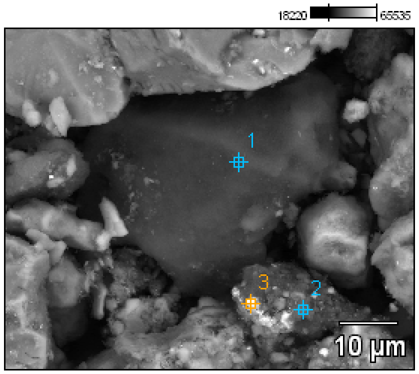
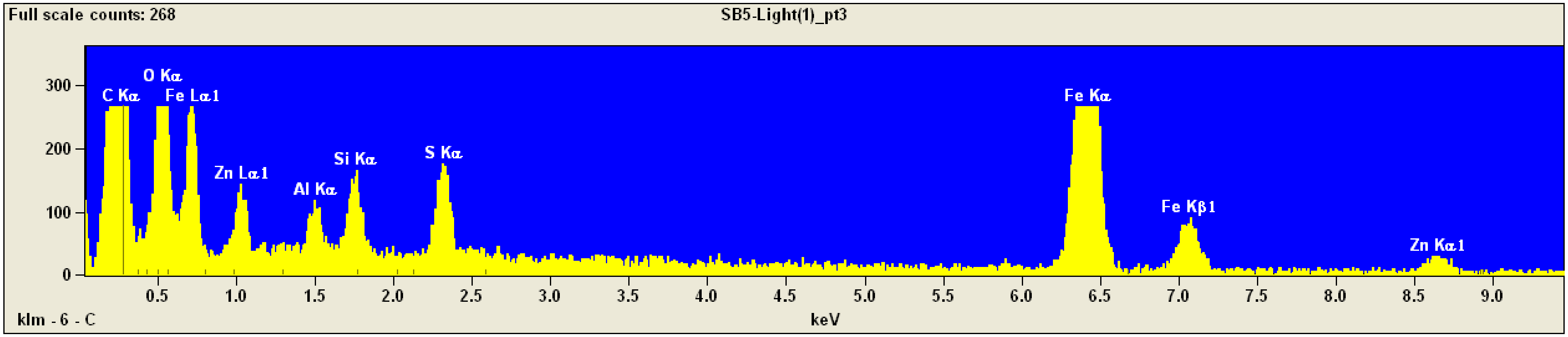


Image Name: SB5-Light(1)

Accelerating Voltage: 20.0 kV

Magnification: 2030



Project: 05-13-2015

SB5-Light(1)

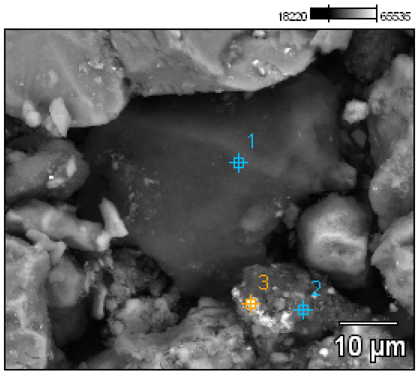


Image Name: SB5-Light(1)

Accelerating Voltage: 20.0 kV

Magnification: 2030

Weight %

	C	**O**	**Mg**	**Al**	**Si**	**S**	**K**	**Ca**	**Ti**	**Fe**	**Zn**
SB5-Light(1)_pt1	93.32			0.32	0.85	2.21		0.56		1.07	1.66
SB5-Light(1)_pt2	72.04	21.03	0.16	0.84	1.83	0.86	0.12	0.25	0.18	1.61	1.08
SB5-Light(1)_pt3	48.28	20.56		0.80	1.35	1.60				24.68	2.73

	O	**Mg**	**Al**	**Si**	**S**	**K**	**Ca**	**Ti**	**Fe**	**Zn**
SB5-Light(1)_pt1			6.05	15.68	38.52		8.40		12.60	18.75
SB5-Light(1)_pt2	54.79	1.31	6.32	13.79	6.34	0.75	1.50	0.99	8.54	5.67
SB5-Light(1)_pt3	26.99		2.61	4.25	4.55				55.36	6.24

Project: 05-13-2015

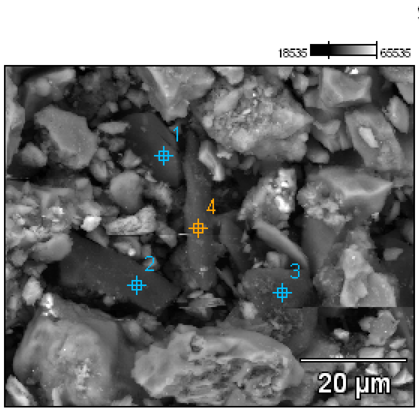
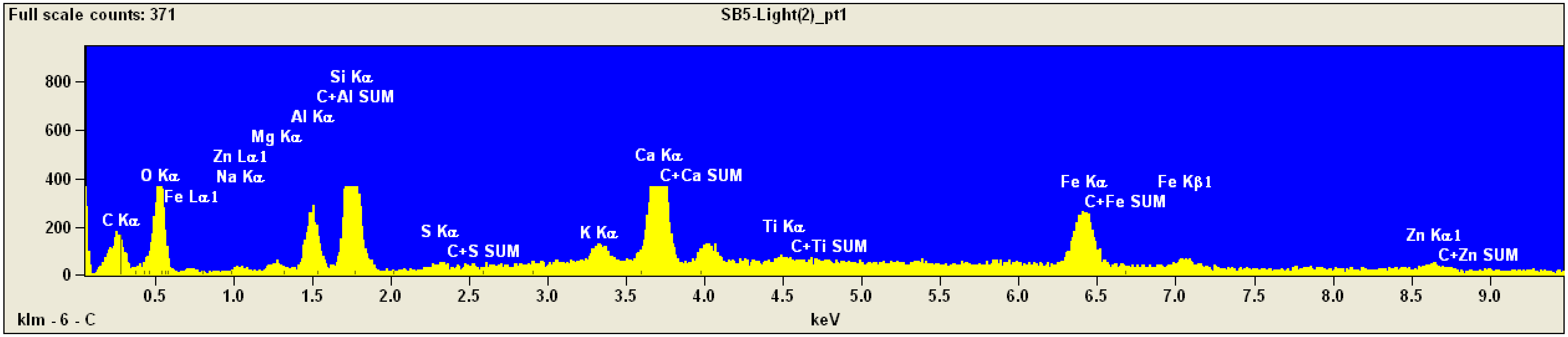
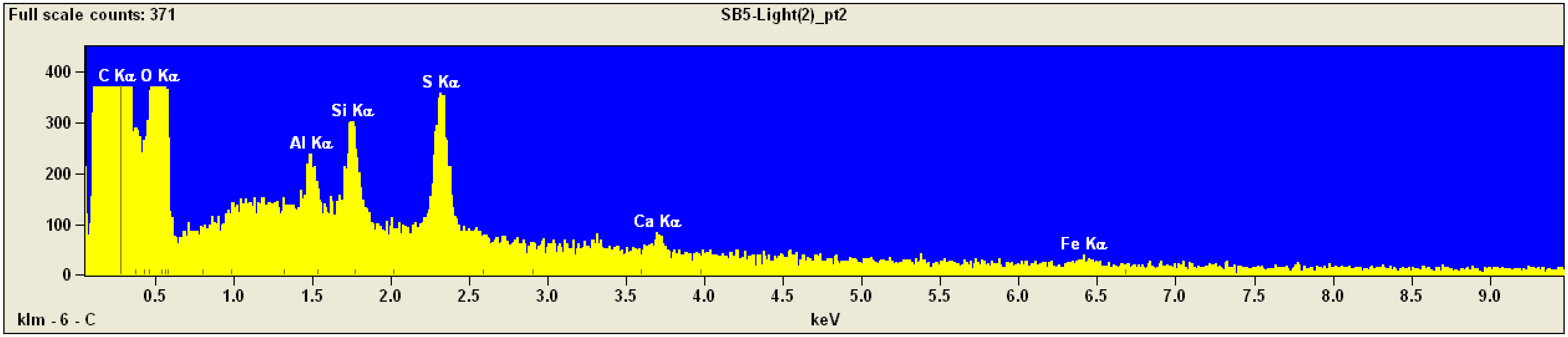


Image Name: SB5-Light(2)

Accelerating Voltage: 20.0 kV

Magnification: 1862





Project: 05-13-2015

SB5-Light(2)

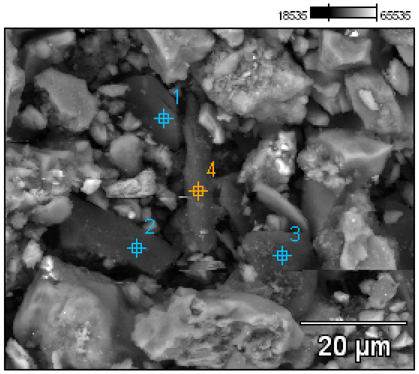
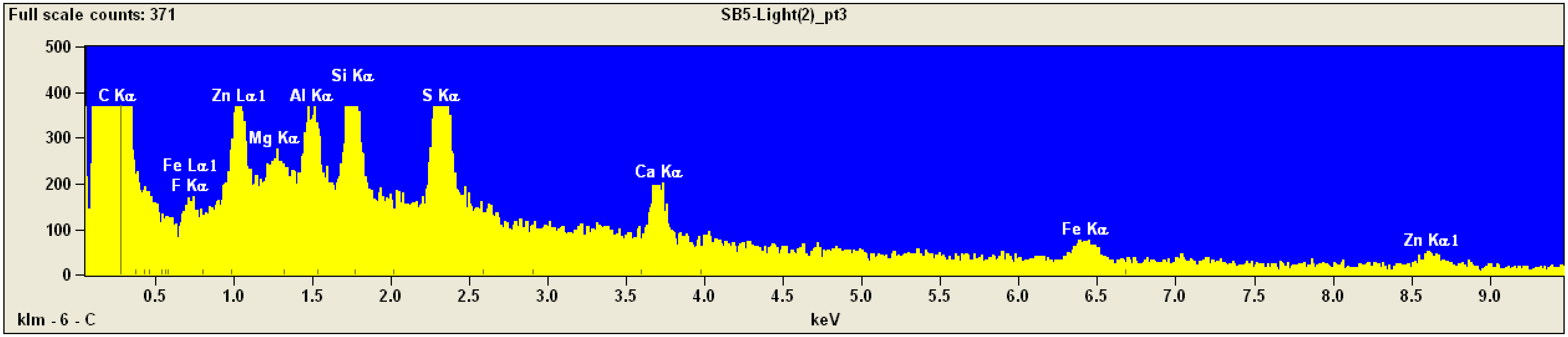
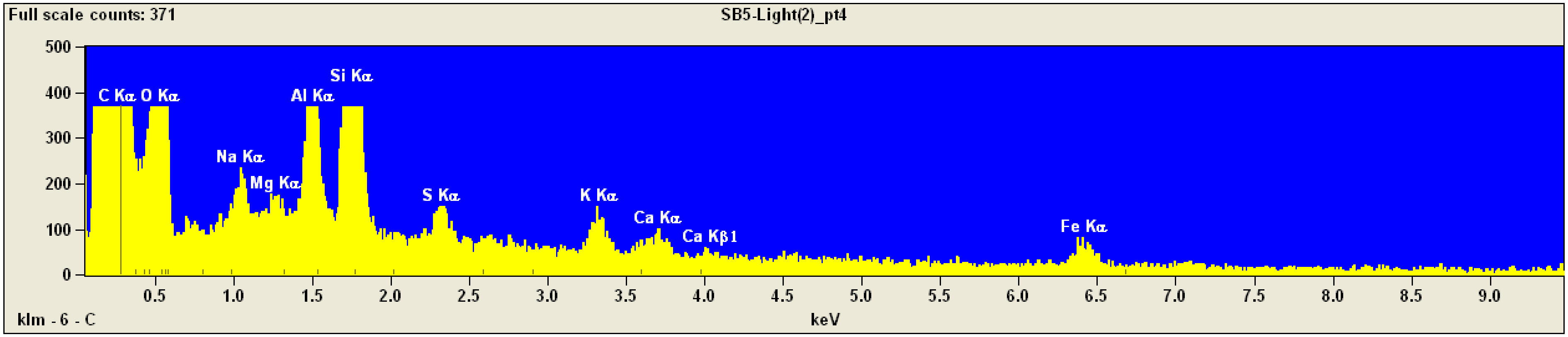


Image Name: SB5-Light(2)

Accelerating Voltage: 20.0 kV

Magnification: 1862





Project: 05-13-2015

SB5-Light(2)

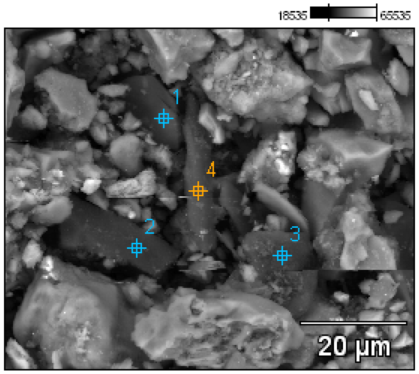


Image Name: SB5-Light(2)

Accelerating Voltage: 20.0 kV

Magnification: 1862

Weight %

	C	***O***	***F***	***Na***	***Mg***	***Al***	***Si***	***S***	***K***	***Ca***	***Ti***	***Fe***	***Zn***
SB5-Light(2)_pt1	27.99	31.44		0.73	0.55	3.37	9.02	0.35	1.03	10.65	0.58	11.16	3.14
SB5-Light(2)_pt2	77.43	20.90				0.21	0.39	0.76		0.12		0.19	
SB5-Light(2)_pt3	96.56		0.00		0.11	0.29	0.48	1.12		0.39		0.42	0.62
SB5-Light(2)_pt4	76.12	19.74		0.46	0.08	0.71	1.88	0.19	0.21	0.19		0.43	

	O	***F***	***Na***	***Mg***	***Al***	***Si***	***S***	***K***	***Ca***	***Ti***	***Fe***	***Zn***
SB5-Light(2)_pt1	37.79		1.20	0.92	5.50	14.79	0.58	1.56	16.04	0.87	16.24	4.52
SB5-Light(2)_pt2	78.27				2.99	5.42	9.94		1.39		1.99	
SB5-Light(2)_pt3		0.00		3.48	9.60	16.71	36.90		11.11		9.27	12.93
SB5-Light(2)_pt4	61.79		4.27	0.90	6.60	18.27	1.92	1.70	1.51		3.06	

Project: 05-13-2015

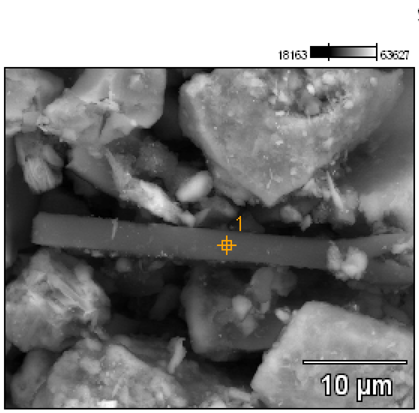
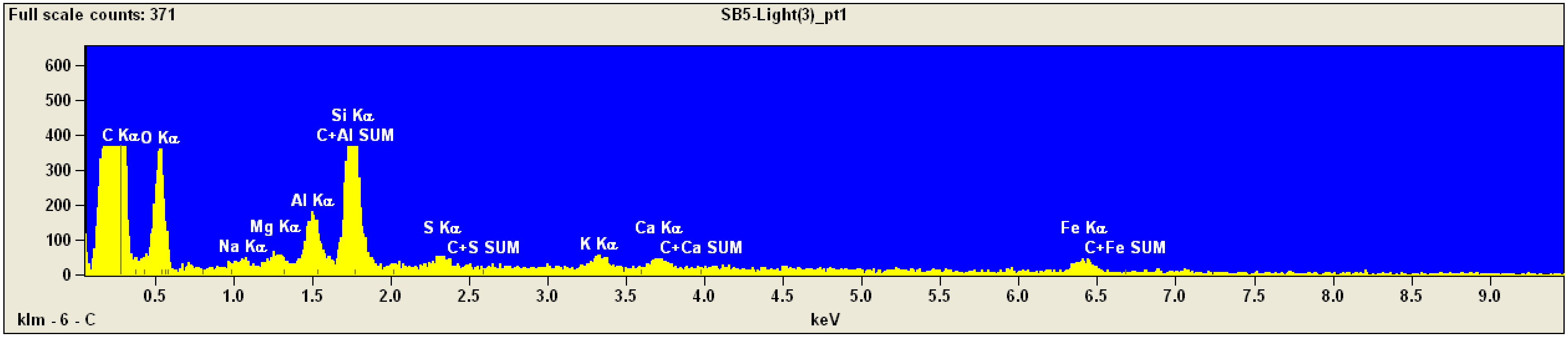


Image Name: SB5-Light(3)

Accelerating Voltage: 20.0 kV

Magnification: 3644



Project: 05-13-2015

SB5-Light(3)

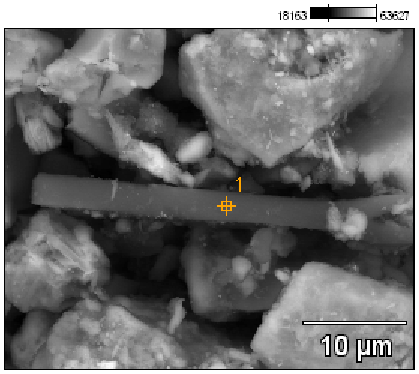


Image Name: SB5-Light(3)

Accelerating Voltage: 20.0 kV

Magnification: 3644

Weight %

	C	*O*	*Na*	*Mg*	*Al*	*Si*	*S*	*K*	*Ca*	*Fe*
SB5-Light(3)_pt1	68.42	22.39	0.68	0.32	1.25	4.12	0.28	0.44	0.44	1.66

	O	*Na*	*Mg*	*Al*	*Si*	*S*	*K*	*Ca*	*Fe*
SB5-Light(3)_pt1	52.67	2.58	1.65	6.76	23.15	1.72	2.18	2.11	7.18

Project: 05-13-2015

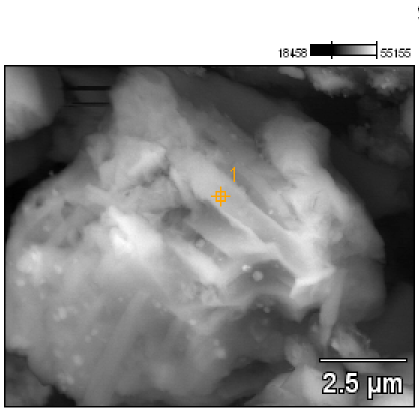
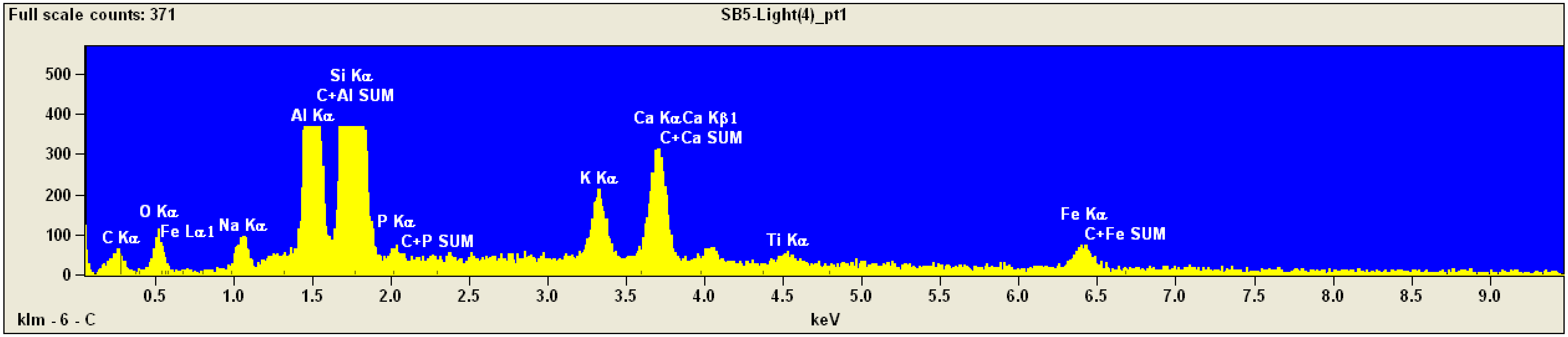


Image Name: SB5-Light(4)

Accelerating Voltage: 20.0 kV

Magnification: 12256



Project: 05-13-2015

SB5-Light(4)

Image Name: SB5-Light(4)

Accelerating Voltage: 20.0 kV

Magnification: 12256

Weight %

	C	O	Na	Al	Si	P	K	Ca	Ti	Fe
SB5-Light(4)_pt1	21.88	10.91	1.98	10.05	40.35	0.89	3.25	6.84	0.86	2.99

	O	Na	Al	Si	P	K	Ca	Ti	Fe
SB5-Light(4)_pt1	13.00	2.45	12.61	52.59	1.29	4.28	8.94	1.10	3.75

Project: 05-13-2015

SB5-Light(5)

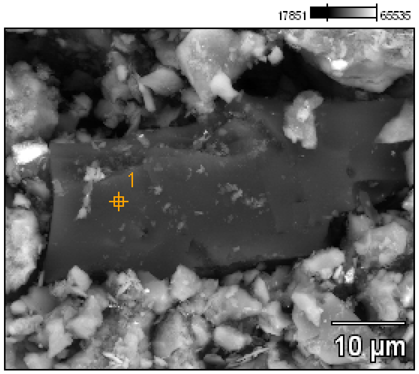
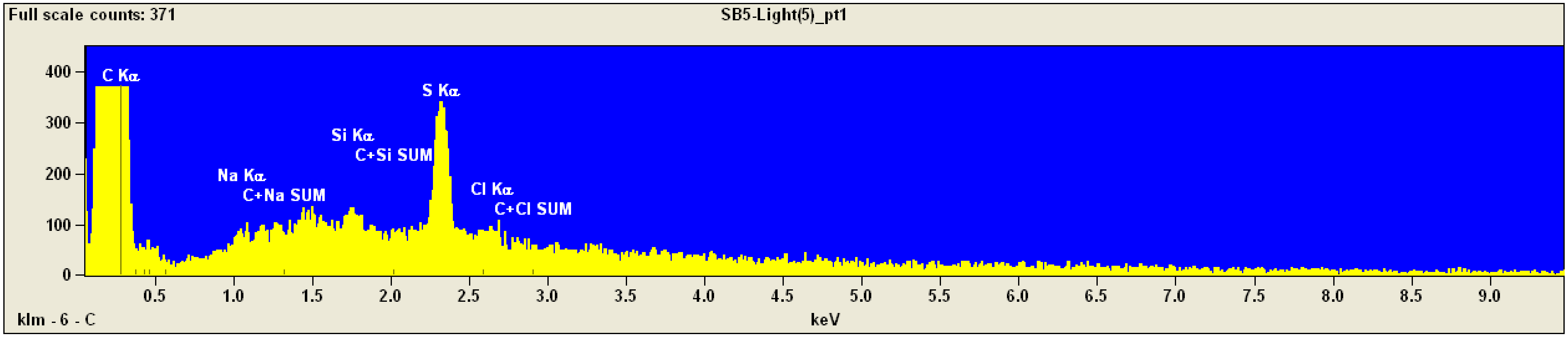


Image Name: SB5-Light(5)

Accelerating Voltage: 20.0 kV

Magnification: 2577



Project: 05-13-2015

SB5-Light(5)

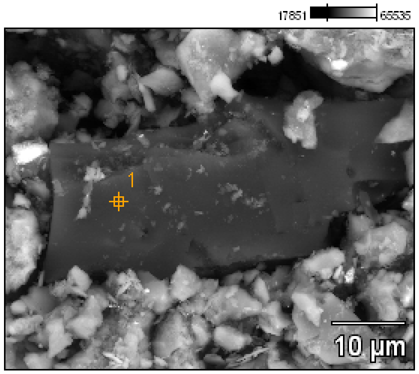


Image Name: SB5-Light(5)

Accelerating Voltage: 20.0 kV

Magnification: 2577

Weight %

	C	***Na***	***Si***	***S***	***Cl***
SB5-Light(5)_pt1	97.57	0.27	0.25	1.66	0.24

	Na	***Si***	***S***	***Cl***
SB5-Light(5)_pt1	8.39	9.09	65.15	17.36

Project: 05-13-2015

SB5-Light(6)

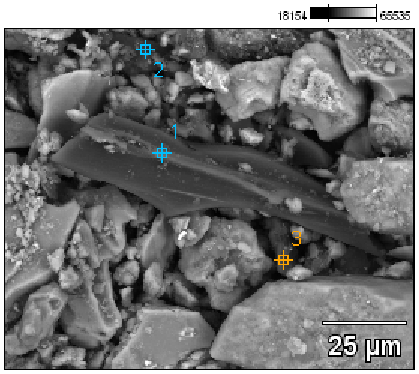
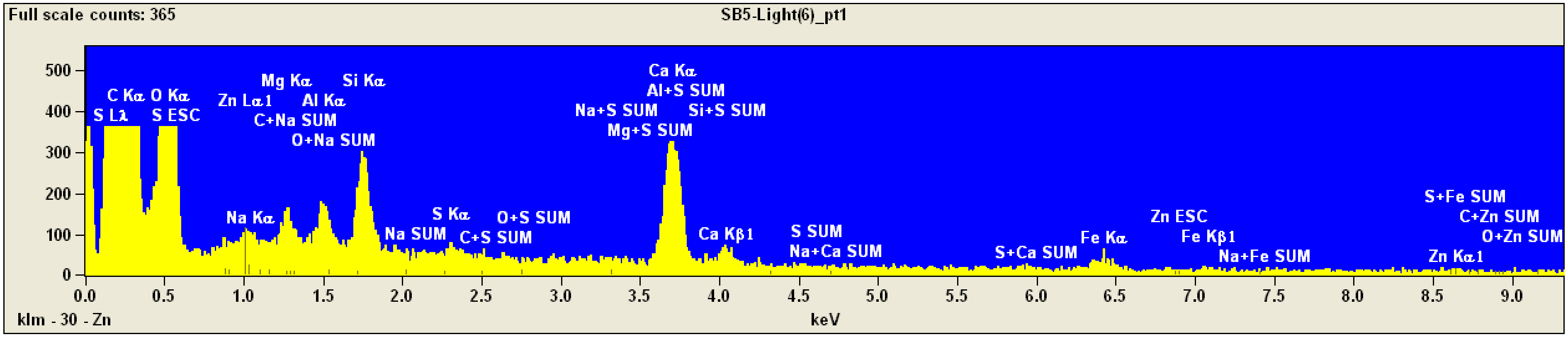
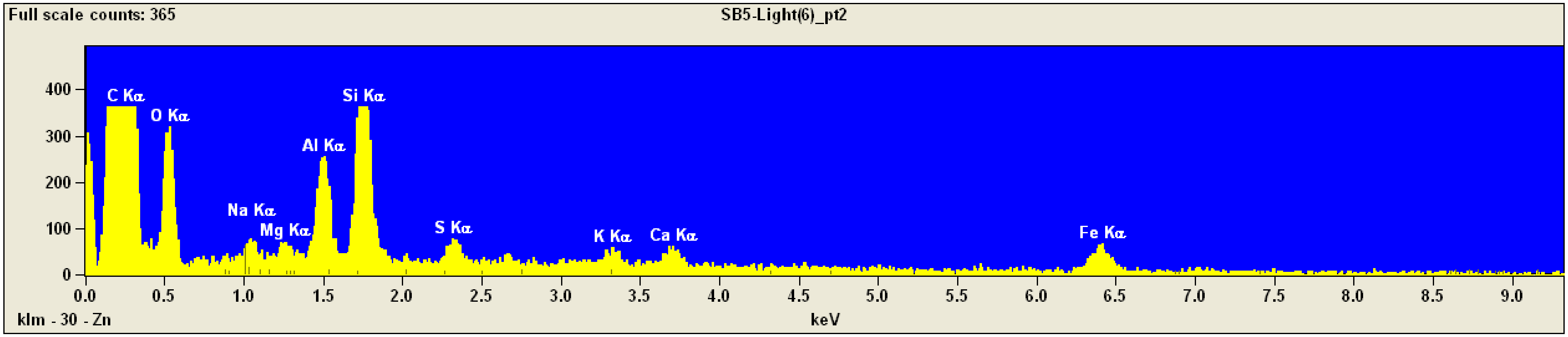


Image Name: SB5-Light(6)

Accelerating Voltage: 20.0 kV

Magnification: 1181





Project: 05-13-2015

SB5-Light(6)

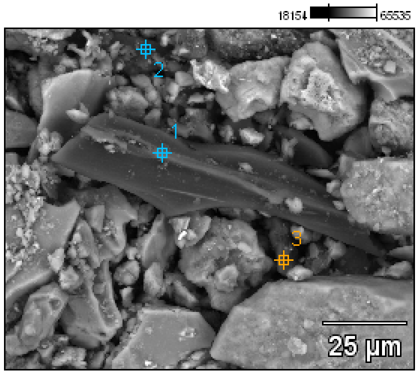
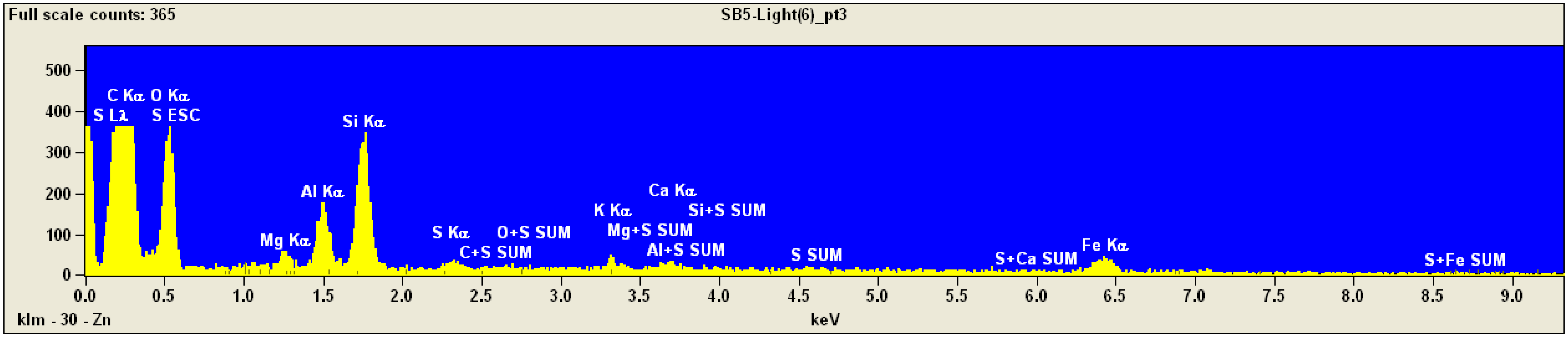


Image Name: SB5-Light(6)

Accelerating Voltage: 20.0 kV

Magnification: 1181



Project: 05-13-2015

SB5-Light(6)

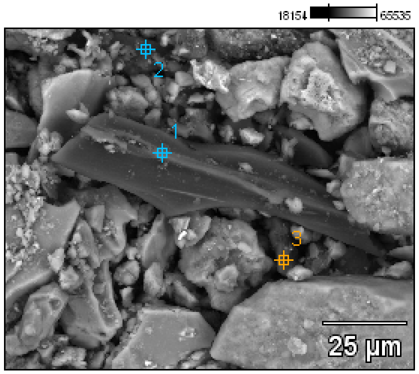


Image Name: SB5-Light(6)

Accelerating Voltage: 20.0 kV

Magnification: 1181

Weight %

	C	***O***	***Na***	***Mg***	***Al***	***Si***	***S***	***K***	***Ca***	***Fe***	***Zn***
SB5-Light(6)_pt1	65.95	30.30	0.00	0.23	0.22	0.69	0.07		1.83	0.53	0.18
SB5-Light(6)_pt2	78.28	14.01	0.60	0.21	1.37	2.87	0.37	0.24	0.38	1.67	
SB5-Light(6)_pt3	62.32	28.94		0.44	1.68	3.64	0.32	0.37	0.31	1.96	

	O	***Na***	***Mg***	***Al***	***Si***	***S***	***K***	***Ca***	***Fe***	***Zn***
SB5-Light(6)_pt1	76.81	0.00	1.81	1.67	4.91	0.44		10.47	2.94	0.95
SB5-Light(6)_pt2	44.28	4.33	1.62	10.11	23.09	3.10	1.61	2.46	9.41	
SB5-Light(6)_pt3	57.45		2.20	8.31	19.22	1.79	1.68	1.41	7.94	

Project: 05-13-2015

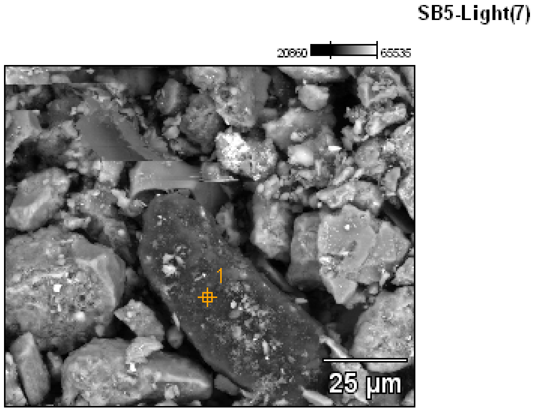
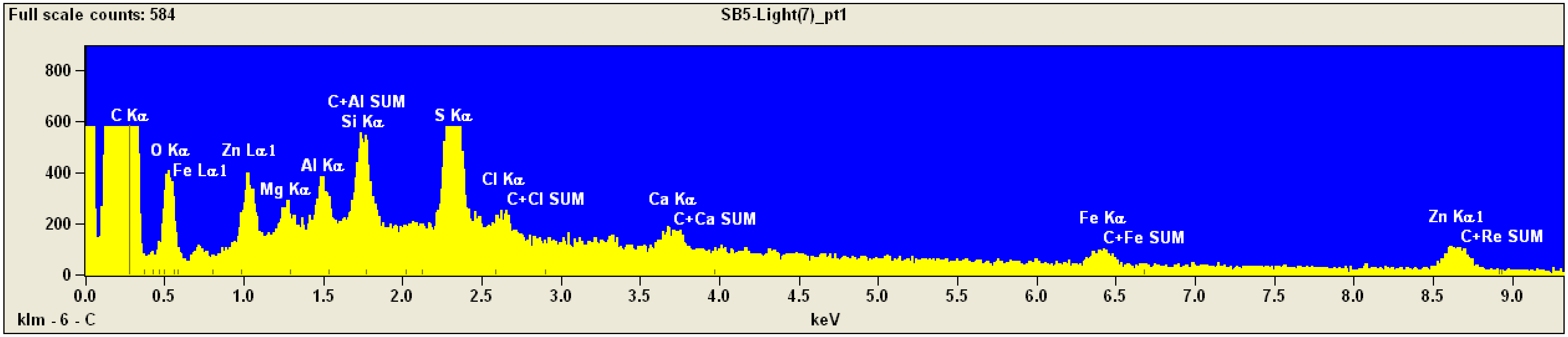


Image Name: SB5-Light(7)

Accelerating Voltage: 20.0 kV

Magnification: 1181



Project: 05-13-2015

SB5-Light(7)

Image Name: SB5-Light(7)

Accelerating Voltage: 20.0 kV

Magnification: 1181

Weight %

	C	O	Mg	Al	Si	S	Cl	Ca	Fe	Zn
SB5-Light(7)_pt1	85.28	6.66	0.25	0.30	0.85	2.38	0.30	0.42	0.73	2.83

	O	Mg	Al	Si	S	Cl	Ca	Fe	Zn
SB5-Light(7)_pt1	40.28	2.43	2.88	7.83	19.75	2.69	3.00	4.41	16.73

Project: 05-13-2015

SB5-Light(8)

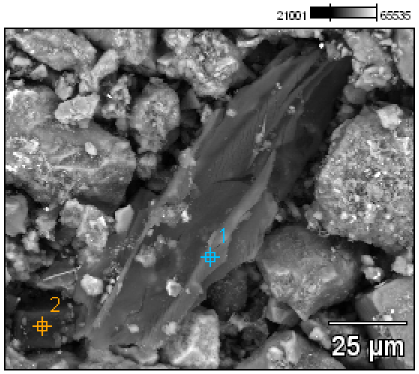
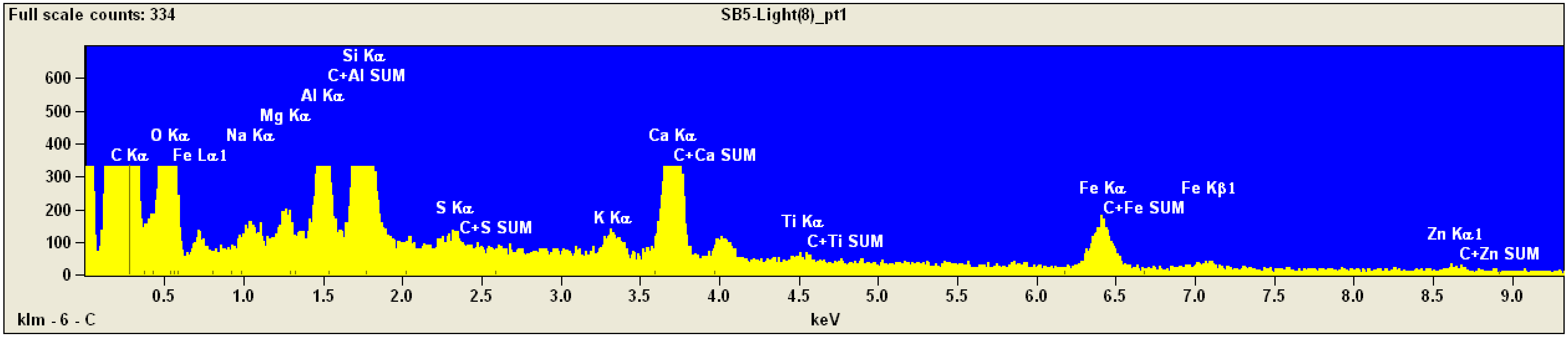
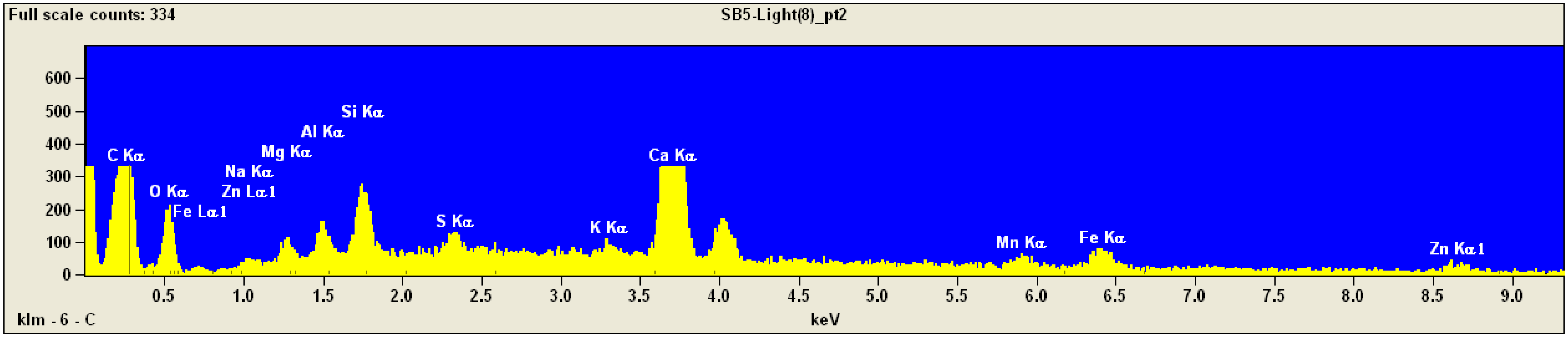


Image Name: SB5-Light(8)

Accelerating Voltage: 20.0 kV

Magnification: 1083





Project: 05-13-2015

SB5-Light(8)

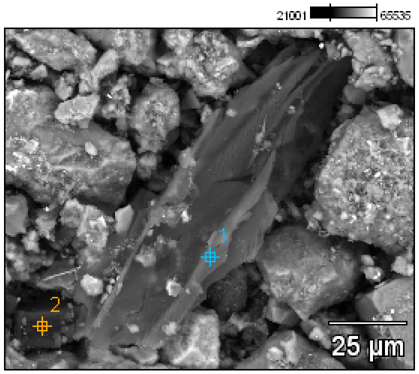


Image Name: SB5-Light(8)

Accelerating Voltage: 20.0 kV

Magnification: 1083

Weight %

	C	O	Na	Mg	Al	Si	S	K	Ca	Ti	Mn	Fe	Zn
SB5-Light(8)_pt1	62.62	26.54	0.65	0.28	1.15	3.40	0.16	0.28	2.52	0.13		1.87	0.39
SB5-Light(8)_pt2	48.45	22.32	0.69	0.79	0.83	2.36	0.73	0.41	16.77		1.47	2.63	2.55

	O	Na	Mg	Al	Si	S	K	Ca	Ti	Mn	Fe	Zn
SB5-Light(8)_pt1	59.94	1.80	0.94	4.82	14.19	0.67	1.00	8.79	0.44		6.14	1.27
SB5-Light(8)_pt2	36.83	1.84	2.08	2.13	5.85	1.69	0.87	35.16		3.05	5.41	5.10

Project: 04-08-2015

SB3(1)

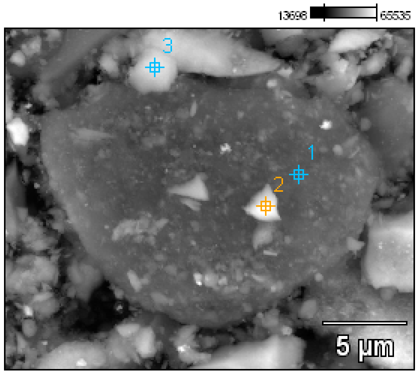
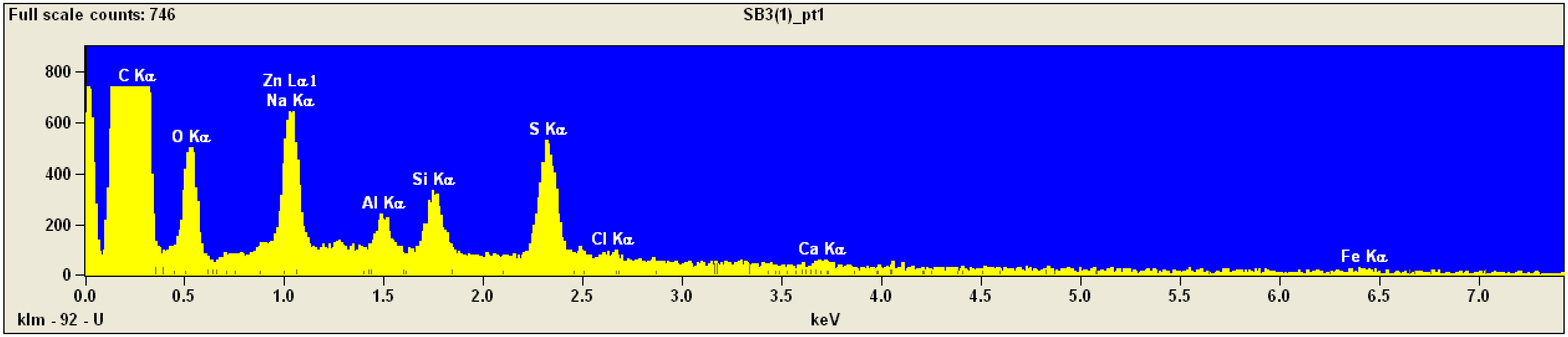
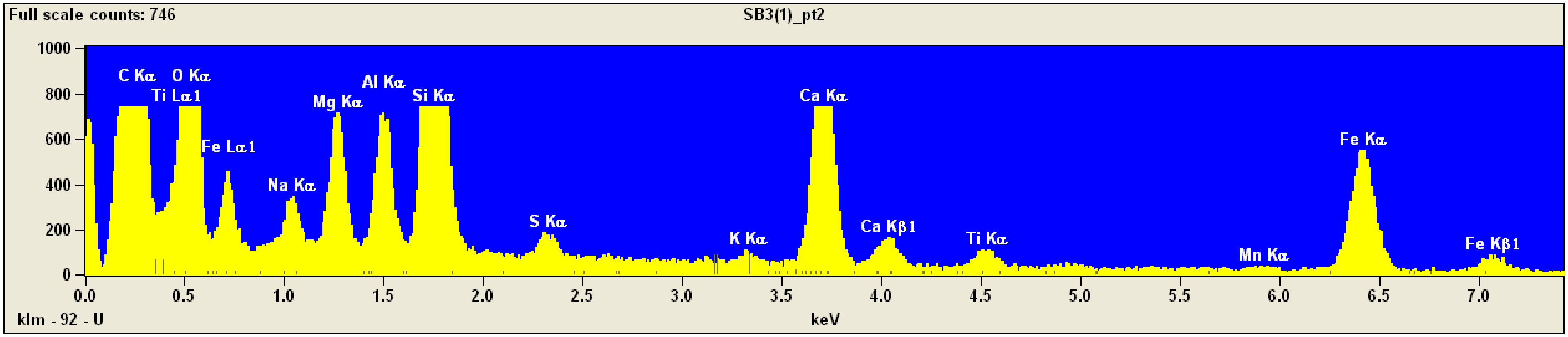


Image Name: SB3(1)

Accelerating Voltage: 20.0 kV

Magnification: 5869





Project: 04-08-2015

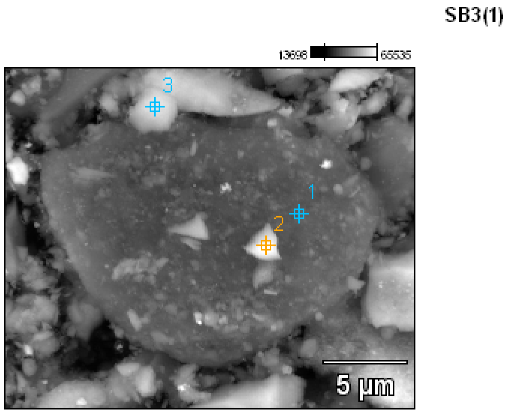
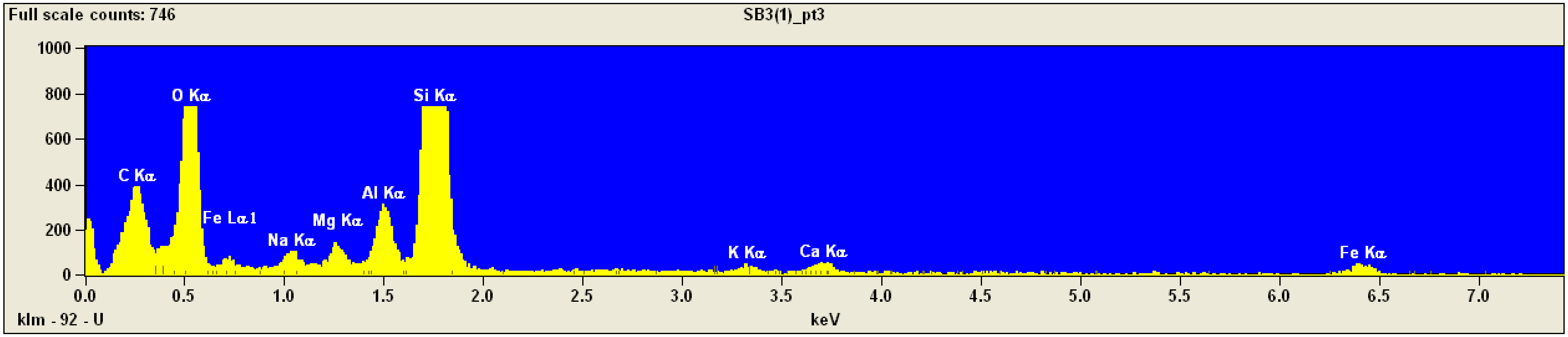


Image Name: SB3(1)

Accelerating Voltage: 20.0 kV

Magnification: 5869



Project: 04-08-2015

SB3(1)

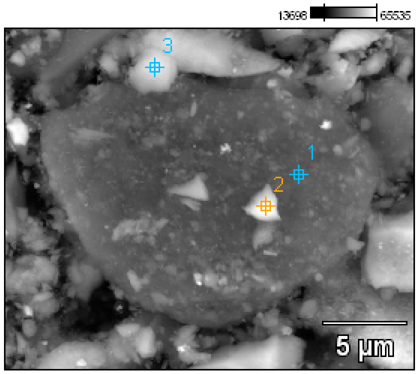


Image Name: SB3(1)

Accelerating Voltage: 20.0 kV

Magnification: 5869

Weight %

	C	O	Na	Mg	Al	Si	S	Cl	K	Ca	Ti	Mn	Fe	Zn
SB3(1)_pt1	81.38	10.88	2.11		0.29	0.71	1.63	0.12		0.11			0.20	2.57
SB3(1)_pt2	44.93	34.28	1.12	1.53	1.38	7.65	0.30		0.13	3.51	0.40	0.19	4.59	
SB3(1)_pt3	36.07	42.42	1.03	0.58	1.63	16.27			0.25	0.48			1.28	

	O	Na	Mg	Al	Si	S	Cl	K	Ca	Ti	Mn	Fe	Zn
SB3(1)_pt1	44.94	14.06		2.99	6.67	13.41	1.05		0.74			1.17	14.96
SB3(1)_pt2	51.39	2.72	3.80	3.44	18.98	0.77		0.28	7.74	0.87	0.40	9.60	
SB3(1)_pt3	53.75	2.12	1.22	3.44	35.29			0.55	1.04			2.59	

Project: 04-08-2015

SB3(2)

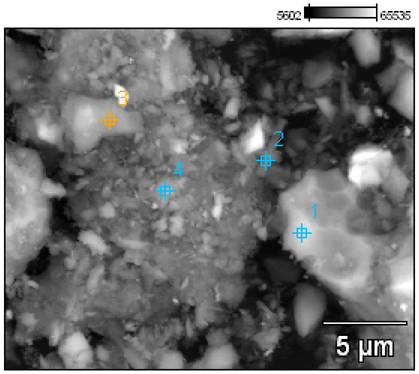
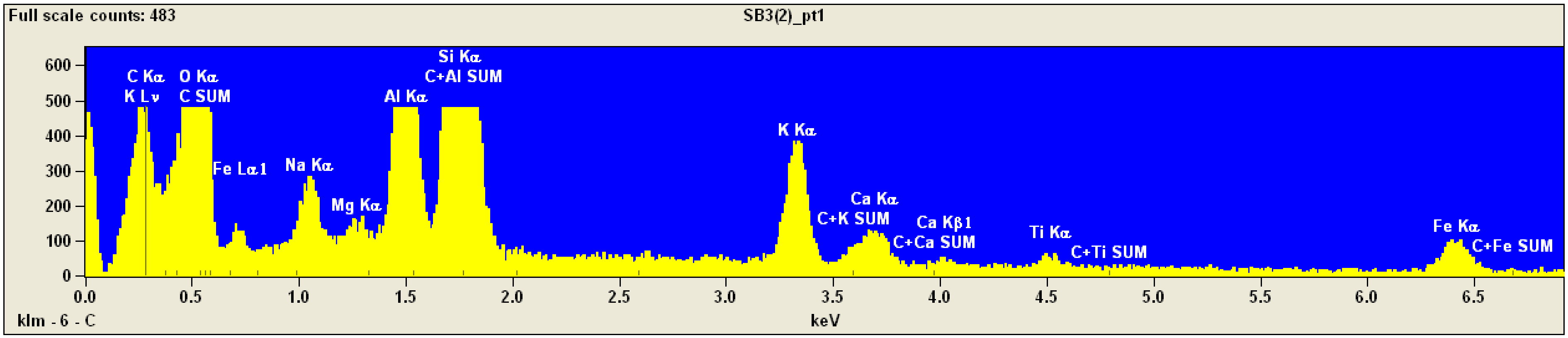
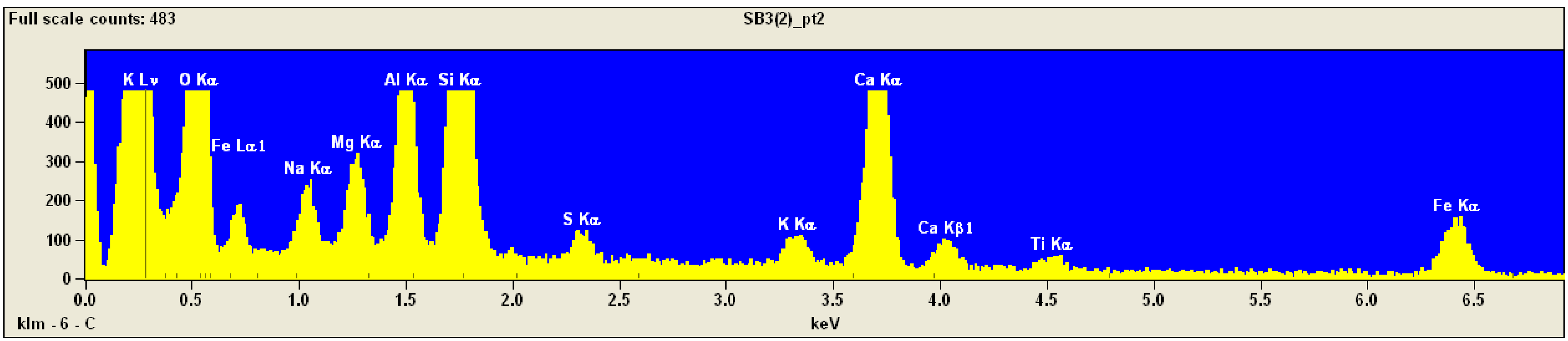


Image Name: SB3(2)

Accelerating Voltage: 20.0 kV

Magnification: 5869





Project: 04-08-2015

SB3(2)

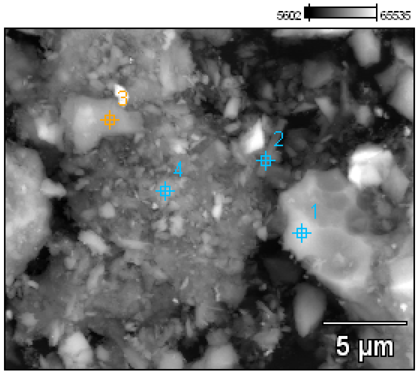
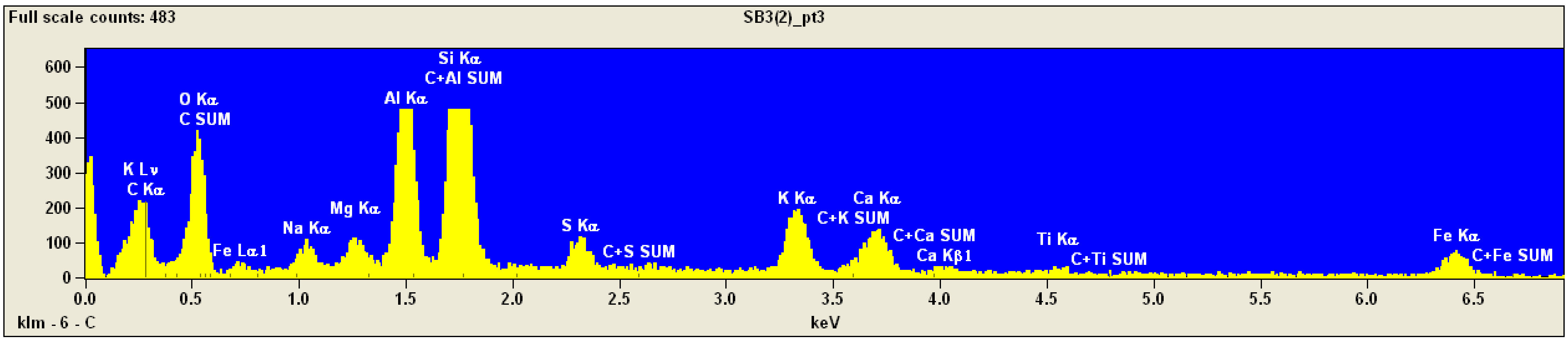
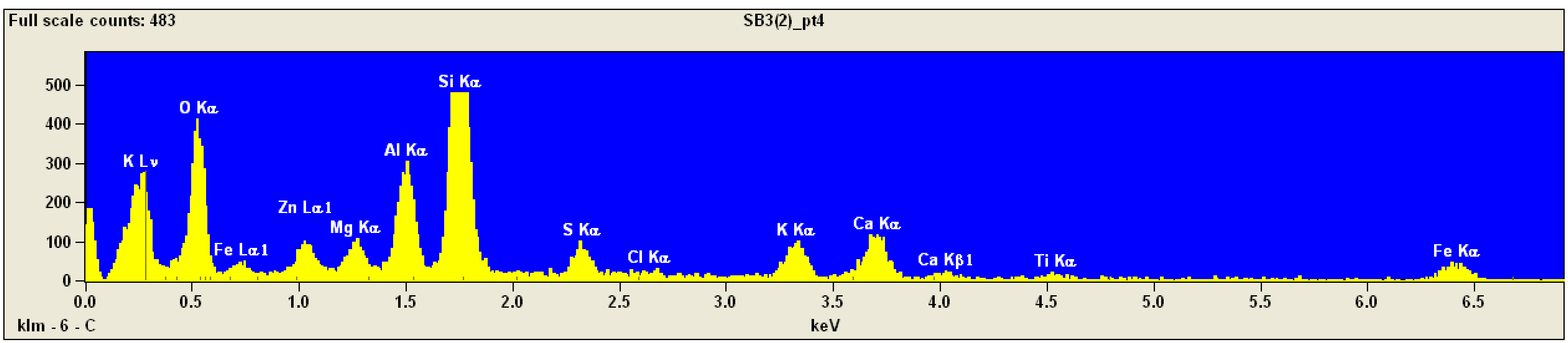


Image Name: SB3(2)

Accelerating Voltage: 20.0 kV

Magnification: 5869





Project: 04-08-2015

SB3(2)

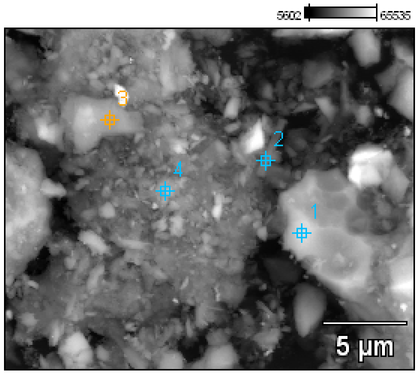


Image Name: SB3(2)

Accelerating Voltage: 20.0 kV

Magnification: 5869

Weight %

	C	O	Na	Mg	Al	Si	S	Cl	K	Ca	Ti	Fe	Zn
SB3(2)_pt1	32.27	39.24	1.54	0.14	4.36	18.18			1.87	0.63	0.29	1.49	
SB3(2)_pt2		47.53	3.60	3.16	6.47	18.56	1.11		1.12	10.33	0.84	5.83	1.44
SB3(2)_pt3	41.36	24.08	1.68	1.04	6.85	14.20	1.52		3.11	2.68	0.33	3.16	
SB3(2)_pt4		35.17		2.68	9.25	27.70	3.19	0.47	4.04	6.50	0.77	6.12	4.11

	O	Na	Mg	Al	Si	S	Cl	K	Ca	Ti	Fe	Zn
SB3(2)_pt1	42.04	2.90	0.25	8.41	37.68			3.95	1.31	0.58	2.88	
SB3(2)_pt2	47.53	3.60	3.16	6.47	18.56	1.11		1.12	10.33	0.84	5.83	1.44
SB3(2)_pt3	34.46	3.01	1.93	12.63	28.03	3.19		5.82	4.95	0.58	5.40	
SB3(2)_pt4	35.17		2.68	9.25	27.70	3.19	0.47	4.04	6.50	0.77	6.12	4.11

Project: 04-08-2015

SB3(3)

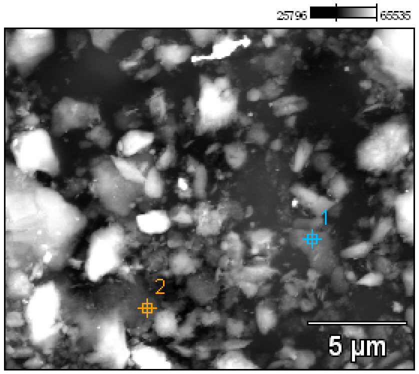
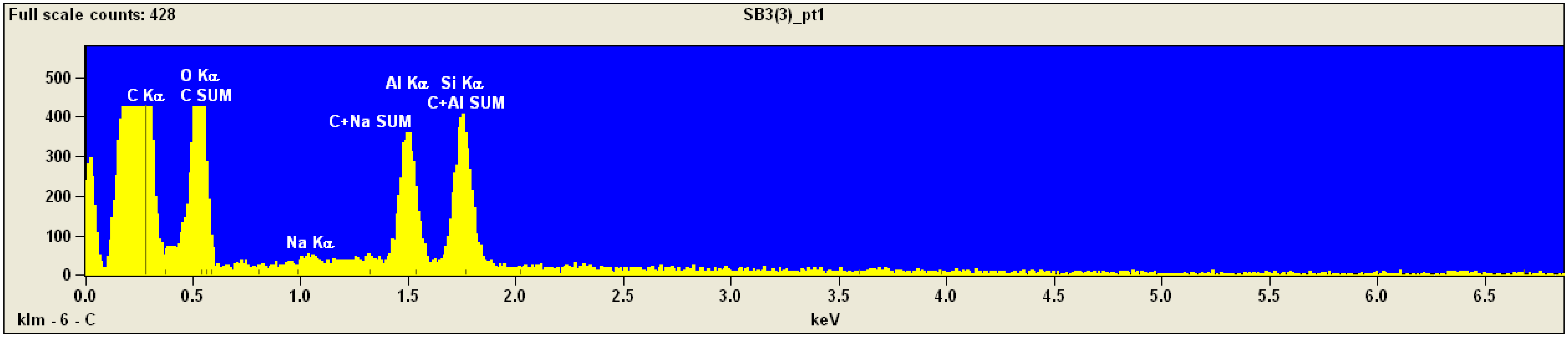
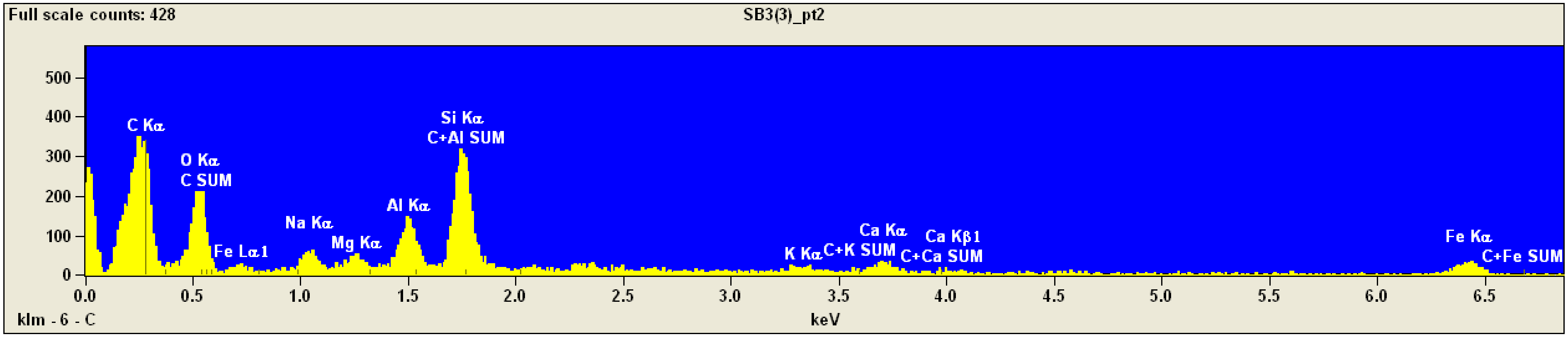


Image Name: SB3(3)

Accelerating Voltage: 20.0 kV

Magnification: 6979





Project: 04-08-2015

SB3(3)

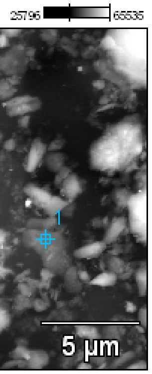


Image Name: SB3(3)

Accelerating Voltage: 20.0 kV

Magnification: 6979

Weight %

	C	O	Na	Mg	Al	Si	K	Ca	Fe
SB3(3)_pt1	64.53	28.51	0.44		3.01	3.51			
SB3(3)_pt2	61.80	22.95	2.01	0.70	2.42	5.82	0.37	0.95	2.98

	O	Na	Mg	Al	Si	K	Ca	Fe
SB3(3)_pt1	58.67	2.32		16.05	22.96			
SB3(3)_pt2	42.67	5.93	2.62	9.63	24.81	1.34	3.39	9.60

Project: 04-08-2015

SB3(5)

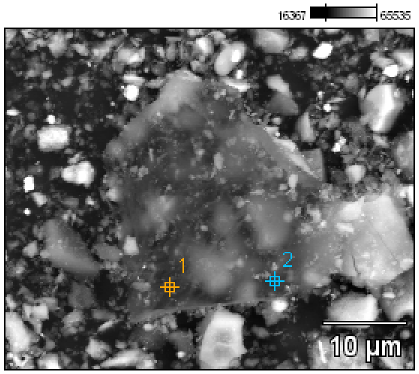
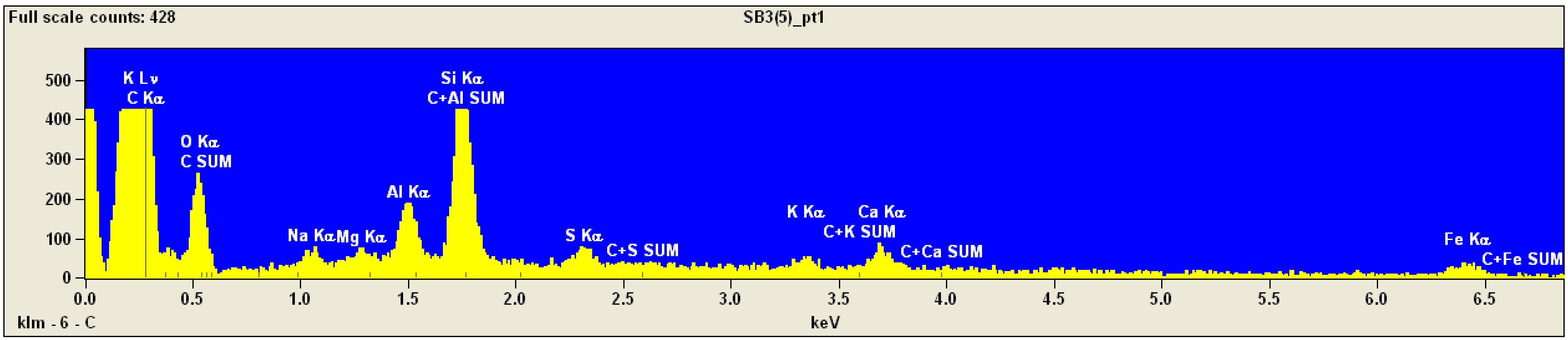
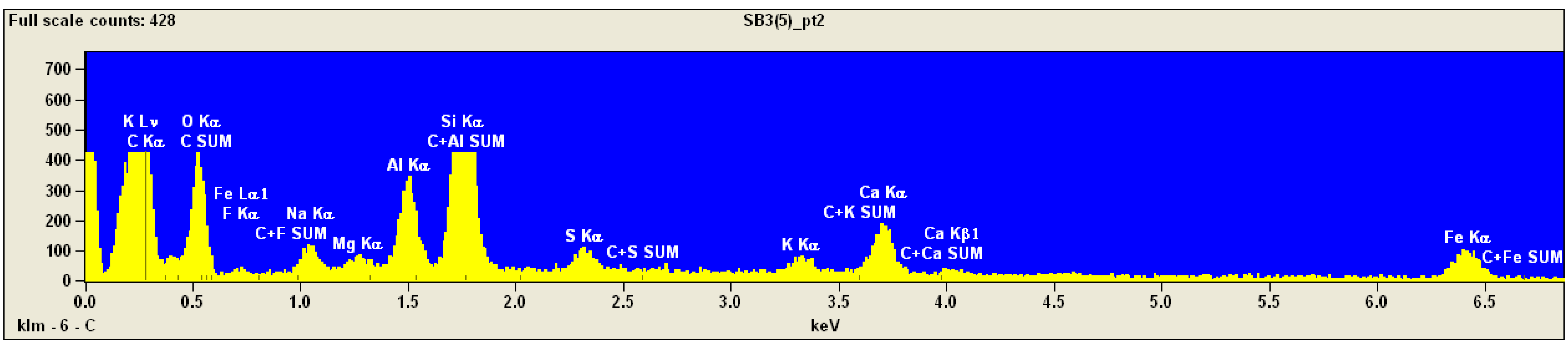


Image Name: SB3(5)

Accelerating Voltage: 20.0 kV

Magnification: 2934





Project: 04-08-2015

SB3(5)

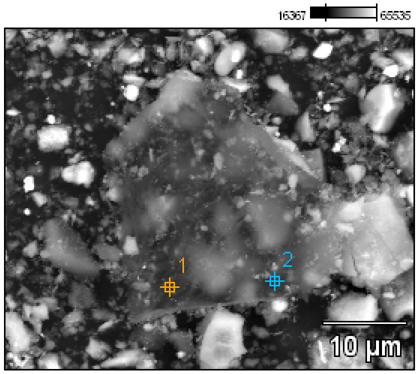


Image Name: SB3(5)

Accelerating Voltage: 20.0 kV

Magnification: 2934

Weight %

	C	O	F	Na	Mg	Al	Si	S	K	Ca	Fe	Zn
SB3(5)_pt1	77.55	12.07		0.90	0.27	1.35	4.49	0.60	0.36	0.89	1.52	
SB3(5)_pt2	60.93	19.11	0.00	1.41	0.36	2.20	8.24	0.71	0.57	1.89	3.24	1.34

	O	F	Na	Mg	Al	Si	S	K	Ca	Fe	Zn
SB3(5)_pt1	38.94		5.20	1.37	7.48	28.35	4.29	2.08	4.93	7.36	
SB3(5)_pt2	33.55	1.42	4.73	1.26	7.42	28.83	2.71	1.81	5.77	8.90	3.61

Project: 04-08-2015

SB3(7)

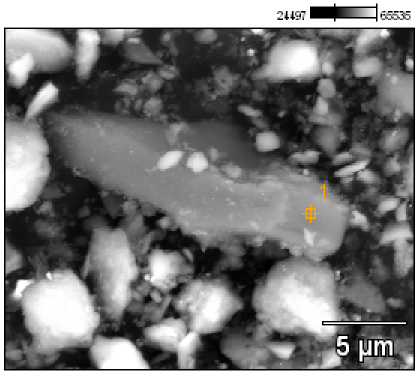
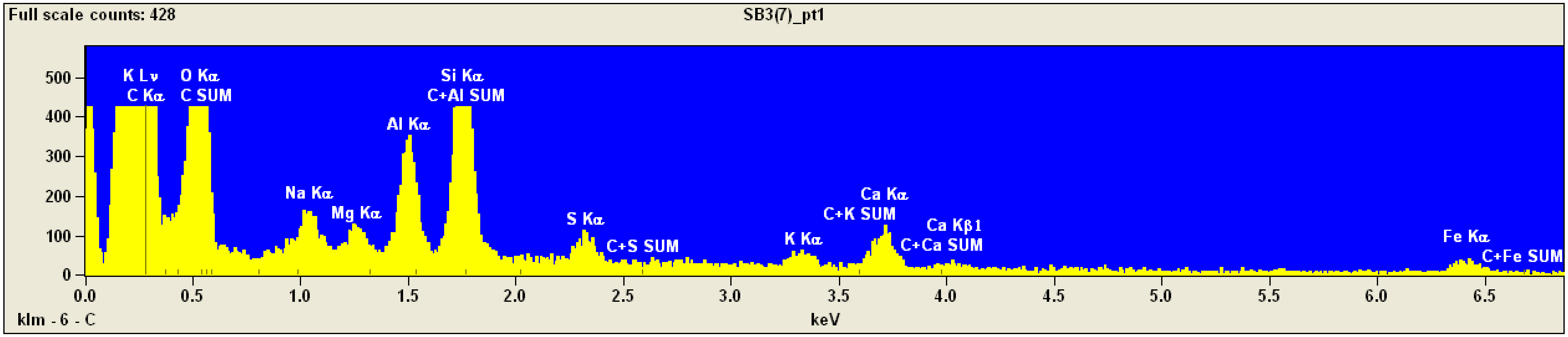


Image Name: SB3(7)

Accelerating Voltage: 20.0 kV

Magnification: 5869



Project: 04-08-2015

SB3(7)

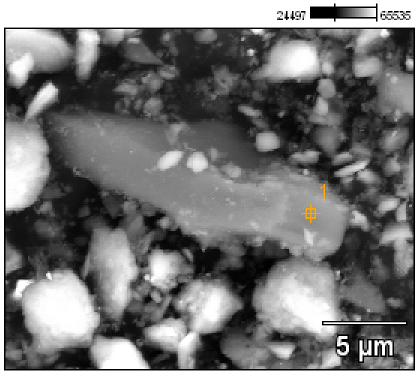


Image Name: SB3(7)

Accelerating Voltage: 20.0 kV

Magnification: 5869

Weight %

	C	*O*	*Na*	*Mg*	*Al*	*Si*	*S*	*K*	*Ca*	*Fe*
SB3(7)_pt1	64.07	28.21	1.19	0.36	1.38	2.78	0.40	0.25	0.81	0.55

	O	*Na*	*Mg*	*Al*	*Si*	*S*	*K*	*Ca*	*Fe*
SB3(7)_pt1	59.60	5.97	1.92	7.38	15.59	2.24	1.21	3.76	2.34

Project: 04-08-2015

SB3(8)

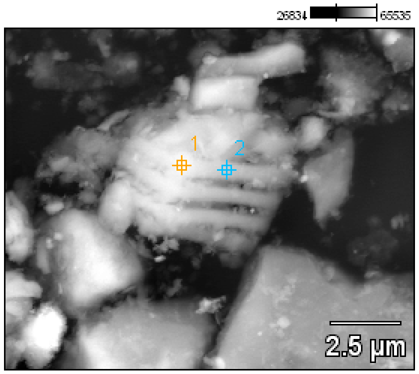
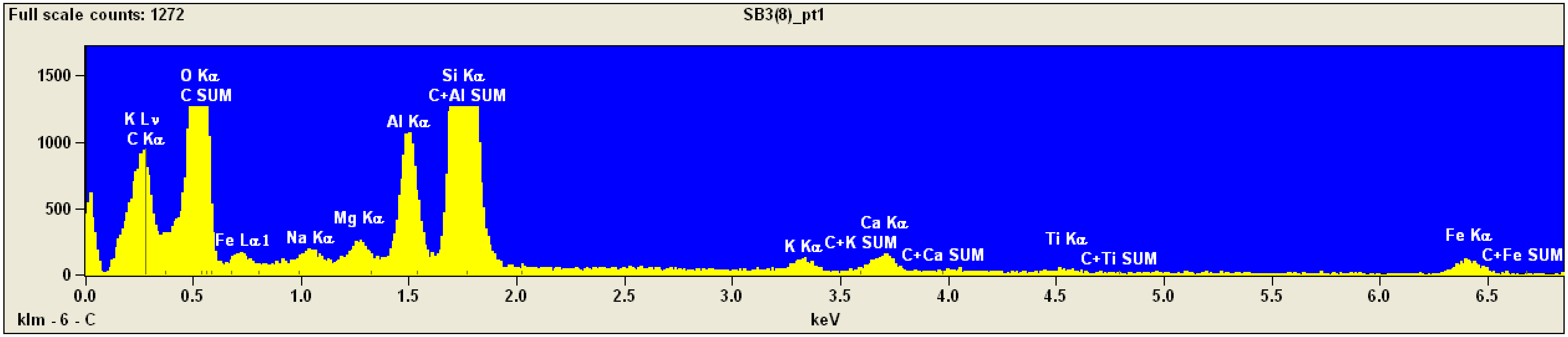
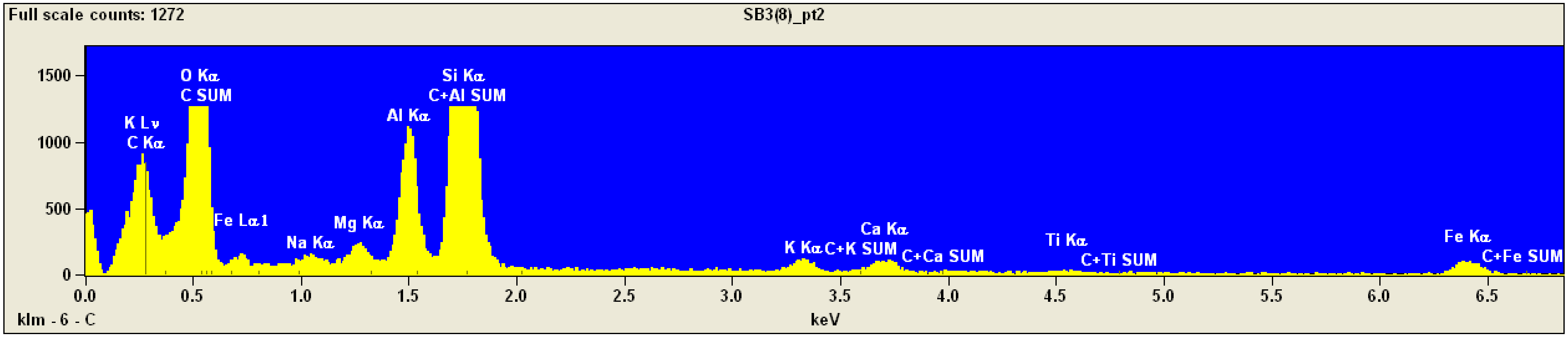


Image Name: SB3(8)

Accelerating Voltage: 20.0 kV

Magnification: 9870





Project: 04-08-2015

SB3(8)

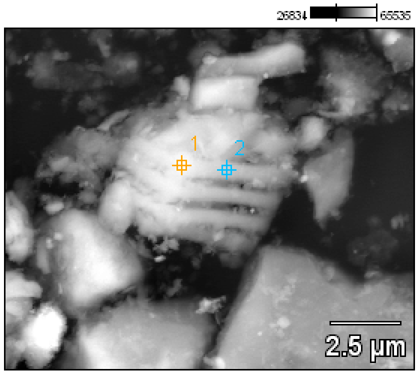


Image Name: SB3(8)

Accelerating Voltage: 20.0 kV

Magnification: 9870

Weight %

	C	O	Na	Mg	Al	Si	K	Ca	Ti	Fe
SB3(8)_pt1	38.51	39.24	0.62	0.48	2.75	15.95	0.34	0.66	0.23	1.22
SB3(8)_pt2	38.50	40.29	0.46	0.53	3.09	14.80	0.44	0.50	0.14	1.24

	O	Na	Mg	Al	Si	K	Ca	Ti	Fe
SB3(8)_pt1	42.49	1.86	1.19	6.66	41.58	0.92	1.74	0.58	2.97
SB3(8)_pt2	51.50	0.99	1.14	6.79	34.46	1.04	1.15	0.30	2.63

Project: 04-08-2015

SB3(10)

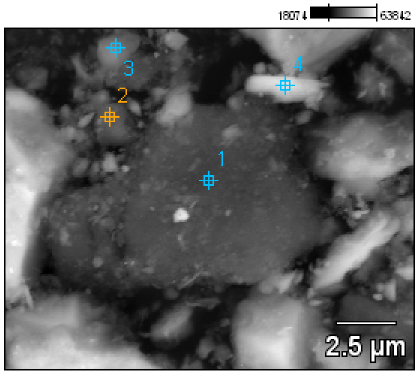
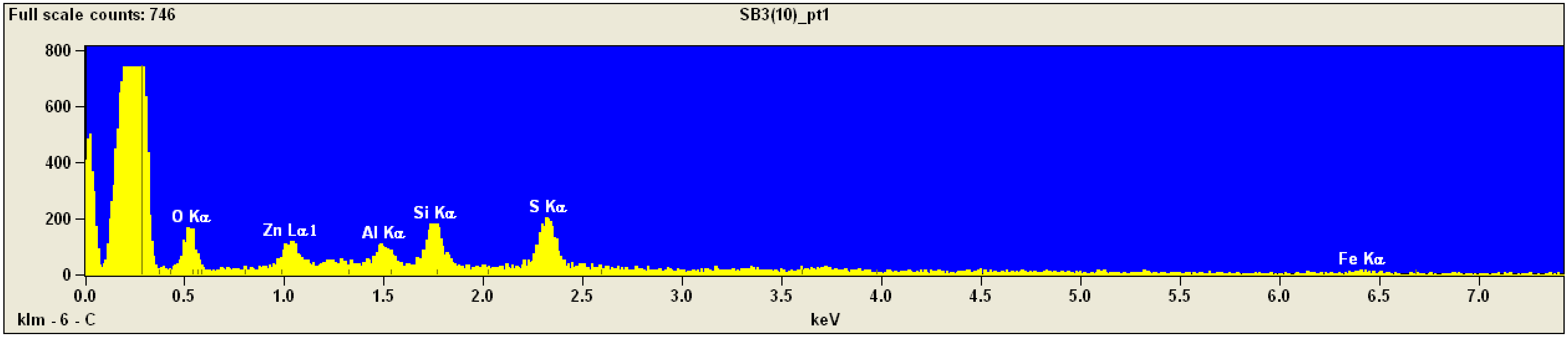
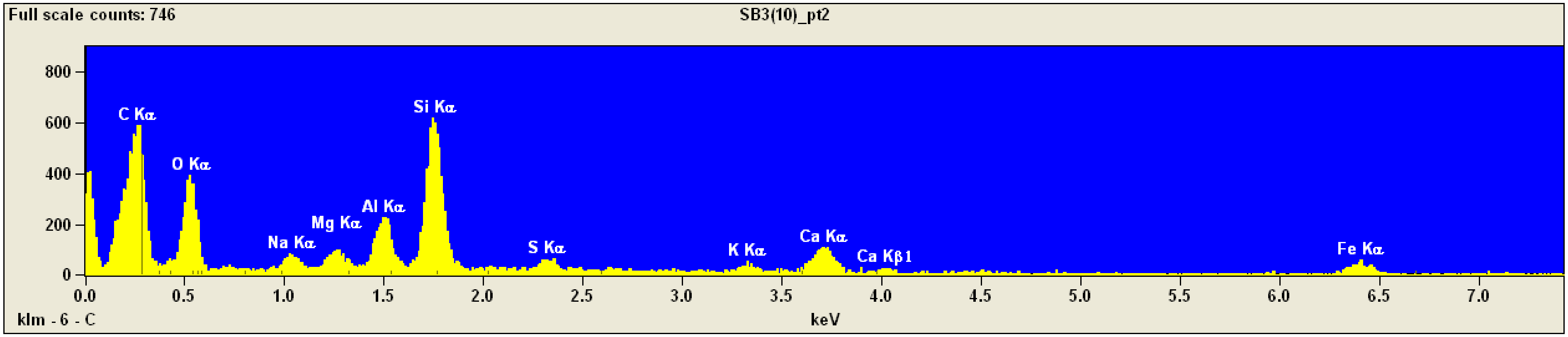


Image Name: SB3(10)

Accelerating Voltage: 20.0 kV

Magnification: 8300





Project: 04-08-2015

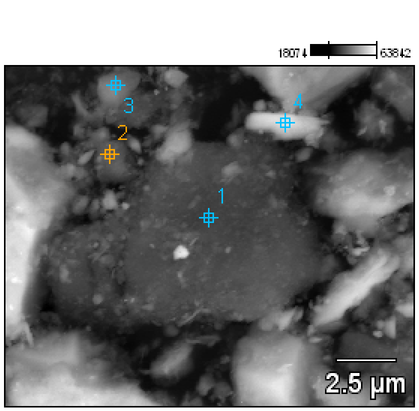
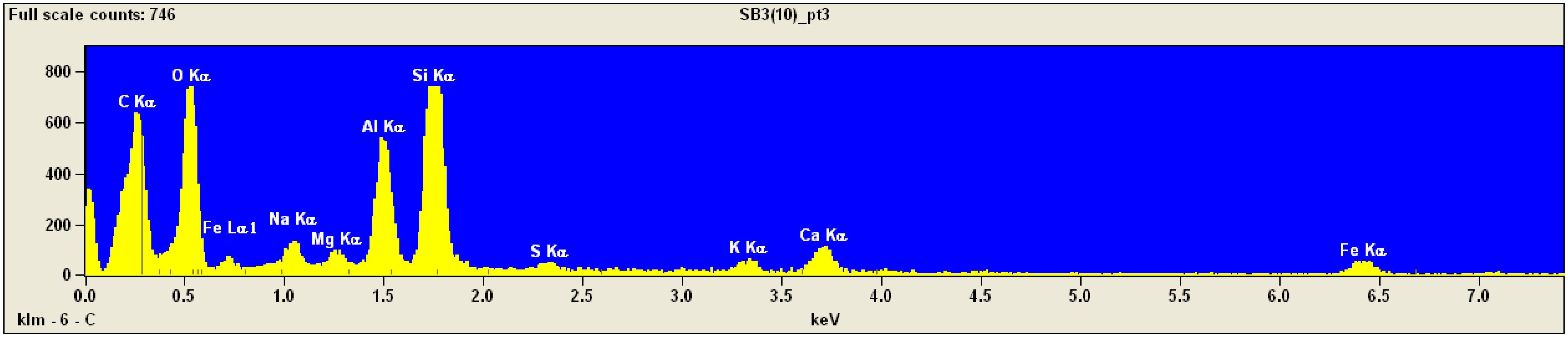
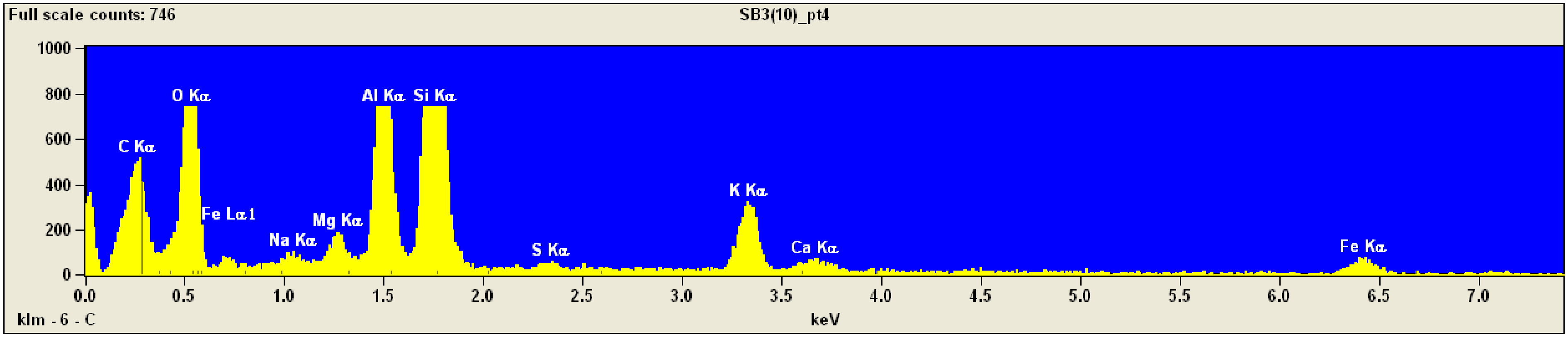


Image Name: SB3(10)

Accelerating Voltage: 20.0 kV

Magnification: 8300





Project: 04-08-2015

SB3(10)

Image Name: SB3(10)

Accelerating Voltage: 20.0 kV

Magnification: 8300

Weight %

	C	O	Na	Mg	Al	Si	S	K	Ca	Fe	Cu	Zn
SB3(10)_pt1		45.28			6.77	14.21	18.00			2.59		13.15
SB3(10)_pt2	56.21	28.58	1.41	0.91	2.14	6.09	0.54	0.41	1.67	2.04		
SB3(10)_pt3	47.58	35.85	1.76	0.48	3.74	7.28	0.28	0.47	1.05	1.50		
SB3(10)_pt4	38.91	37.22	0.58	0.71	5.56	12.25	0.19	2.38	0.43	1.65	0.11	

	O	Na	Mg	Al	Si	S	K	Ca	Fe	Cu	Zn
SB3(10)_pt1	45.28			6.77	14.21	18.00			2.59		13.15
SB3(10)_pt2	49.64	4.48	3.08	7.24	21.42	2.00	1.29	5.11	5.74		
SB3(10)_pt3	52.56	4.70	1.37	10.47	22.12	0.92	1.31	2.82	3.74		
SB3(10)_pt4	48.86	1.07	1.44	11.43	27.31	0.47	5.07	0.91	3.22	0.22	

Project: 04-08-2015

SB5(1)

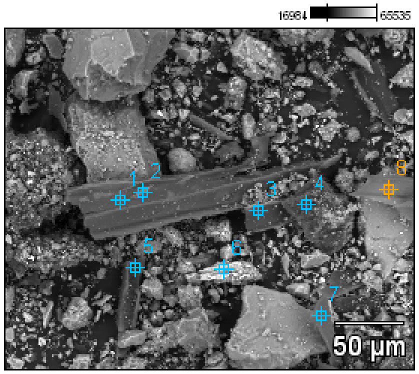
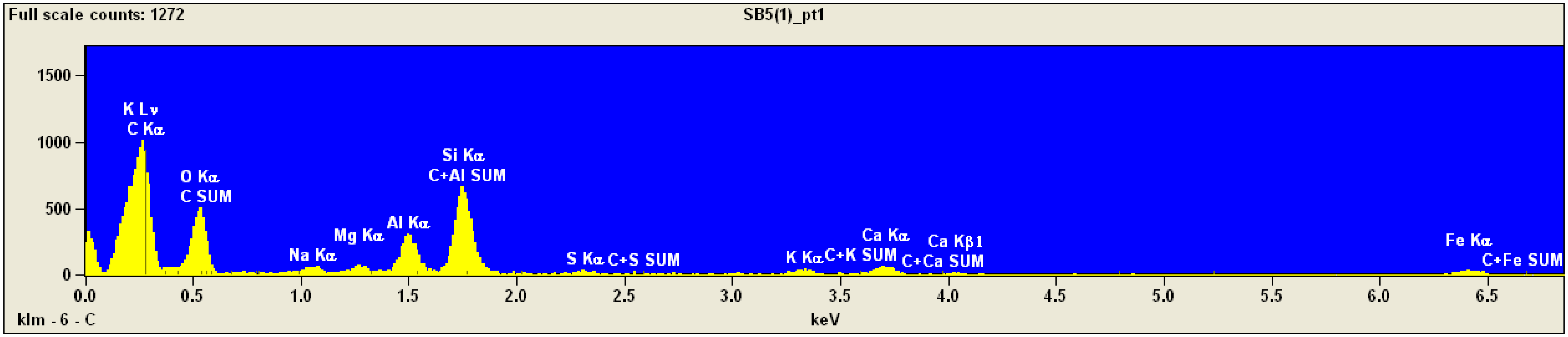
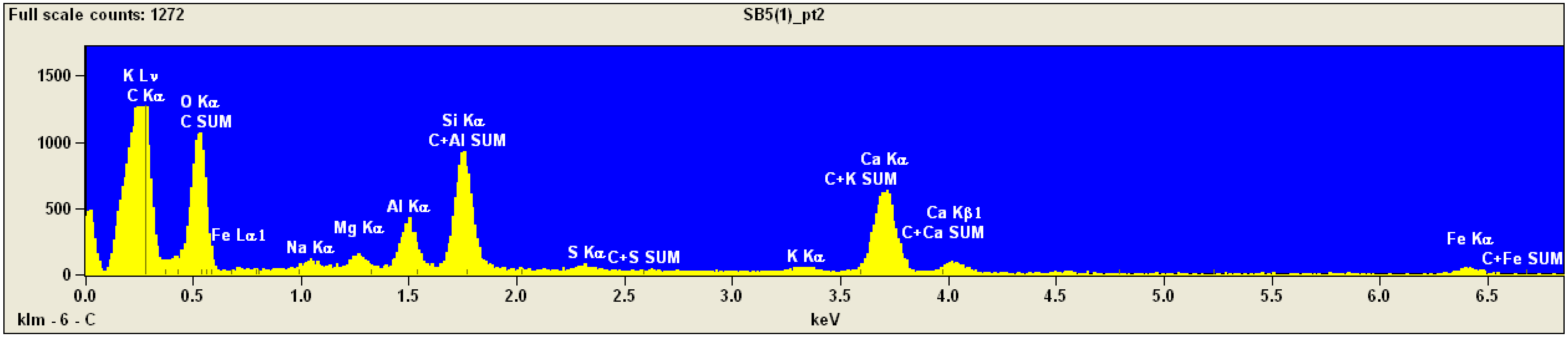


Image Name: SB5(1)

Accelerating Voltage: 20.0 kV

Magnification: 476





Project: 04-08-2015

SB5(1)

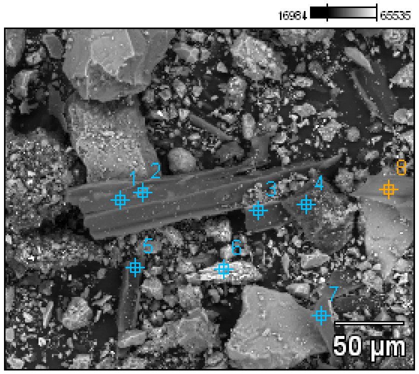
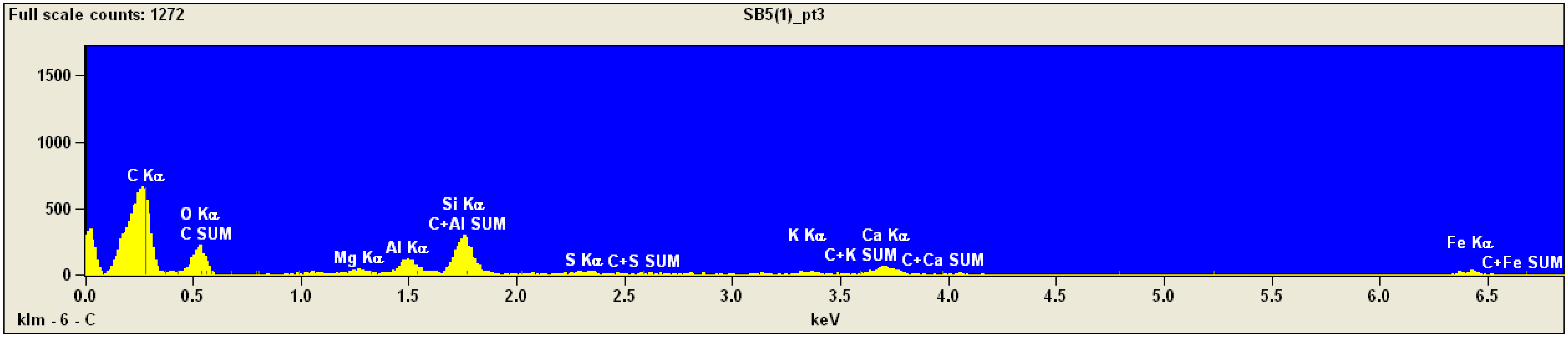
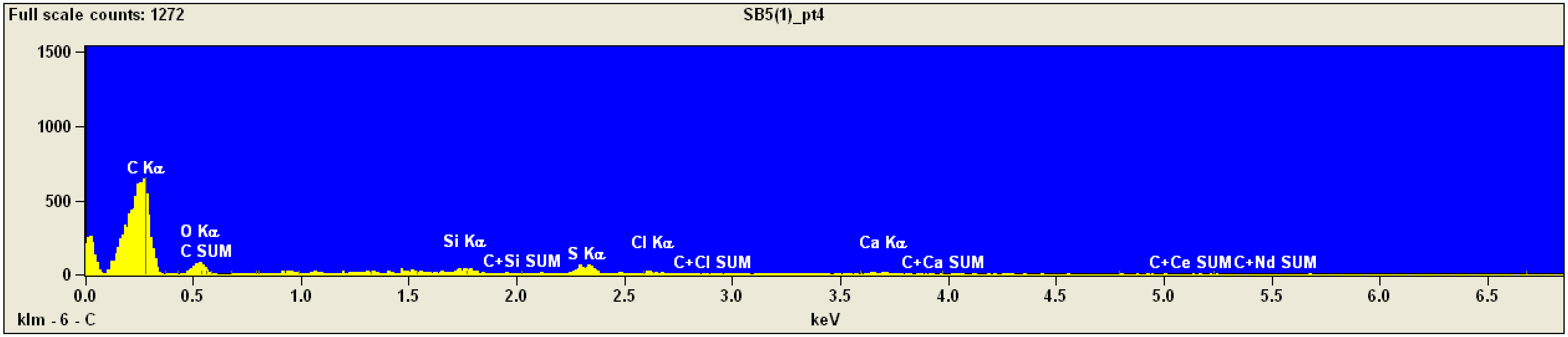


Image Name: SB5(1)

Accelerating Voltage: 20.0 kV

Magnification: 476





Project: 04-08-2015

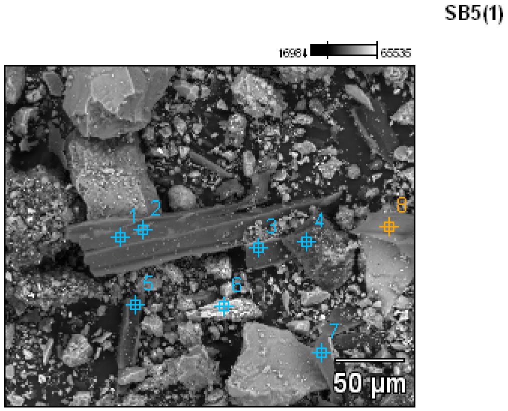
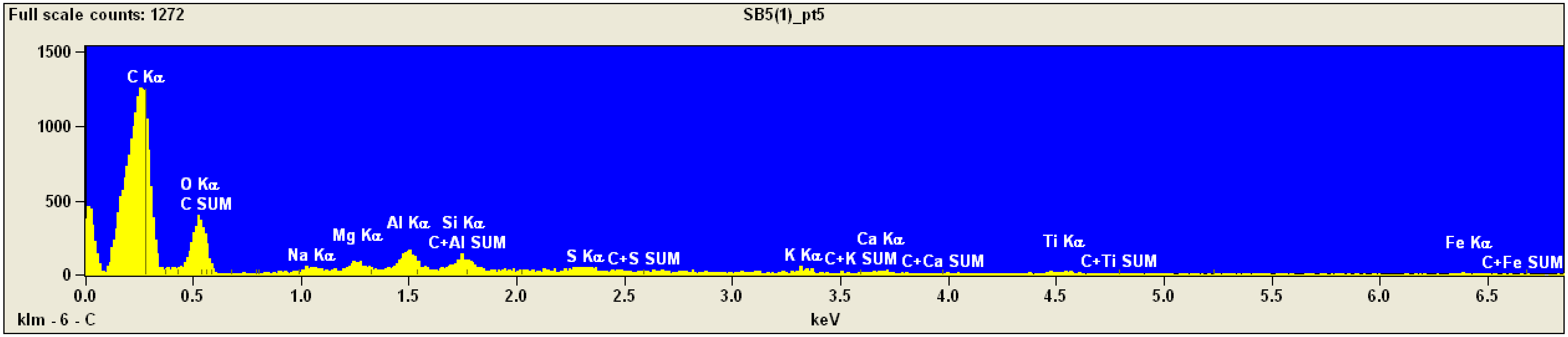
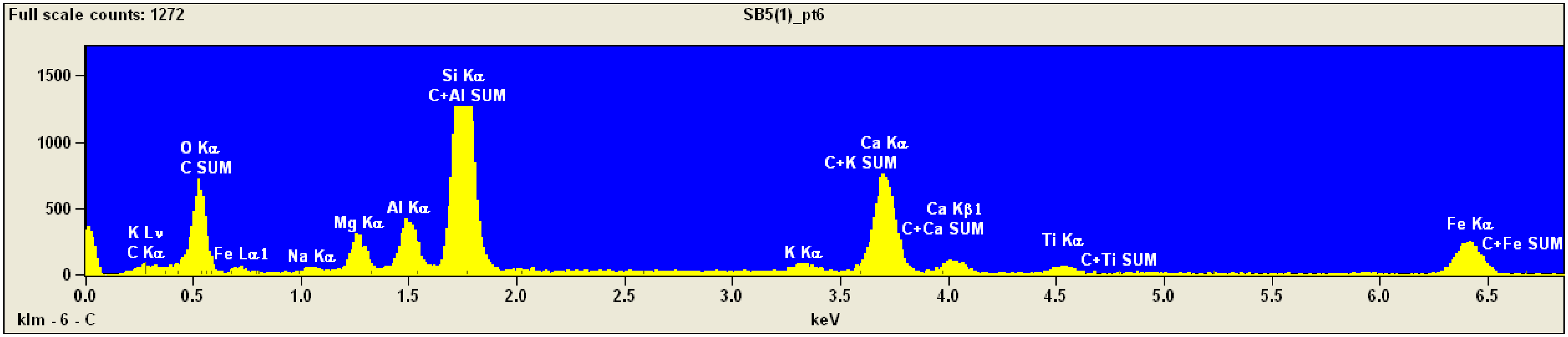


Image Name: SB5(1)

Accelerating Voltage: 20.0 kV

Magnification: 476





Project: 04-08-2015

SB5(1)

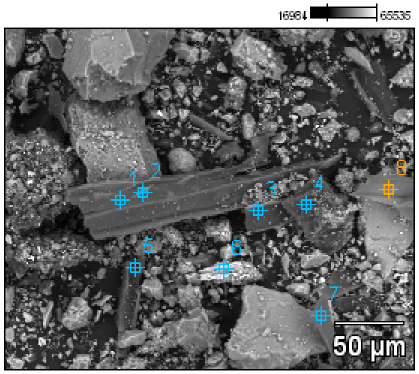
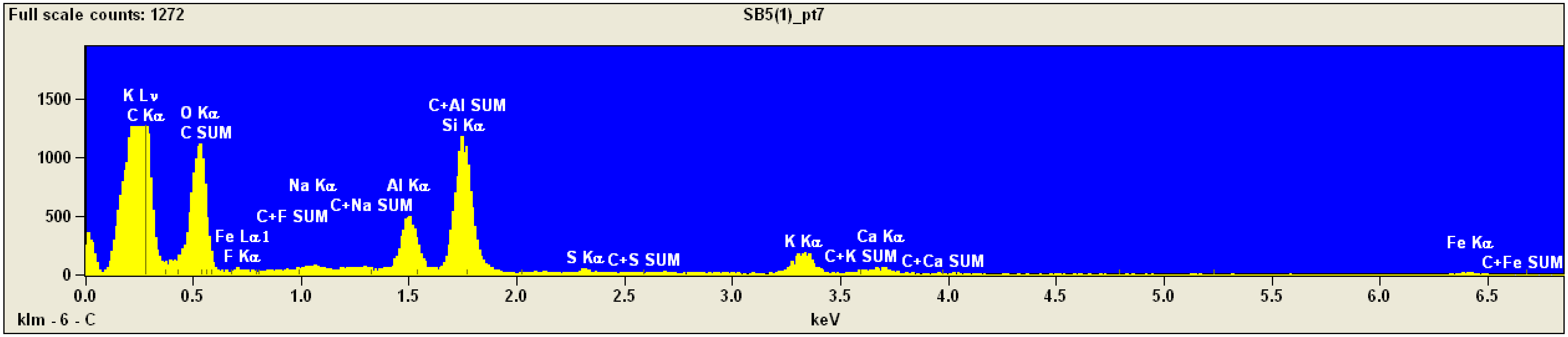
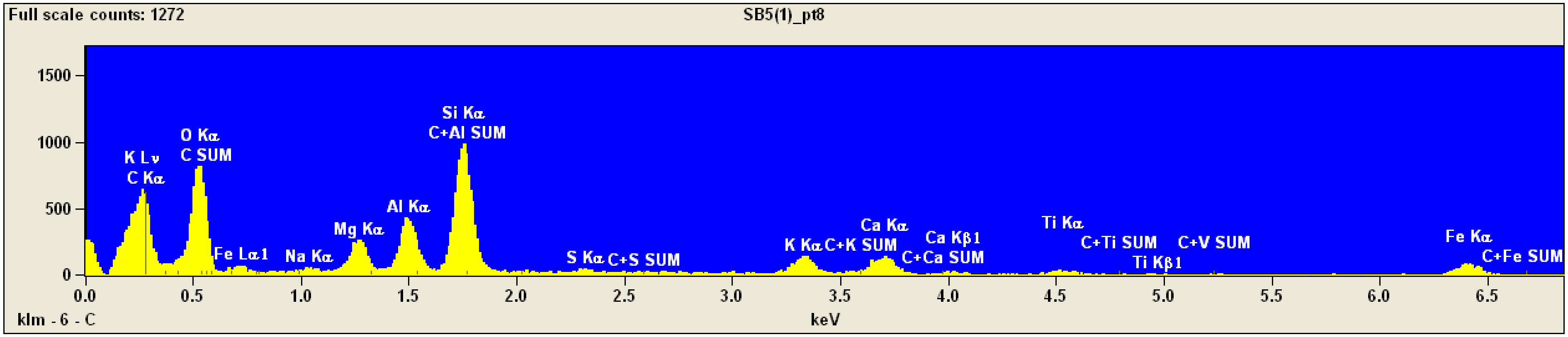


Image Name: SB5(1)

Accelerating Voltage: 20.0 kV

Magnification: 476





Project: 04-08-2015

SB5(1)

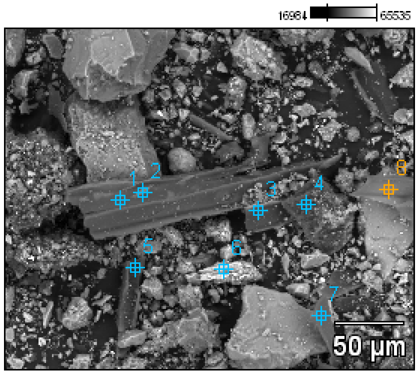


Image Name: SB5(1)

Accelerating Voltage: 20.0 kV

Magnification: 476

Weight %

	C	O	F	Na	Mg	Al	Si	S	Cl	K	Ca	Ti	Fe
SB5(1)_pt1	65.34	22.64		0.94	0.38	2.14	5.31	0.20		0.46	0.94		1.64
SB5(1)_pt2	56.19	29.01		0.70	0.52	1.82	4.42	0.25		0.27	5.63		1.19
SB5(1)_pt3	71.74	18.06			0.43	1.49	4.11	0.36		0.30	1.50		2.02
SB5(1)_pt4	84.77	11.82					0.62	1.54	0.43		0.82		
SB5(1)_pt5	72.96	21.64		0.52	0.63	1.30	0.91	0.34		0.34	0.23	0.42	0.71
SB5(1)_pt6	15.88	28.46		0.67	2.75	3.89	23.58			0.95	12.04	1.38	10.40
SB5(1)_pt7	62.39	27.70	0.50	0.36		1.93	4.97	0.14		1.27	0.30		0.44
SB5(1)_pt8	49.92	30.86		0.36	2.07	3.16	7.41	0.25		1.39	1.59	0.54	2.46

	O	F	Na	Mg	Al	Si	S	Cl	K	Ca	Ti	Fe
SB5(1)_pt1	47.22		3.95	1.58	9.32	25.15	1.03		1.94	3.82		5.99
SB5(1)_pt2	56.07		2.00	1.39	5.73	14.33	0.81		0.76	15.73		3.18
SB5(1)_pt3	46.60			2.32	8.02	23.41	2.19		1.49	7.21		8.76
SB5(1)_pt4	52.35					8.41	21.05	6.96		11.23		
SB5(1)_pt5	61.59		3.82	4.76	9.98	7.43	2.53		2.10	1.41	2.46	3.93
SB5(1)_pt6	29.67		0.87	3.50	4.96	30.23			1.20	15.09	1.73	12.74
SB5(1)_pt7	53.12	6.58	1.54		8.03	22.17	0.66		5.12	1.21		1.58
SB5(1)_pt8	47.08		0.93	5.55	8.82	21.79	0.76		3.67	4.13	1.34	5.91

Project: 04-08-2015

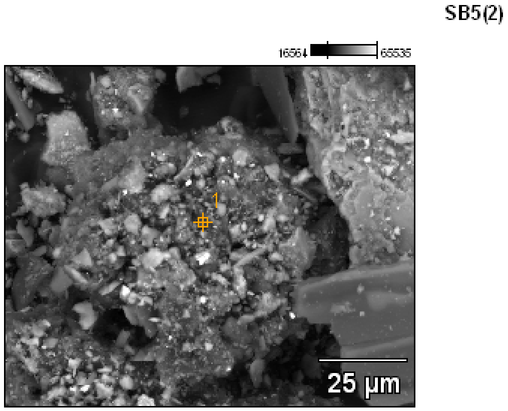
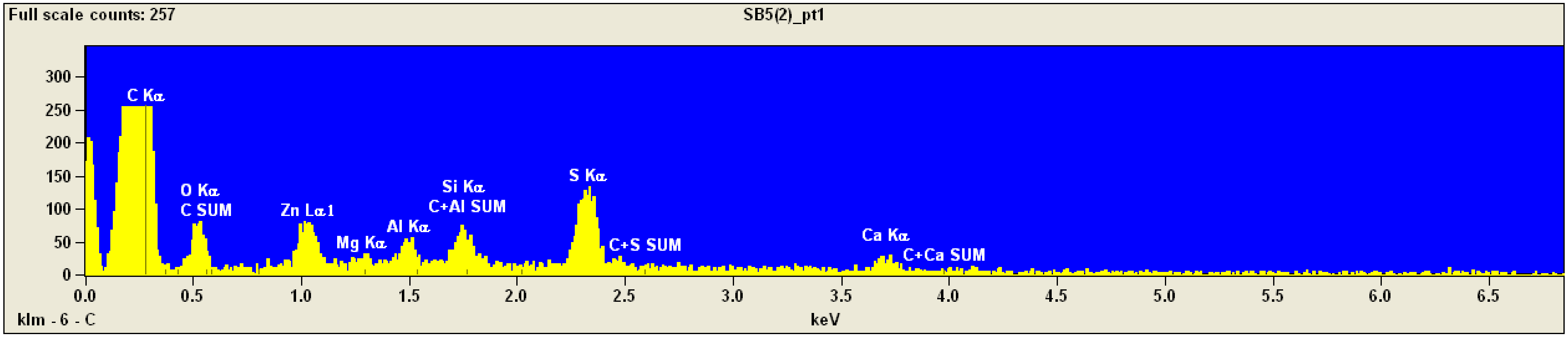


Image Name: SB5(2)

Accelerating Voltage: 20.0 kV

Magnification: 1234



Project: 04-08-2015

SB5(2)

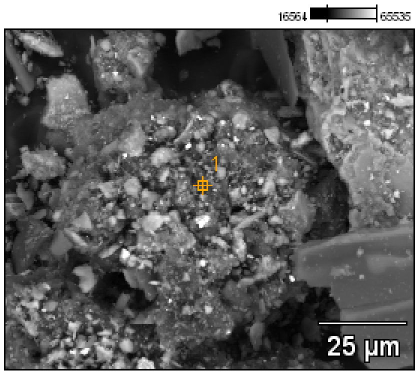


Image Name: SB5(2)

Accelerating Voltage: 20.0 kV

Magnification: 1234

Weight %

	C	**O**	**Mg**	**Al**	**Si**	**S**	**Ca**	**Zn**
SB5(2)_pt1	83.75	7.25	0.23	0.67	1.04	3.06	0.70	3.30

	O	**Mg**	**Al**	**Si**	**S**	**Ca**	**Zn**
SB5(2)_pt1	30.60	2.28	6.42	9.81	26.14	5.16	19.60

Project: 04-08-2015

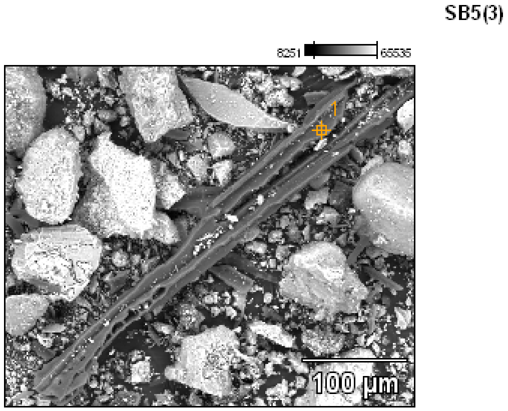
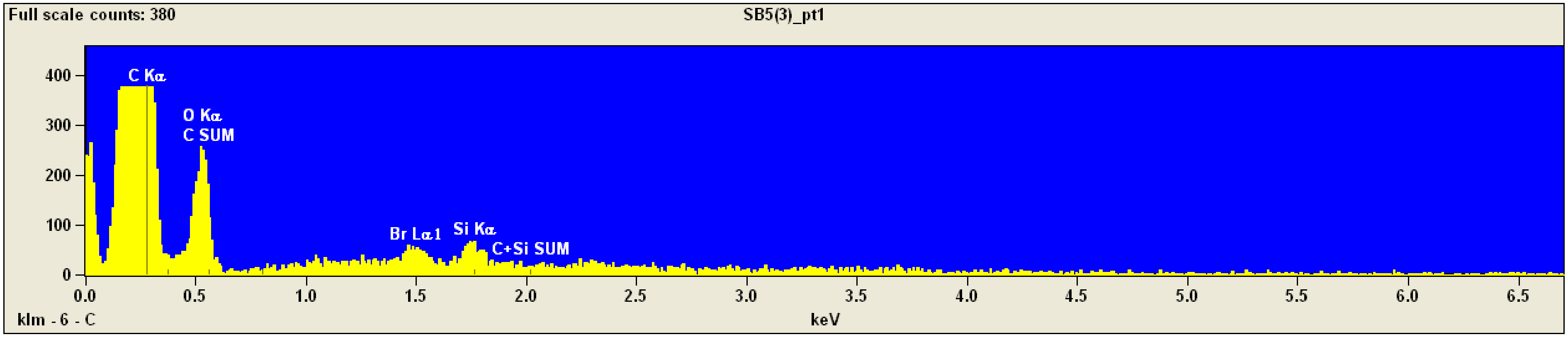


Image Name: SB5(3)

Accelerating Voltage: 20.0 kV

Magnification: 367



Project: 04-08-2015

SB5(3)

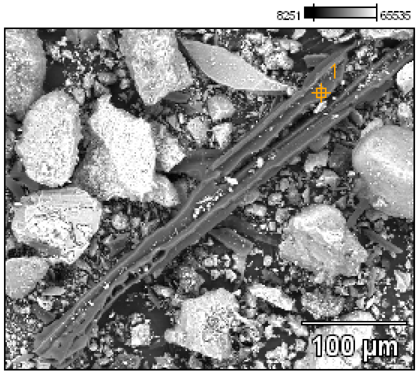


Image Name: SB5(3)

Accelerating Voltage: 20.0 kV

Magnification: 367

Weight %

	C	*O*	*Si*	*Br*
SB5(3)_pt1	77.93	19.86	0.79	1.42

	O	*Si*	*Br*
SB5(3)_pt1	70.25	12.48	17.28

Project: 04-08-2015

SB5(4)

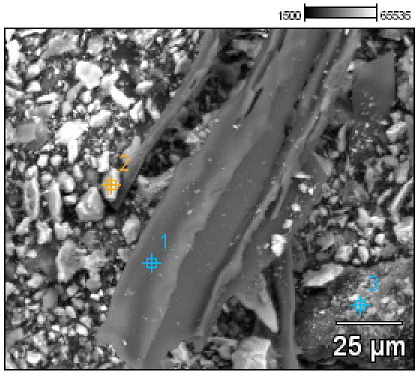
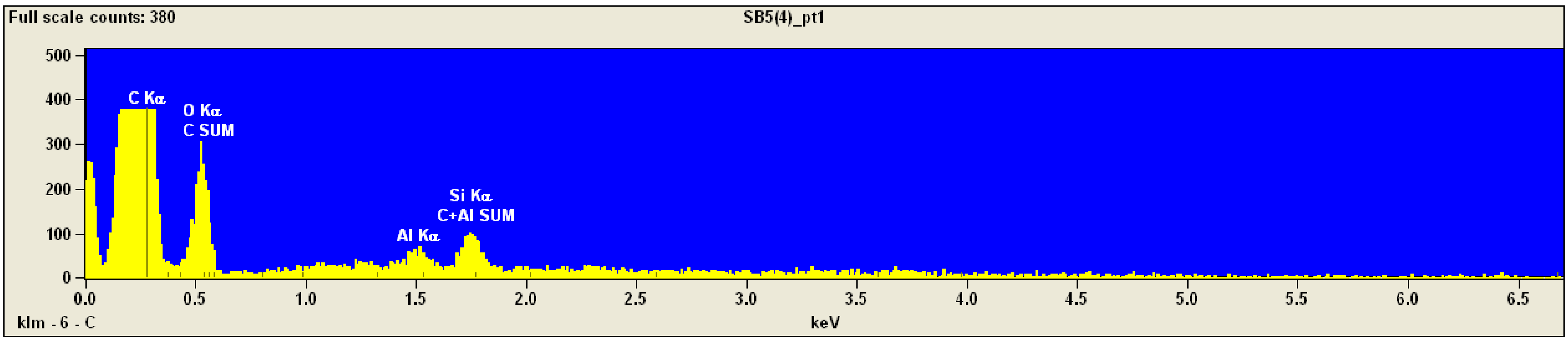
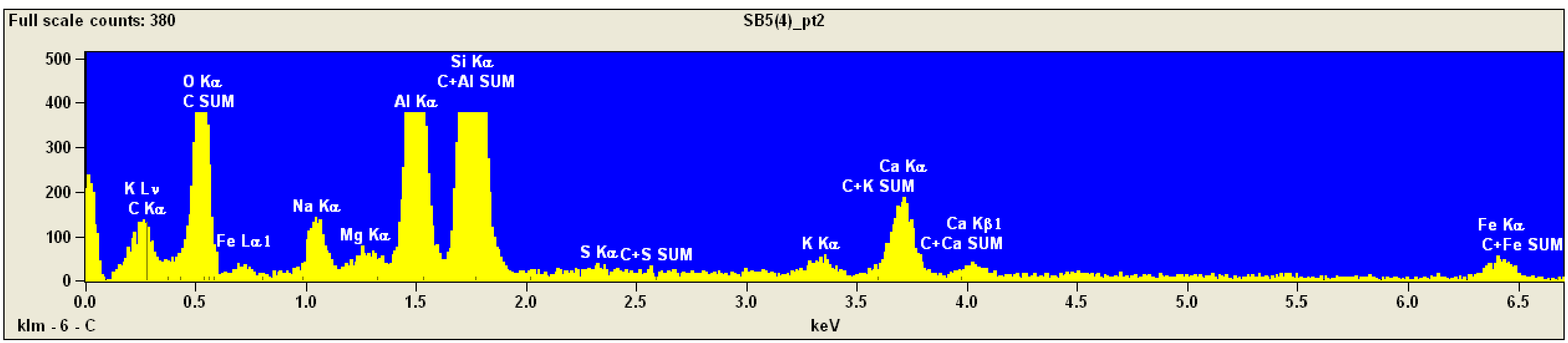


Image Name: SB5(4)

Accelerating Voltage: 20.0 kV

Magnification: 920





Project: 04-08-2015

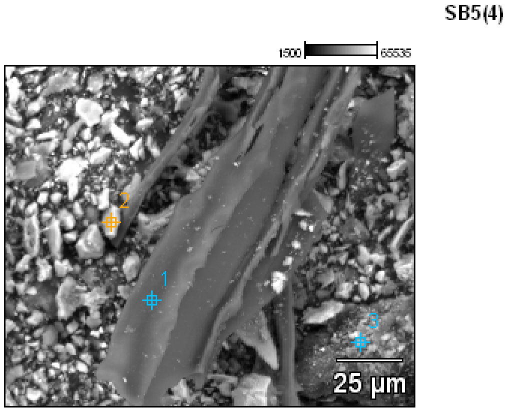
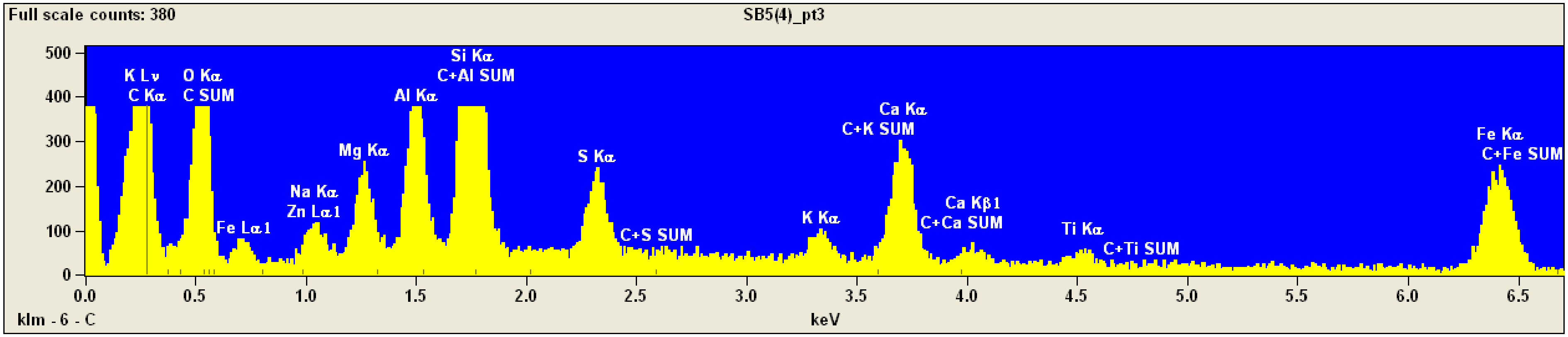


Image Name: SB5(4)

Accelerating Voltage: 20.0 kV

Magnification: 920



Project: 04-08-2015

SB5(4)

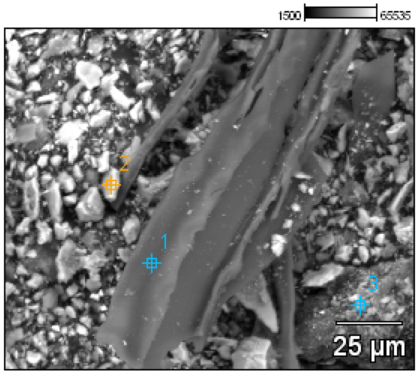


Image Name: SB5(4)

Accelerating Voltage: 20.0 kV

Magnification: 920

Weight %

	C	O	Na	Mg	Al	Si	S	K	Ca	Ti	Fe	Zn
SB5(4)_pt1	78.02	20.31			0.54	1.13						
SB5(4)_pt2	29.89	28.30	3.31	0.38	9.00	21.61	0.21	0.74	4.09		2.48	
SB5(4)_pt3	48.82	20.61	1.17	1.71	2.97	8.69	1.72	0.67	3.23	0.58	7.96	1.86

	O	Na	Mg	Al	Si	S	K	Ca	Ti	Fe	Zn
SB5(4)_pt1	73.15			8.15	18.70						
SB5(4)_pt2	33.40	4.92	0.58	13.83	35.53	0.37	1.19	6.46		3.70	
SB5(4)_pt3	31.20	2.83	4.12	7.20	21.37	4.32	1.46	6.92	1.21	15.74	3.63

Project: 04-08-2015

SB5(5)

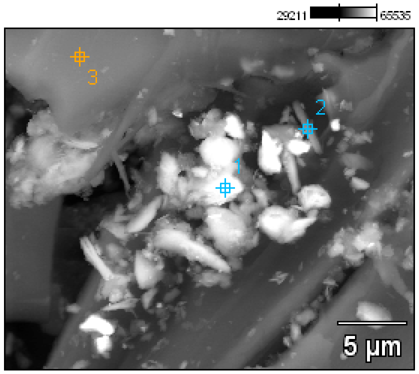
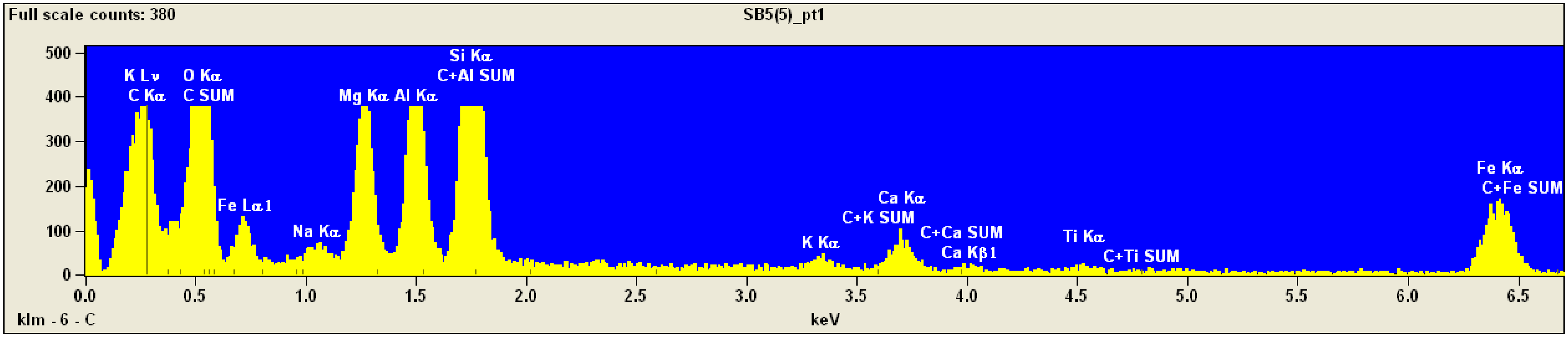
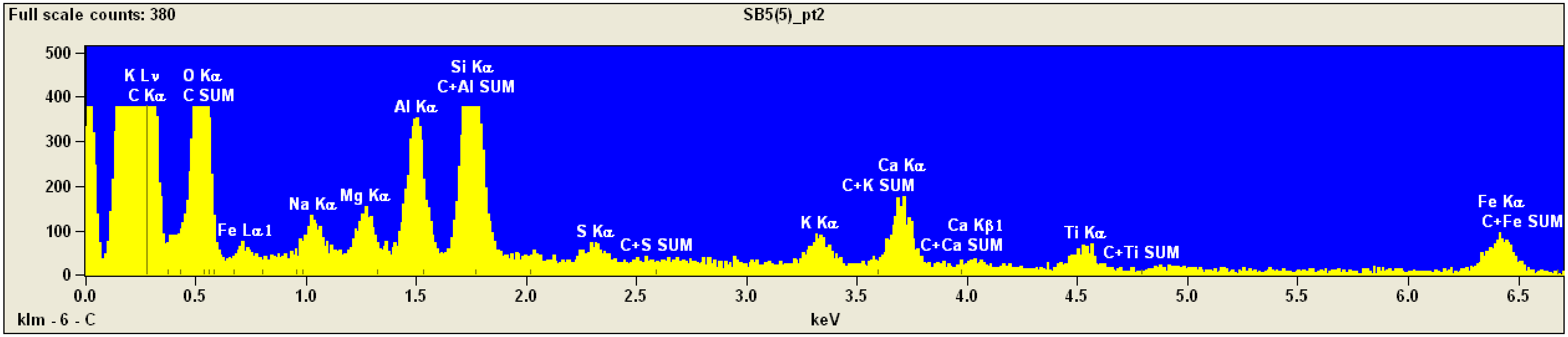


Image Name: SB5(5)

Accelerating Voltage: 20.0 kV

Magnification: 4773





Project: 04-08-2015

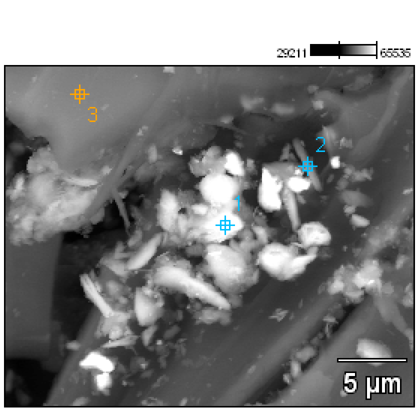
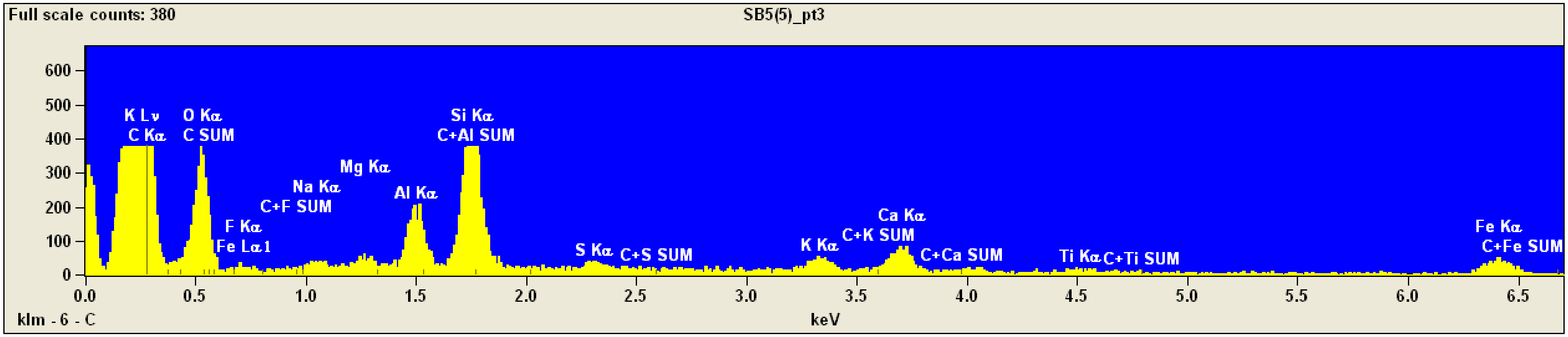


Image Name: SB5(5)

Accelerating Voltage: 20.0 kV

Magnification: 4773



Project: 04-08-2015

SB5(5)

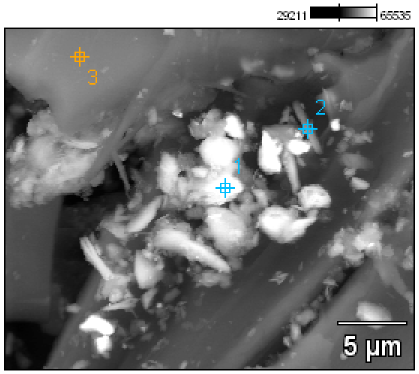


Image Name: SB5(5)

Accelerating Voltage: 20.0 kV

Magnification: 4773

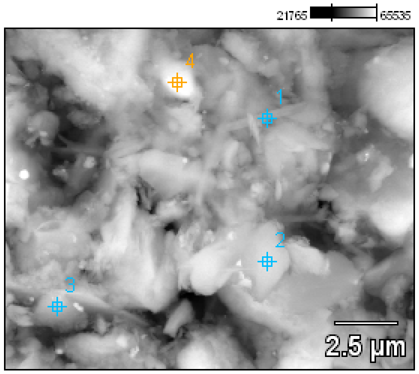
Weight %

	C	O	F	Na	Mg	Al	Si	S	K	Ca	Ti	Fe
SB5(5)_pt1	42.23	32.72		0.66	3.80	4.29	8.59		0.30	1.02	0.26	6.13
SB5(5)_pt2	67.91	20.42		1.05	0.56	1.72	3.42	0.29	0.53	1.16	0.79	2.15
SB5(5)_pt3	68.14	21.65	0.20	0.44	0.23	1.42	4.00	0.25	0.56	1.03	0.19	1.90

	O	F	Na	Mg	Al	Si	S	K	Ca	Ti	Fe
SB5(5)_pt1	40.75		1.58	8.71	10.48	22.23		0.70	2.27	0.56	12.72
SB5(5)_pt2	50.11		4.28	2.60	8.00	16.46	1.39	2.10	4.48	2.94	7.64
SB5(5)_pt3	44.63	8.24	2.26	1.17	7.00	20.41	1.35	2.45	4.39	0.76	7.34

Project: 04-08-2015

SB5(6)



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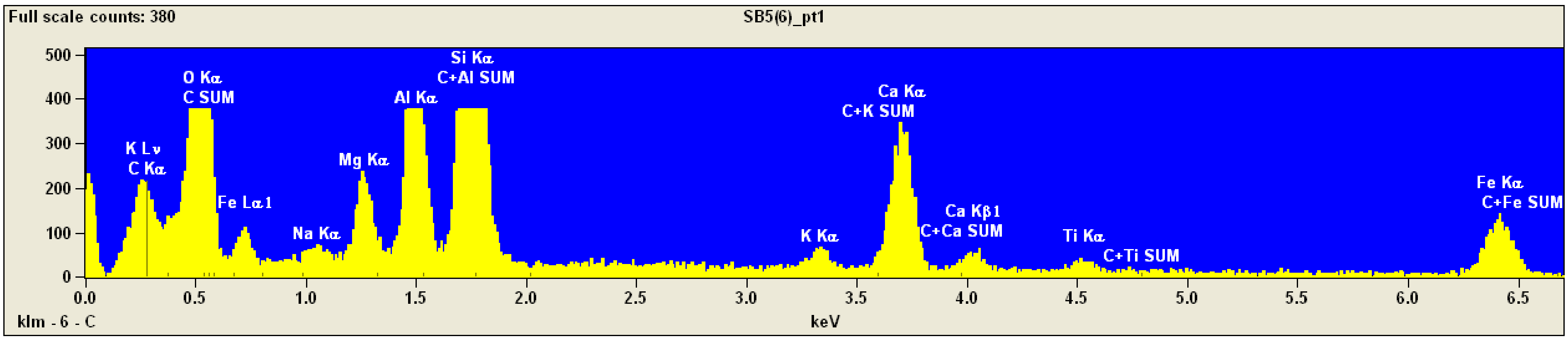
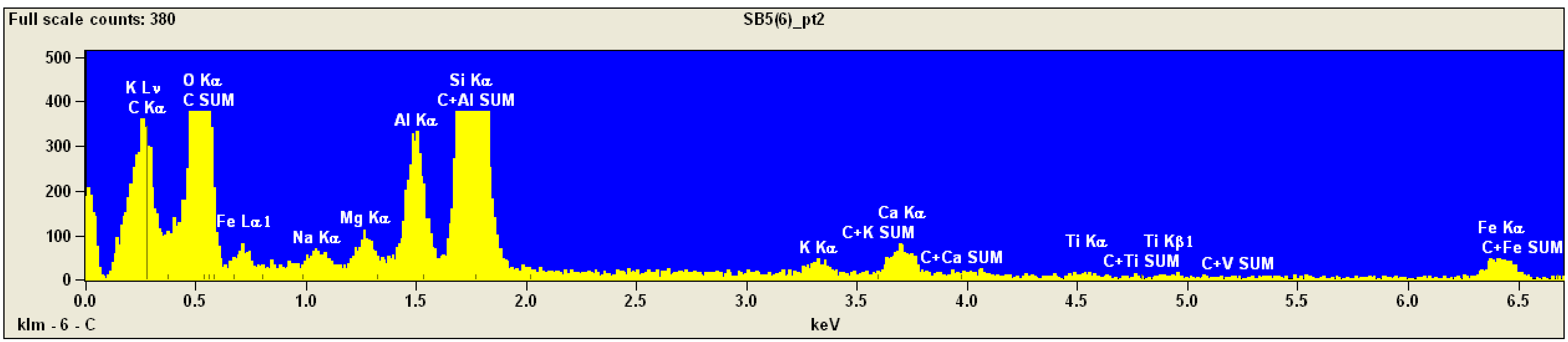
Accelerating Voltage: 20.0 kV

Magnification: 8754





Project: 04-08-2015

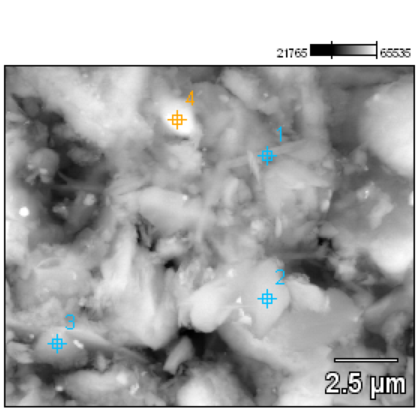
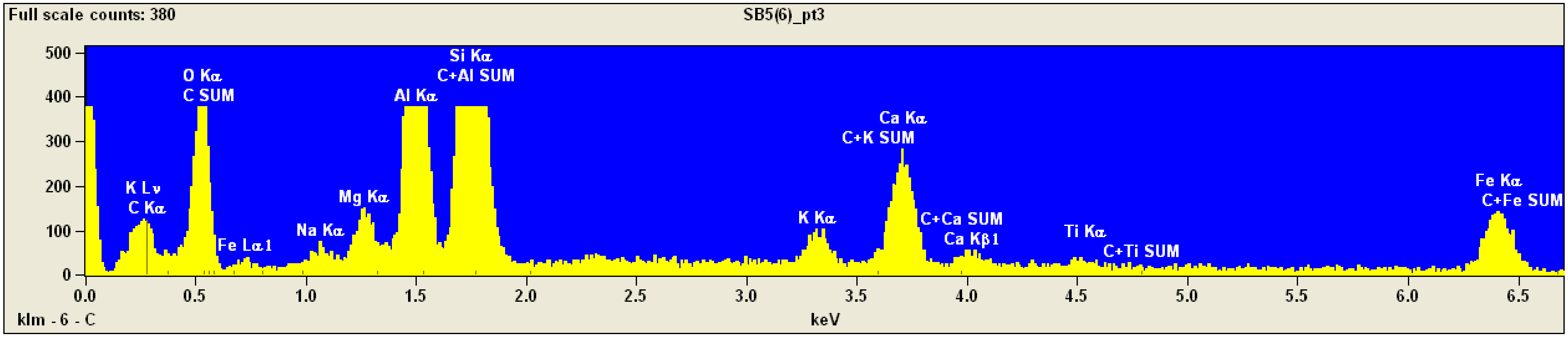
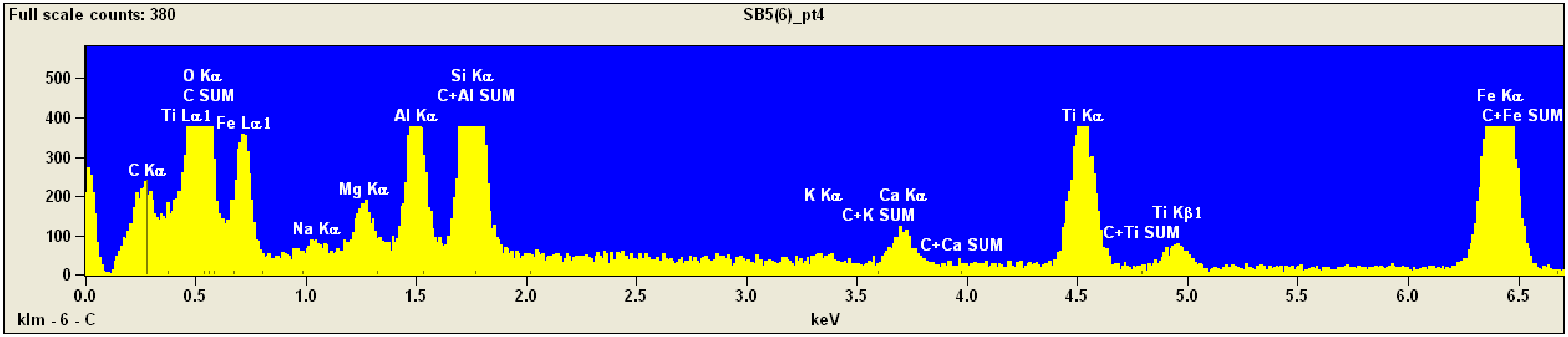


Image Name: SB5(6)

Accelerating Voltage: 20.0 kV

Magnification: 8754





Project: 04-08-2015

SB5(6)

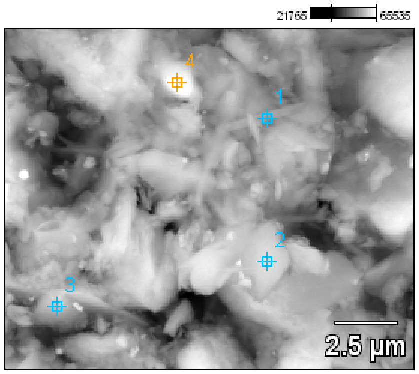


Image Name: SB5(6)

Accelerating Voltage: 20.0 kV

Magnification: 8754

Weight %

	C	*O*	*Na*	*Mg*	*Al*	*Si*	*K*	*Ca*	*Ti*	*Fe*
SB5(6)_pt1	27.73	40.57	0.47	1.62	4.82	14.64	0.55	4.48	0.54	4.60
SB5(6)_pt2	39.45	37.36	0.60	0.56	2.24	16.46	0.36	0.95	0.18	1.84
SB5(6)_pt3	31.61	22.30	0.58	1.04	9.68	22.03	1.24	4.73	0.34	6.44
SB5(6)_pt4	23.17	34.55	0.53	1.30	3.51	8.97	0.17	0.97	6.41	20.41

	O	*Na*	*Mg*	*Al*	*Si*	*K*	*Ca*	*Ti*	*Fe*
SB5(6)_pt1	46.58	0.90	2.74	8.06	25.35	0.91	7.35	0.87	7.24
SB5(6)_pt2	48.33	1.29	1.21	4.86	37.14	0.83	2.12	0.39	3.81
SB5(6)_pt3	25.78	0.91	1.62	15.09	36.84	2.02	7.54	0.53	9.68
SB5(6)_pt4	36.40	0.92	2.11	5.67	14.58	0.25	1.43	9.32	29.33

Project: 04-08-2015

SB5(7)

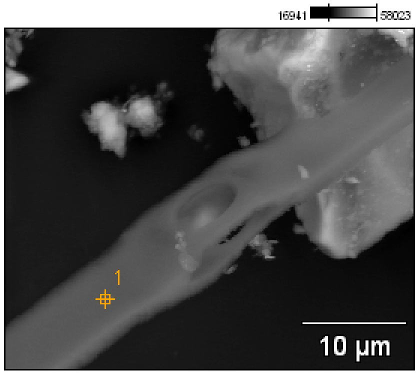
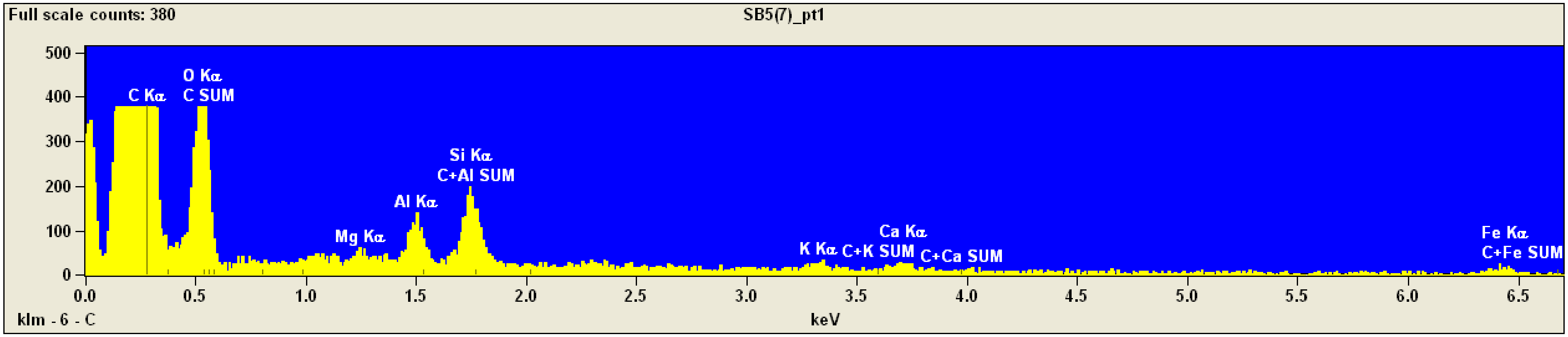


Image Name: SB5(7)

Accelerating Voltage: 20.0 kV

Magnification: 3681



Project: 04-08-2015

SB5(7)

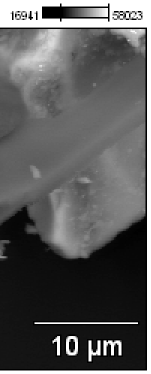


Image Name: SB5(7)

Accelerating Voltage: 20.0 kV

Magnification: 3681

Weight %

	C	O	Mg	Al	Si	K	Ca	Fe
SB5(7)_pt1	78.38	18.92	0.10	0.56	1.15	0.16	0.21	0.52

	O	Mg	Al	Si	K	Ca	Fe
SB5(7)_pt1	68.25	1.30	6.92	14.82	1.70	2.14	4.87

Project: 04-08-2015

SB5(8)

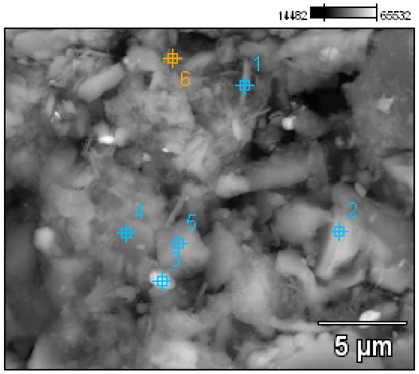
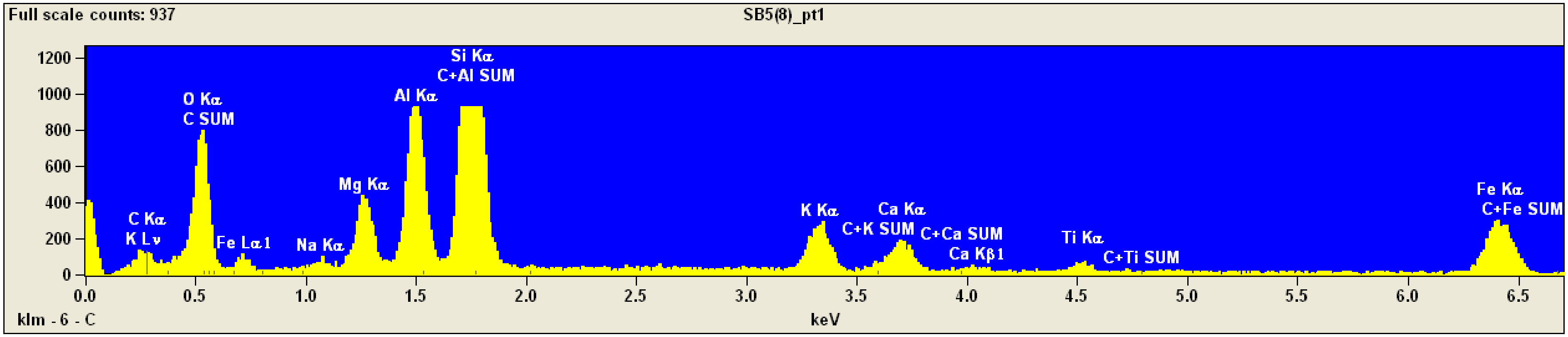
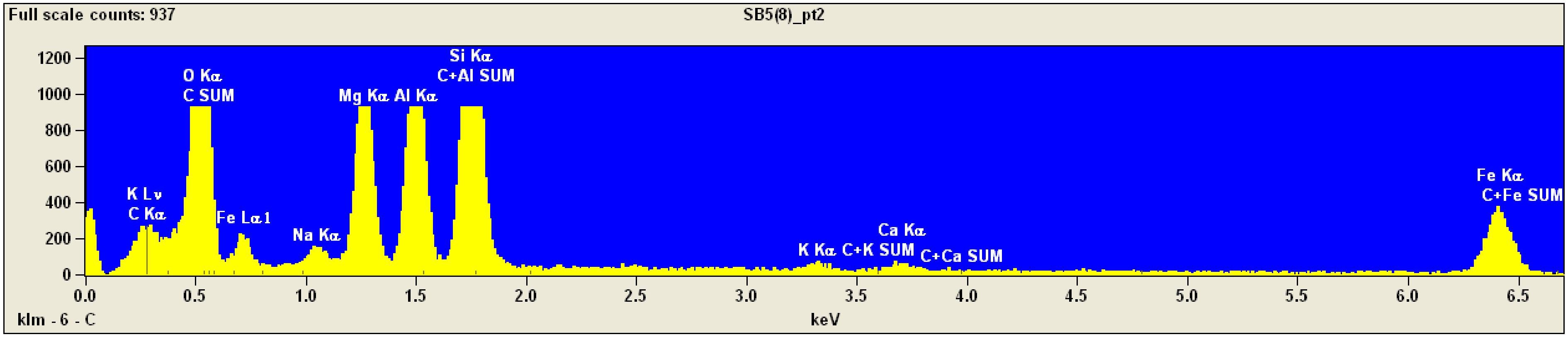


Image Name: SB5(8)

Accelerating Voltage: 20.0 kV

Magnification: 6190





Project: 04-08-2015

SB5(8)

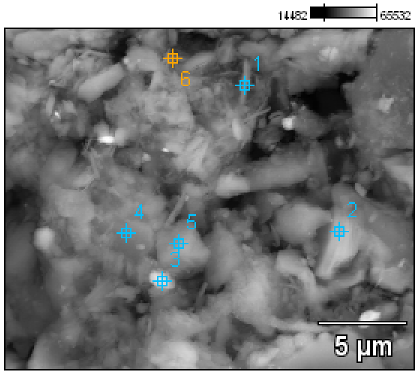
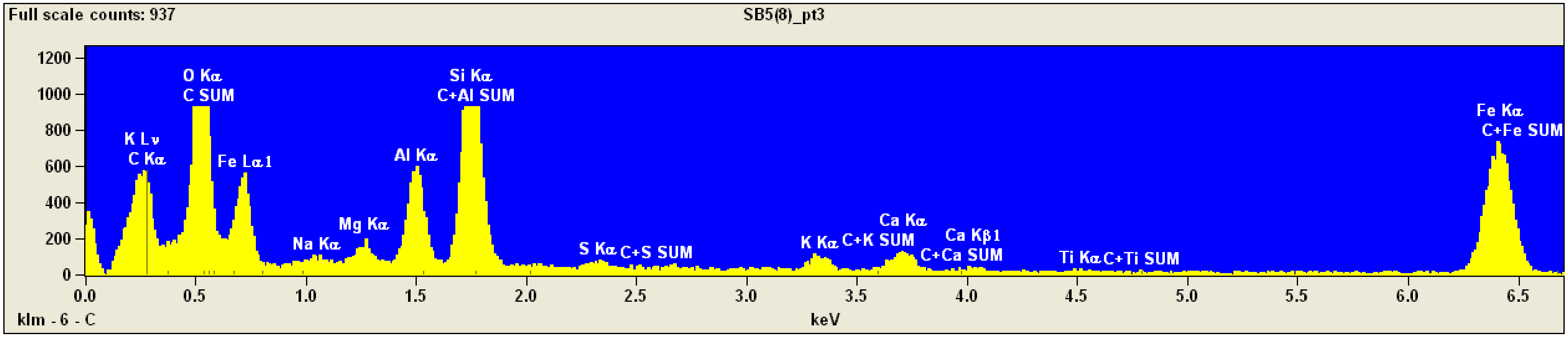
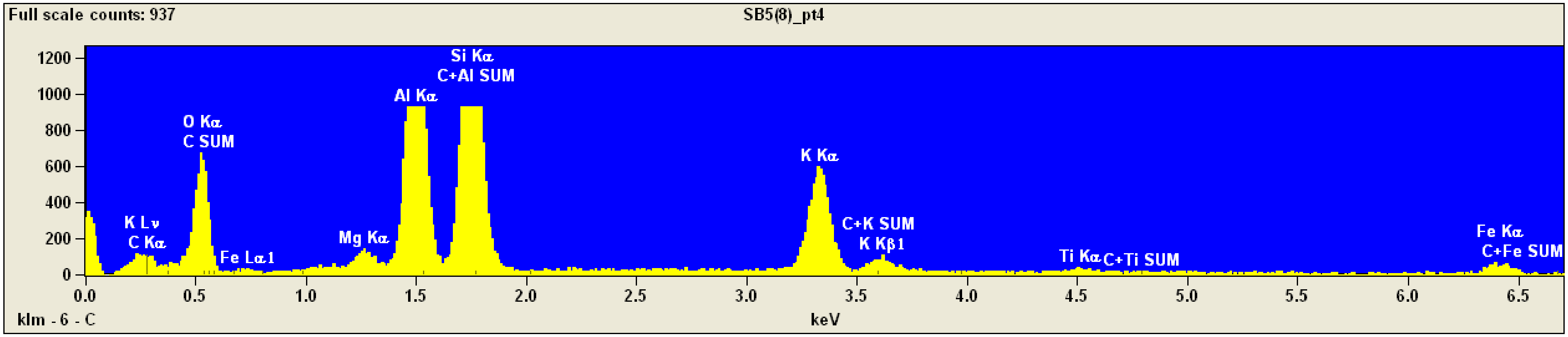


Image Name: SB5(8)

Accelerating Voltage: 20.0 kV

Magnification: 6190





Project: 04-08-2015

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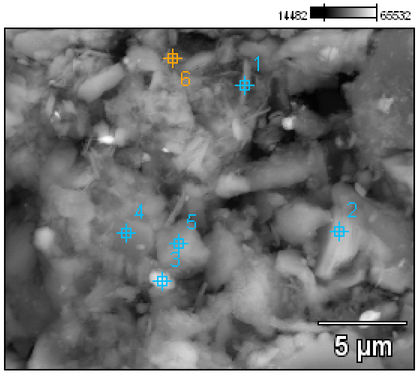
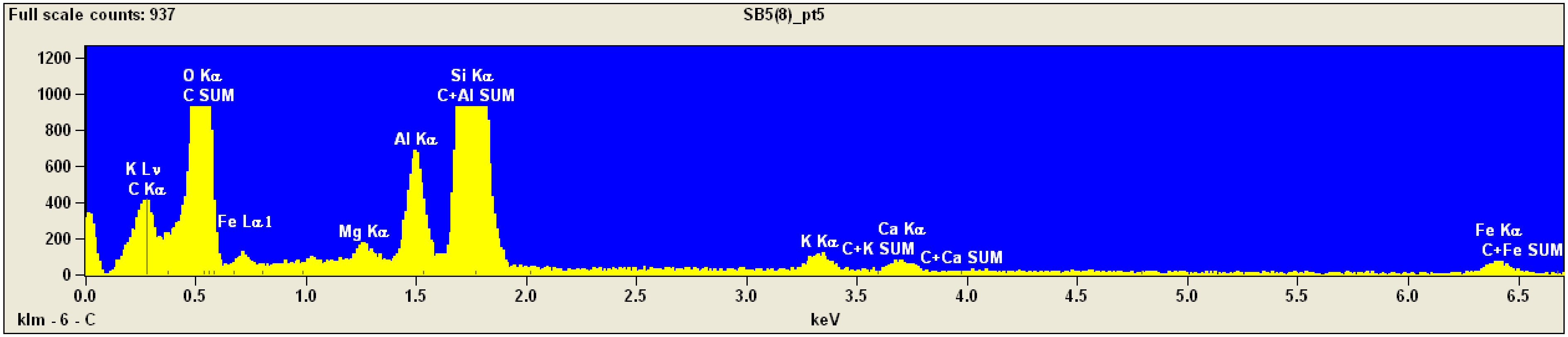
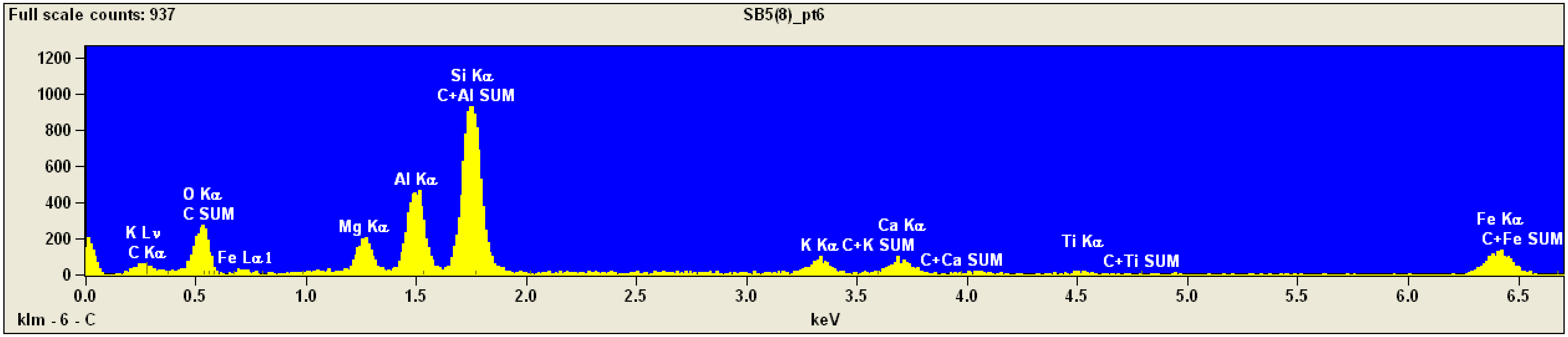


Image Name: SB5(8)

Accelerating Voltage: 20.0 kV

Magnification: 6190





Project: 04-08-2015

SB5(8)

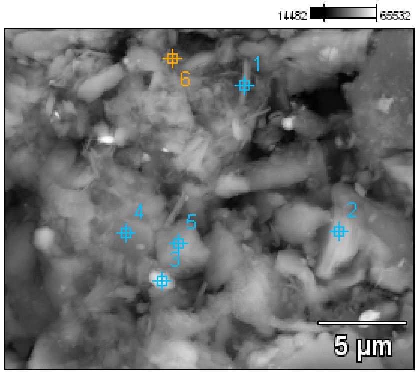


Image Name: SB5(8)

Accelerating Voltage: 20.0 kV

Magnification: 6190

Weight %

	C	O	Na	Mg	Al	Si	S	K	Ca	Ti	Fe
SB5(8)_pt1	21.42	26.46	0.38	3.50	8.31	22.56		3.47	2.29	0.76	10.86
SB5(8)_pt2	24.85	37.10	1.04	6.88	8.17	13.61		0.33	0.34		7.68
SB5(8)_pt3	38.38	29.51	0.61	0.76	3.43	8.37	0.30	0.53	0.99	0.15	16.98
SB5(8)_pt4	25.52	26.54		0.67	14.55	21.88		8.27		0.42	2.15
SB5(8)_pt5	30.51	41.37		0.38	2.53	22.90		0.66	0.46		1.18
SB5(8)_pt6	25.83	22.39		3.65	9.44	21.78		2.22	2.48	0.48	11.74

	O	Na	Mg	Al	Si	S	K	Ca	Ti	Fe
SB5(8)_pt1	27.70	0.60	4.80	11.47	32.17		4.82	3.15	1.02	14.27
SB5(8)_pt2	38.46	1.59	10.57	13.33	23.45		0.54	0.54		11.53
SB5(8)_pt3	33.95	1.33	1.74	7.74	19.32	0.70	1.09	2.00	0.28	31.85
SB5(8)_pt4	30.04		0.92	20.20	33.05		12.19		0.61	2.99
SB5(8)_pt5	49.22		0.66	4.43	41.51		1.25	0.86		2.06
SB5(8)_pt6	23.54		5.24	13.85	33.50		3.29	3.63	0.68	16.27

Project: 04-08-2015

SB5(9)

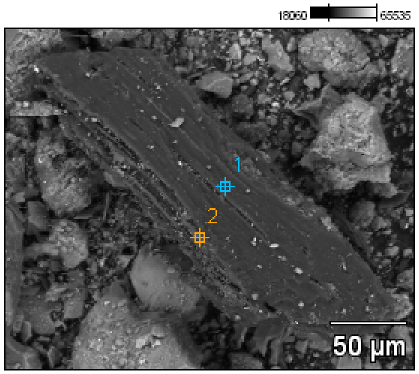
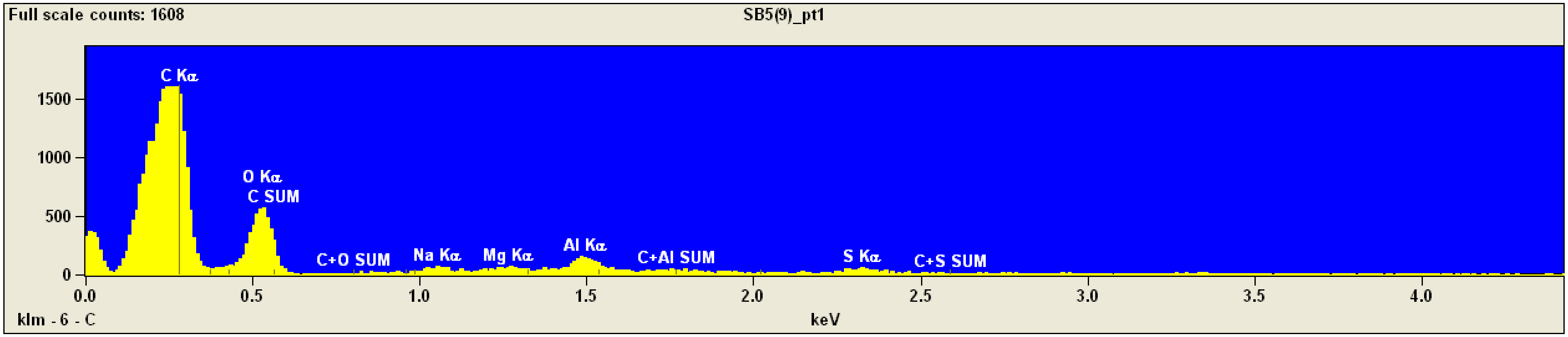
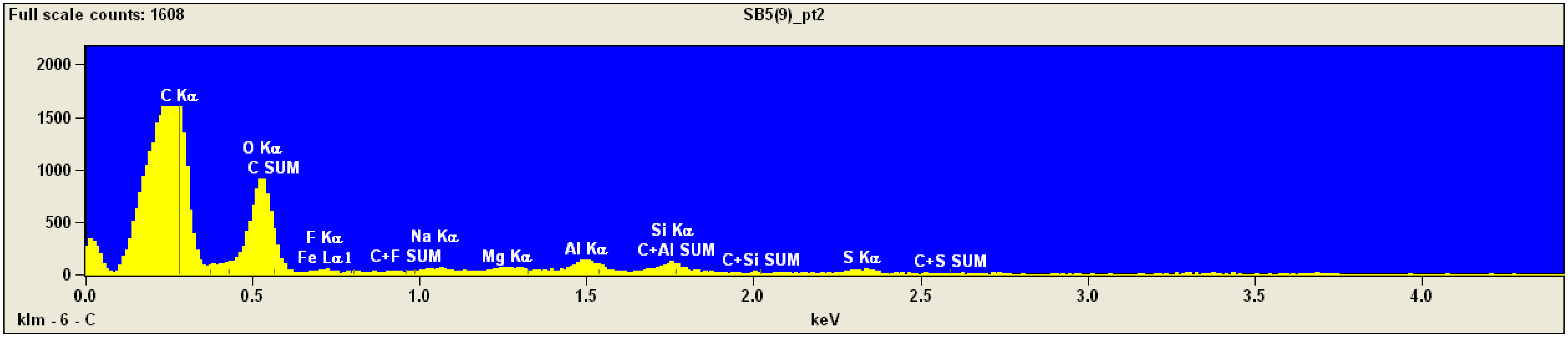


Image Name: SB5(9)

Accelerating Voltage: 20.0 kV

Magnification: 529





Project: 04-08-2015

SB5(9)

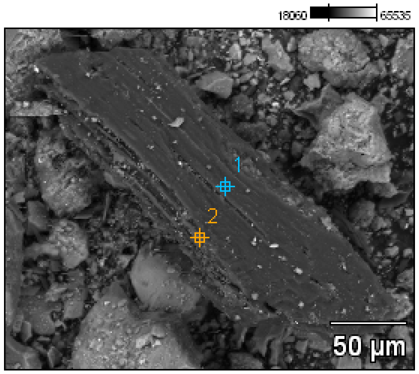


Image Name: SB5(9)

Accelerating Voltage: 20.0 kV

Magnification: 529

Weight %

	C	***O***	***F***	***Na***	***Mg***	***Al***	***Si***	***S***	***Fe***
SB5(9)_pt1	72.69	25.30		0.65	0.21	0.83		0.32	
SB5(9)_pt2	67.49	29.60	0.00	0.50	0.24	0.69	0.58	0.28	0.62

	O	***F***	***Na***	***Mg***	***Al***	***Si***	***S***	***Fe***
SB5(9)_pt1	72.06		8.50	3.10	12.10		4.24	
SB5(9)_pt2	61.79	11.77	4.77	2.42	6.69	5.79	2.48	4.28

Project: 04-08-2015

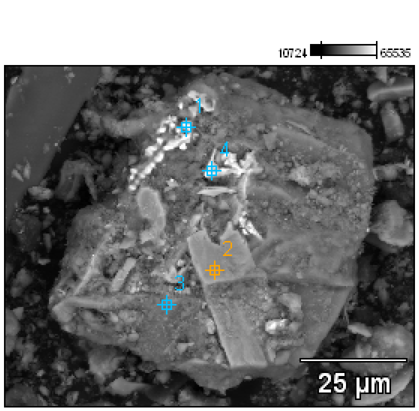
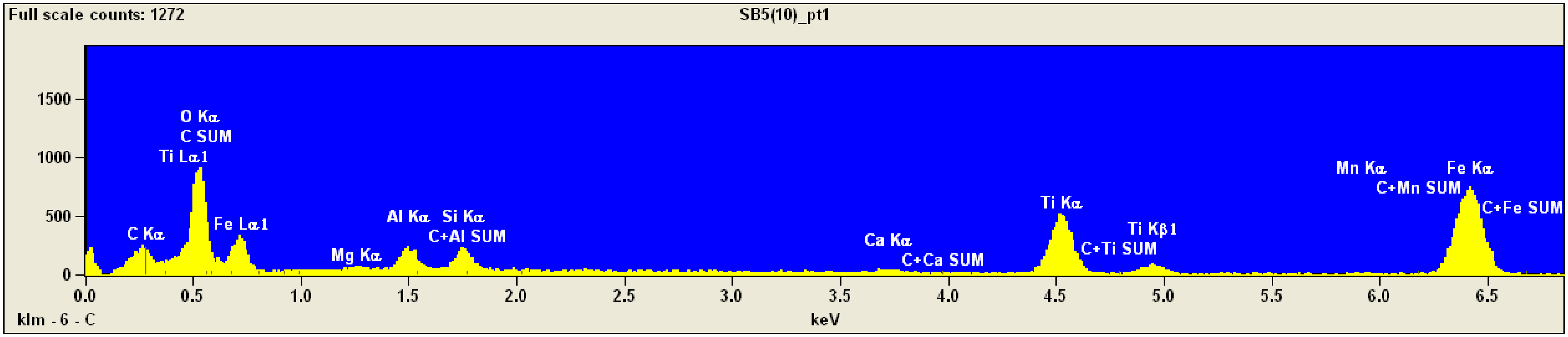
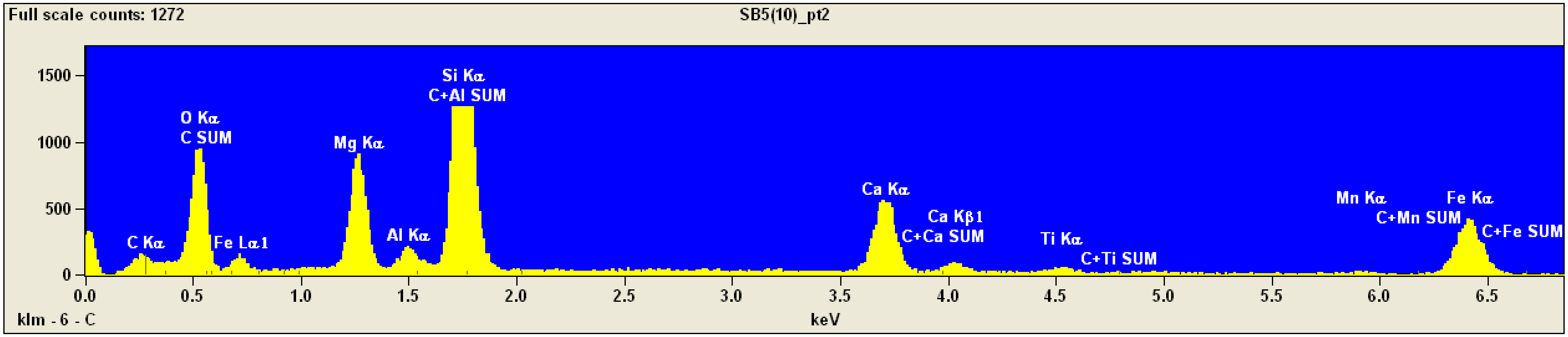


Image Name: SB5(10)

Accelerating Voltage: 20.0 kV

Magnification: 1495





Project: 04-08-2015

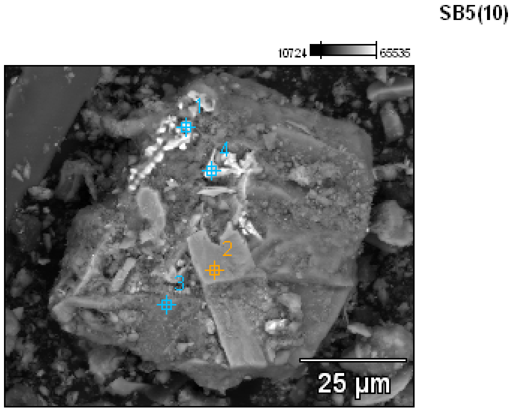
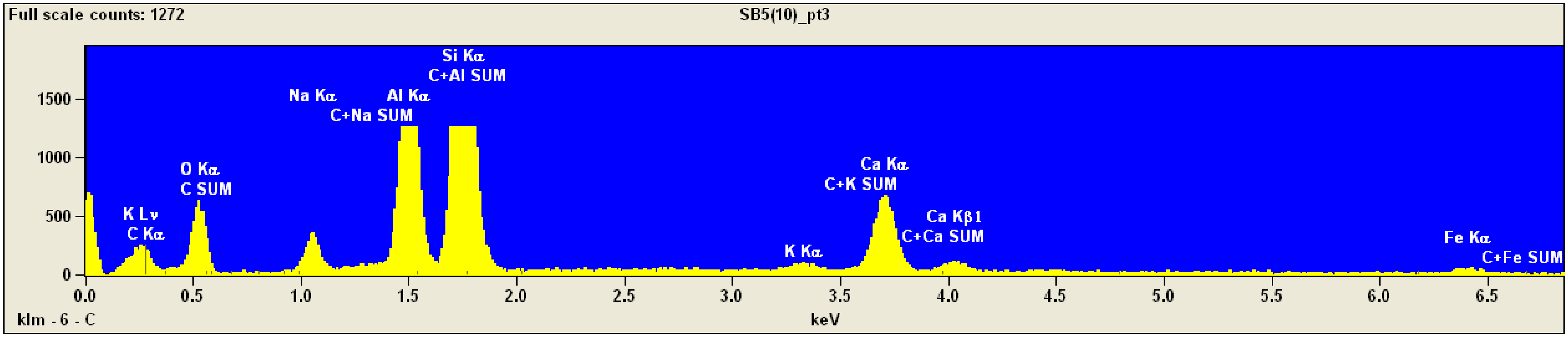
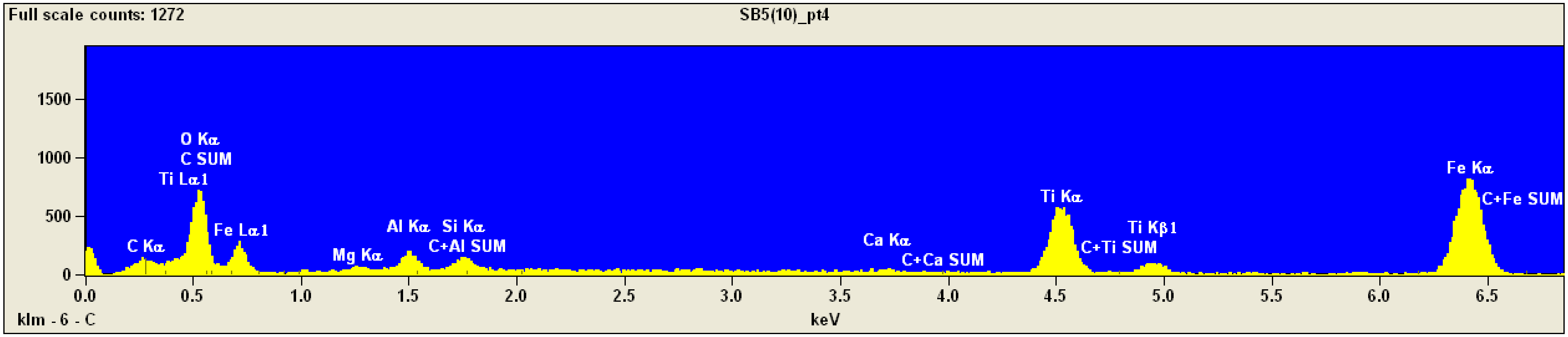


Image Name: SB5(10)

Accelerating Voltage: 20.0 kV

Magnification: 1495





Project: 04-08-2015

SB5(10)

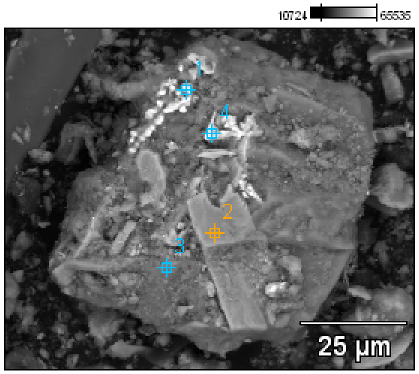


Image Name: SB5(10)

Accelerating Voltage: 20.0 kV

Magnification: 1495

Weight %

	C	***O***	***Na***	***Mg***	***Al***	***Si***	***K***	***Ca***	***Ti***	***Mn***	***Fe***
SB5(10)_pt1	25.06	29.84		0.49	2.36	2.11		0.32	10.24	0.46	29.13
SB5(10)_pt2	20.76	28.49		7.54	1.17	21.36		7.02	0.72	0.40	12.52
SB5(10)_pt3	31.69	18.36	3.05		11.53	26.63	0.58	7.15			1.00
SB5(10)_pt4	19.53	26.92		0.56	2.15	1.44		0.25	13.44		35.71

	O	***Na***	***Mg***	***Al***	***Si***	***K***	***Ca***	***Ti***	***Mn***	***Fe***
SB5(10)_pt1	33.91		0.83	3.97	3.51		0.47	14.78	0.66	41.85
SB5(10)_pt2	30.05		10.40	1.67	30.27		9.58	0.98	0.53	16.51
SB5(10)_pt3	23.08	4.30		16.92	42.32	0.91	11.00			1.46
SB5(10)_pt4	26.90		0.88	3.32	2.20		0.34	18.19		48.18

Project: 04-08-2015

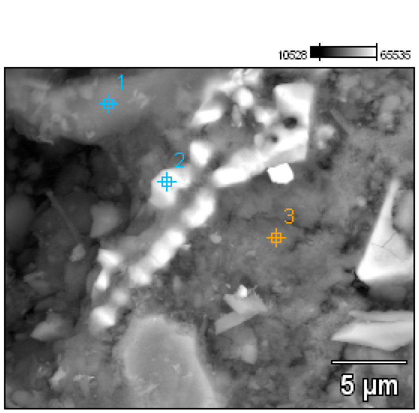
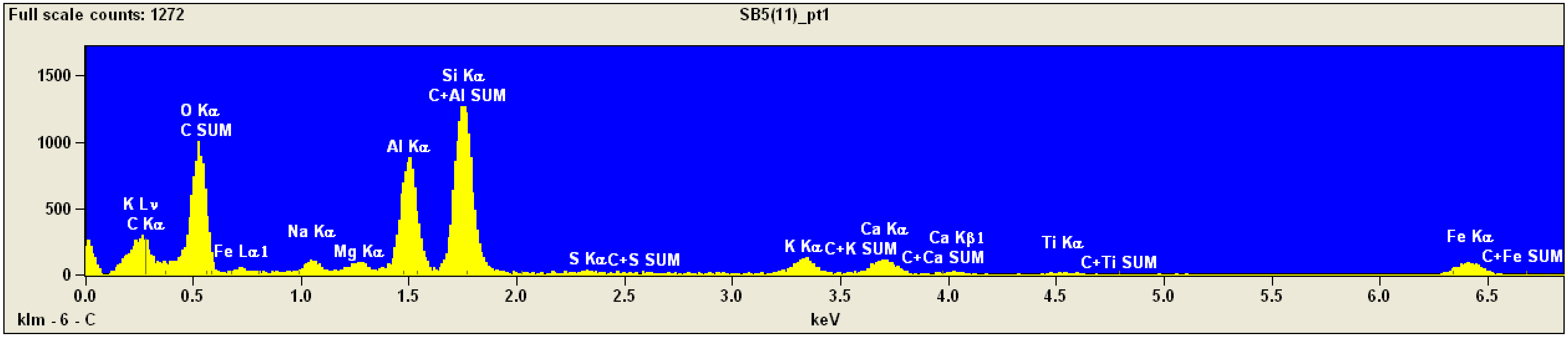
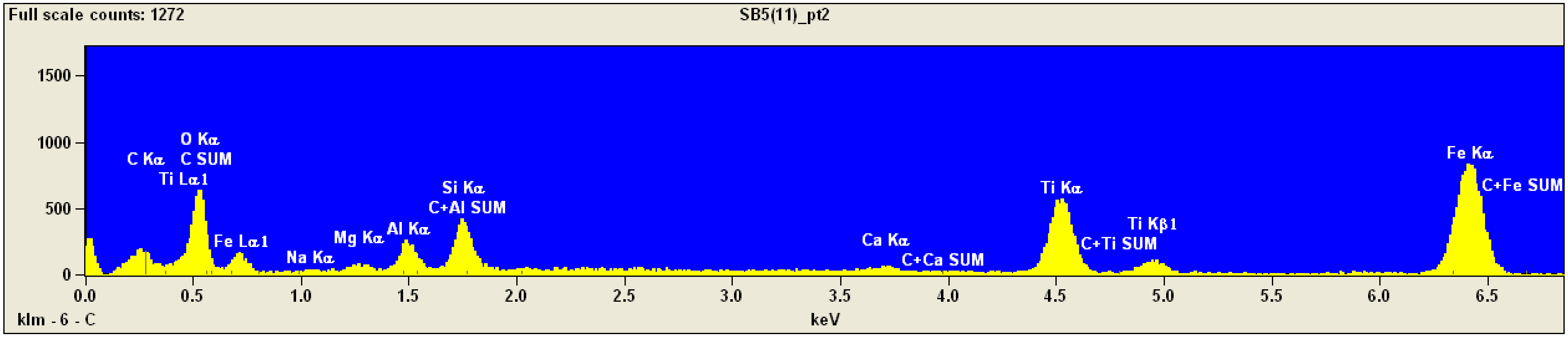


Image Name: SB5(11)

Accelerating Voltage: 20.0 kV

Magnification: 5252





Project: 04-08-2015

SB5(11)

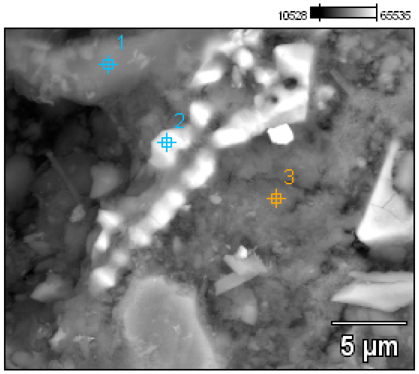
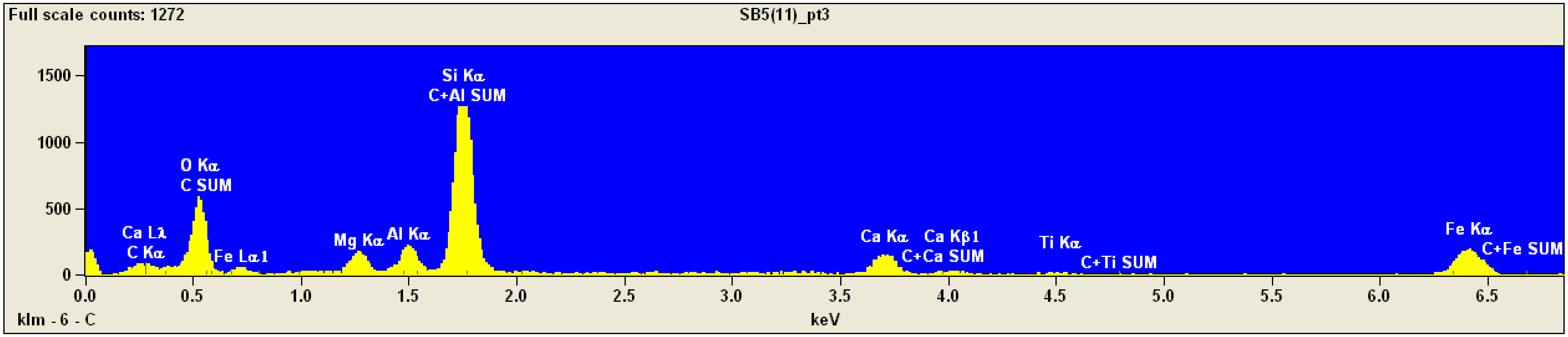


Image Name: SB5(11)

Accelerating Voltage: 20.0 kV

Magnification: 5252



Project: 04-08-2015

SB5(11)

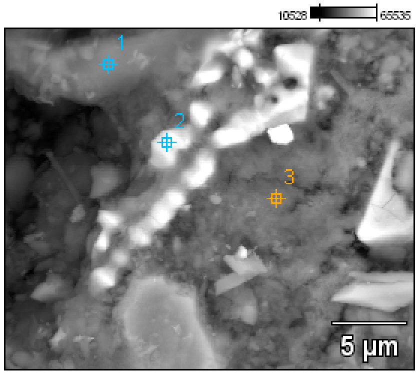


Image Name: SB5(11)

Accelerating Voltage: 20.0 kV

Magnification: 5252

Weight %

	C	O	Na	Mg	Al	Si	S	K	Ca	Ti	Fe
SB5(11)_pt1	37.27	35.19	1.44	0.57	6.99	11.69	0.17	1.40	1.66	0.26	3.36
SB5(11)_pt2	23.44	22.23	0.52	0.66	2.59	4.34			0.67	12.18	33.37
SB5(11)_pt3	25.53	30.65		2.52	2.81	21.71			3.77	0.49	12.52

	O	Na	Mg	Al	Si	S	K	Ca	Ti	Fe
SB5(11)_pt1	43.18	2.89	1.28	14.19	25.32	0.40	2.81	3.27	0.49	6.17
SB5(11)_pt2	23.58	0.87	1.06	4.09	6.81			0.94	16.84	45.81
SB5(11)_pt3	32.69		3.90	4.40	34.32			5.74	0.74	18.21

Project: 04-08-2015

SB5(12)

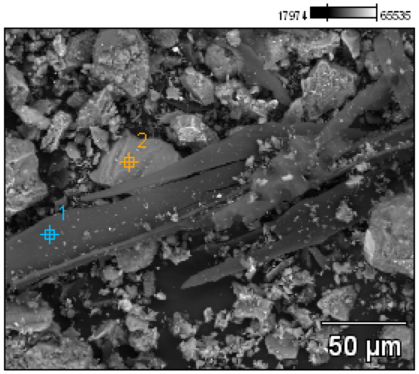
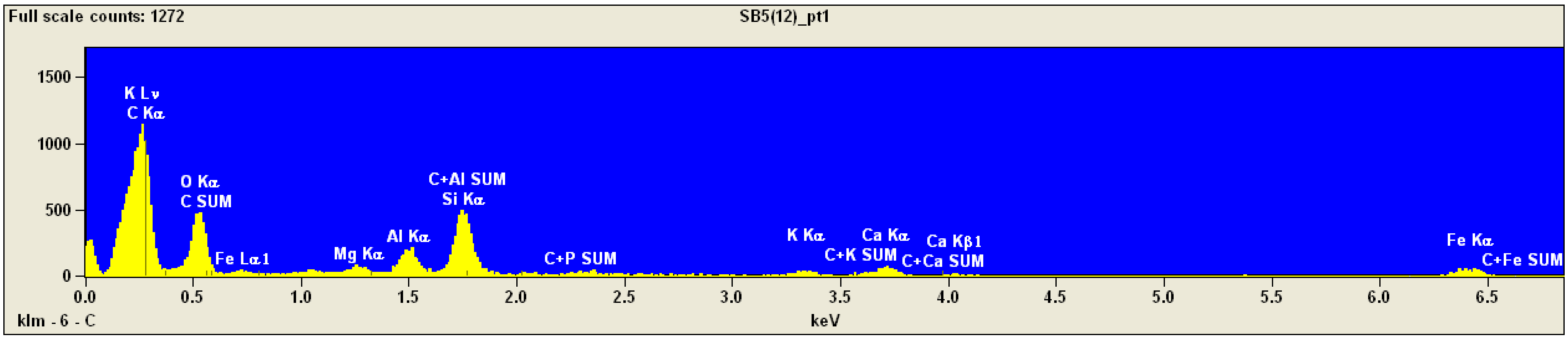
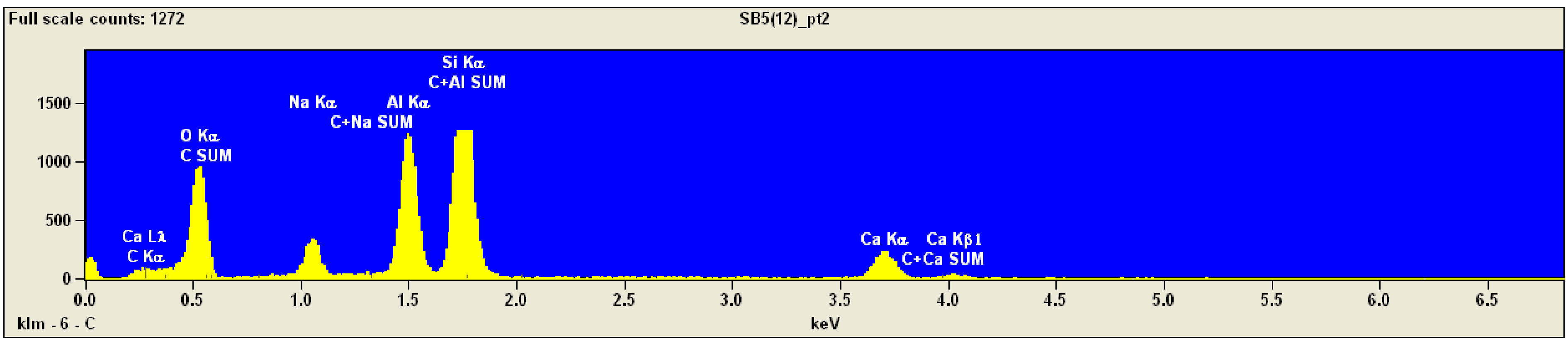


Image Name: SB5(12)

Accelerating Voltage: 20.0 kV

Magnification: 602





Project: 04-08-2015

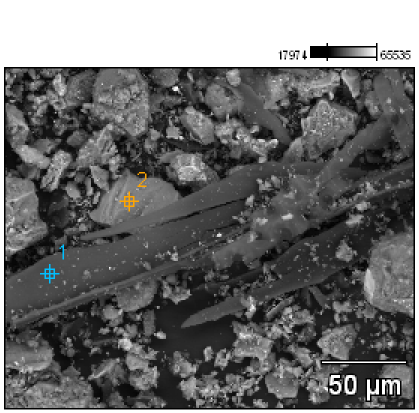


Image Name: SB5(12)

Accelerating Voltage: 20.0 kV

Magnification: 602

Weight %

	C	O	Na	Mg	Al	Si	K	Ca	Fe
SB5(12)_pt1	67.32	22.54		0.43	1.65	4.27	0.39	0.93	2.47
SB5(12)_pt2	18.47	37.19	5.82		11.77	22.60		4.15	

	O	Na	Mg	Al	Si	K	Ca	Fe
SB5(12)_pt1	50.82		2.17	8.31	22.78	1.79	4.16	9.97
SB5(12)_pt2	39.72	7.41		15.56	31.66		5.65	

Project: 04-08-2015

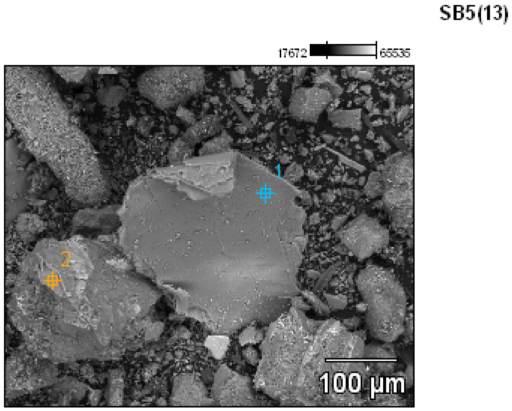
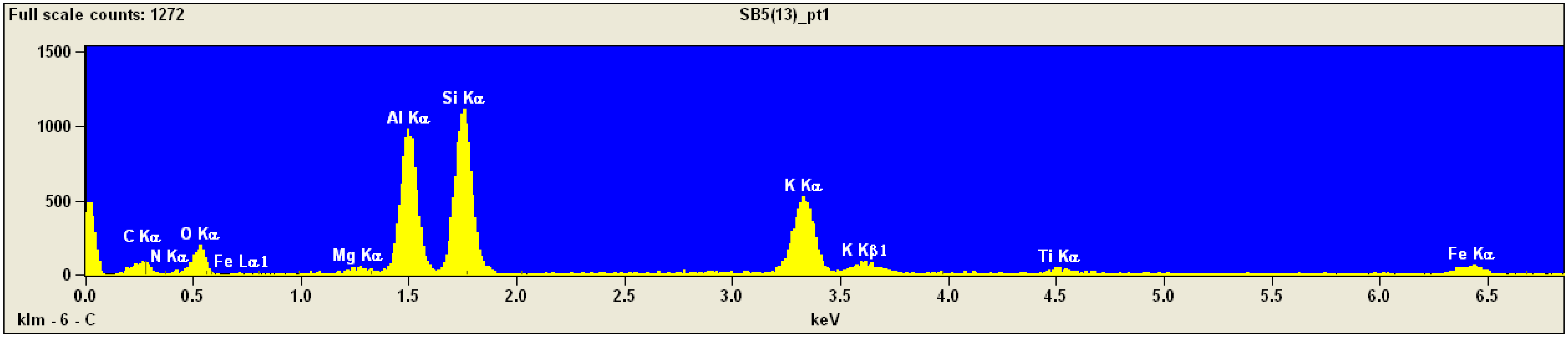
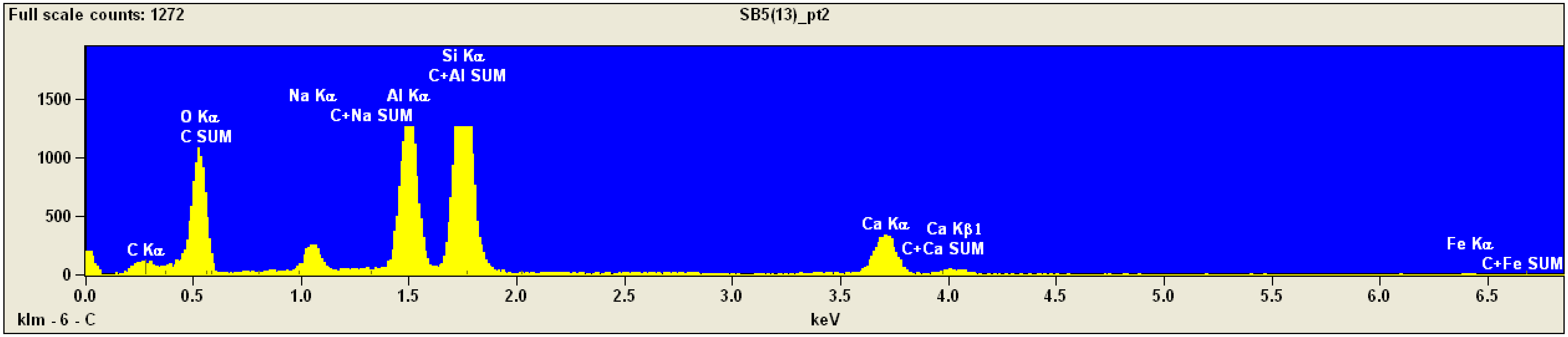


Image Name: SB5(13)

Accelerating Voltage: 20.0 kV

Magnification: 253





Project: 04-08-2015

SB5(13)

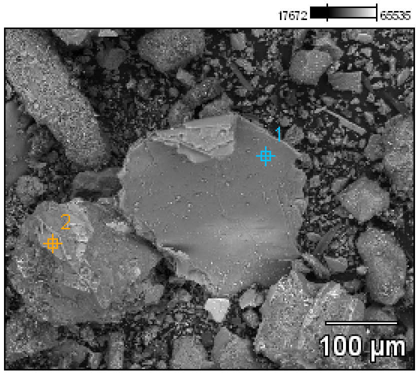


Image Name: SB5(13)

Accelerating Voltage: 20.0 kV

Magnification: 253

Weight %

	C	N	O	Na	Mg	Al	Si	K	Ca	Ti	Fe
SB5(13)_pt1	30.11	1.70	17.40		0.41	13.50	18.90	12.63		1.14	4.21
SB5(13)_pt2	23.61		35.40	4.02		11.70	19.54		5.27		0.47

	N	O	Na	Mg	Al	Si	K	Ca	Ti	Fe
SB5(13)_pt1	0.00	21.56		0.61	19.97	30.50	19.52		1.72	6.12
SB5(13)_pt2		39.42	5.54		16.67	29.96		7.74		0.67

Project: 04-08-2015

SB5(14)

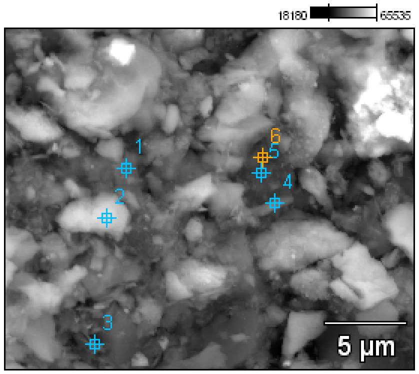
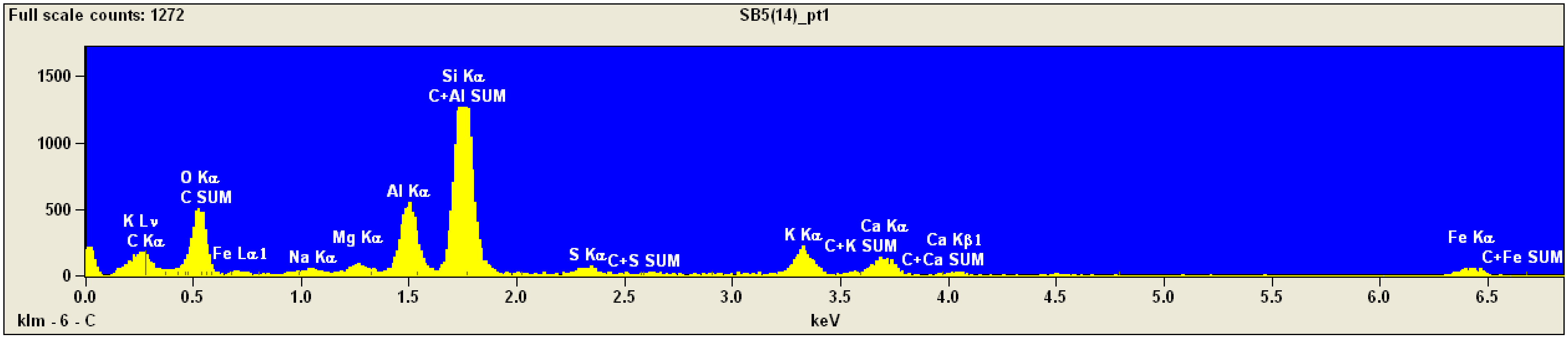
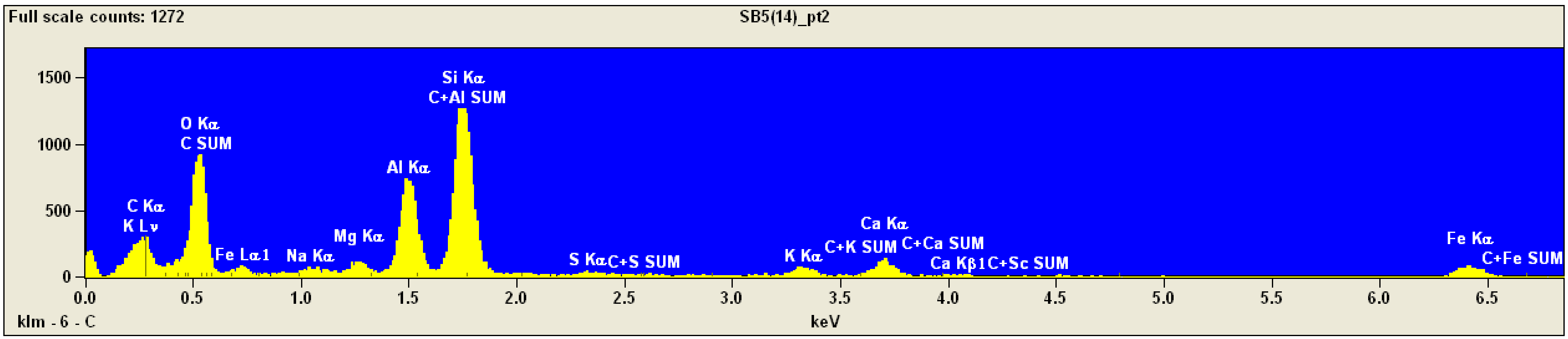


Image Name: SB5(14)

Accelerating Voltage: 20.0 kV

Magnification: 5727





Project: 04-08-2015

SB5(14)

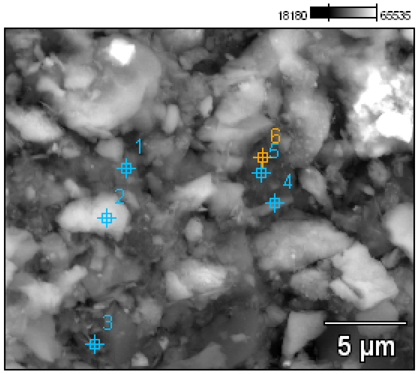
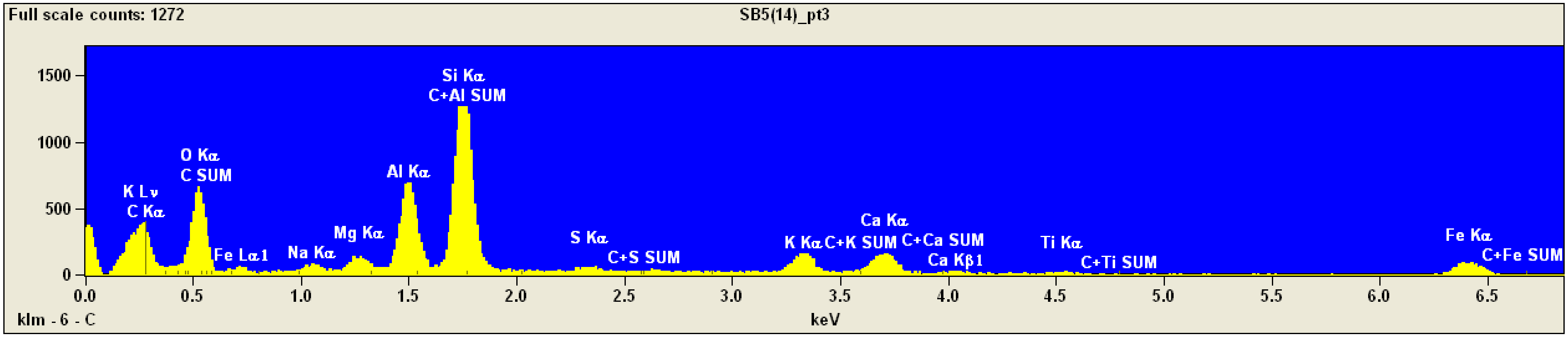
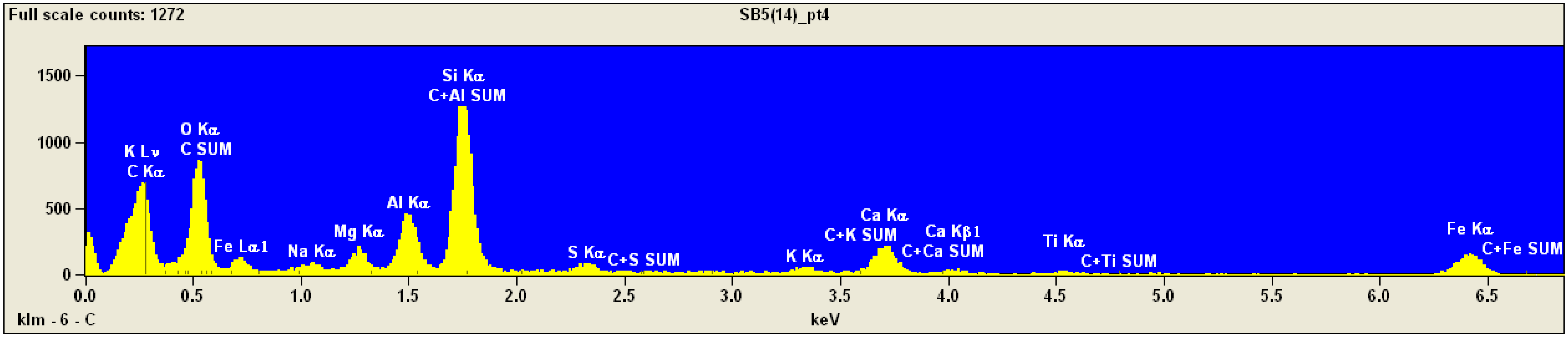


Image Name: SB5(14)

Accelerating Voltage: 20.0 kV

Magnification: 5727





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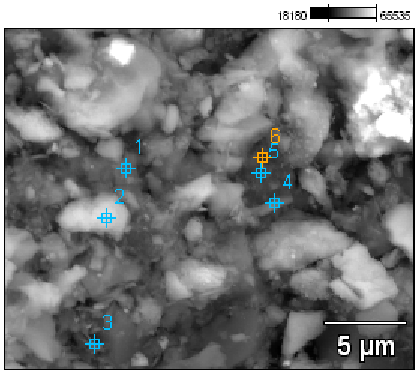

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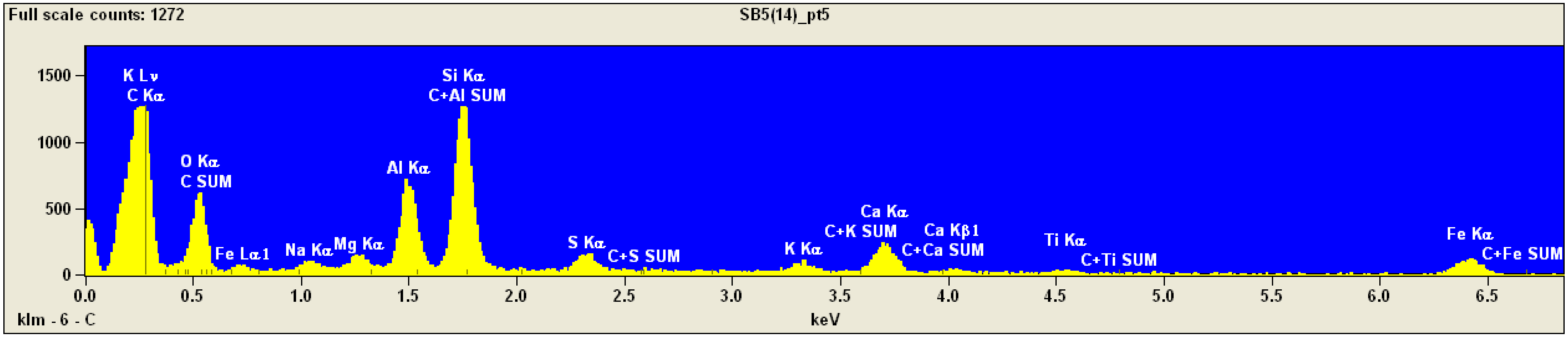
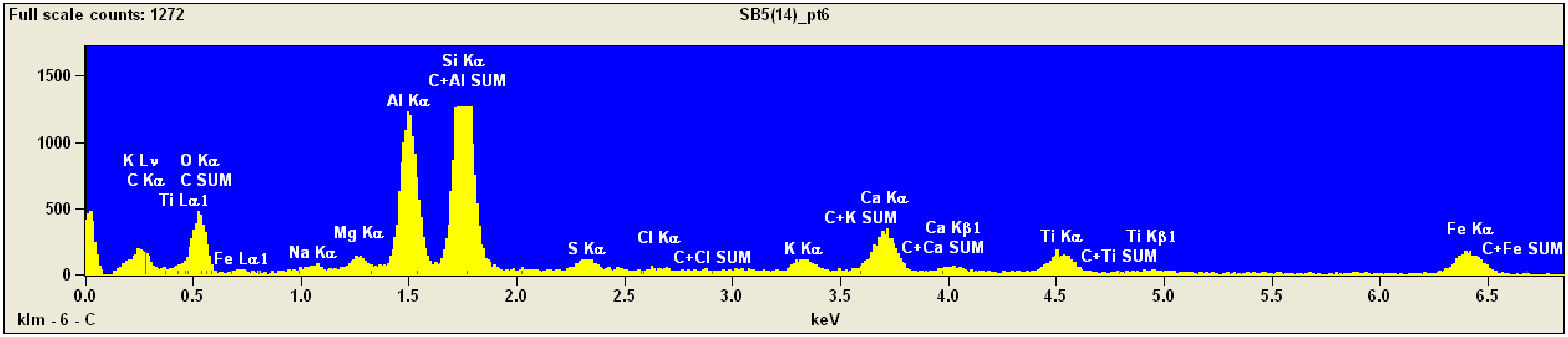
Accelerating Voltage: 20.0 kV

Magnification: 5727





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SB5(14)

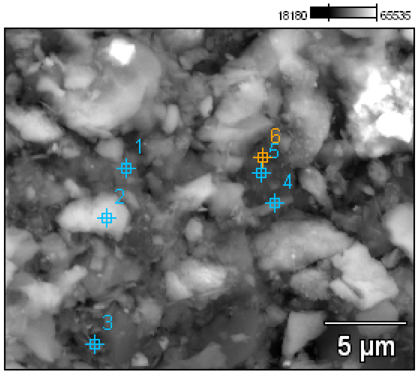


Image Name: SB5(14)

Accelerating Voltage: 20.0 kV

Magnification: 5727

Weight %

	C	O	Na	Mg	Al	Si	S	Cl	K	Ca	Ti	Fe
SB5(14)_pt1	35.35	28.60	0.83	0.78	6.03	18.83	0.91		3.09	2.71		2.87
SB5(14)_pt2	36.94	34.94	0.81	0.71	6.48	13.81	0.28		0.85	1.77		3.42
SB5(14)_pt3	47.11	26.00	0.87	0.77	5.32	11.57	0.43		1.90	2.19	0.23	3.62
SB5(14)_pt4	49.47	27.69	1.11	1.21	3.06	9.02	0.54		0.40	2.38	0.29	4.82
SB5(14)_pt5	66.17	16.38	0.78	0.48	3.15	6.41	0.83		0.51	1.93	0.35	3.01
SB5(14)_pt6	36.63	20.63	0.62	0.63	9.12	16.72	1.06	0.18	0.98	4.50	2.96	5.95

	O	Na	Mg	Al	Si	S	Cl	K	Ca	Ti	Fe
SB5(14)_pt1	36.52	1.39	1.32	10.24	33.84	1.79		5.46	4.75		4.69
SB5(14)_pt2	43.98	1.49	1.36	12.45	28.76	0.62		1.68	3.45		6.21
SB5(14)_pt3	37.47	1.86	1.75	12.06	28.46	1.14		4.35	4.94	0.50	7.48
SB5(14)_pt4	43.62	2.26	3.02	7.83	23.95	1.51		0.97	5.61	0.67	10.55
SB5(14)_pt5	39.28	2.38	1.68	11.08	24.41	3.33		1.72	6.25	1.09	8.79
SB5(14)_pt6	22.93	1.19	1.28	15.89	31.58	2.16	0.34	1.77	7.93	5.10	9.83

Project: 04-08-2015

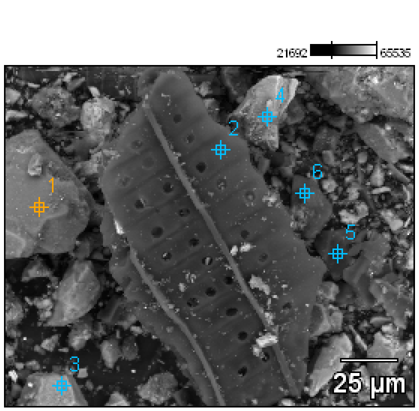
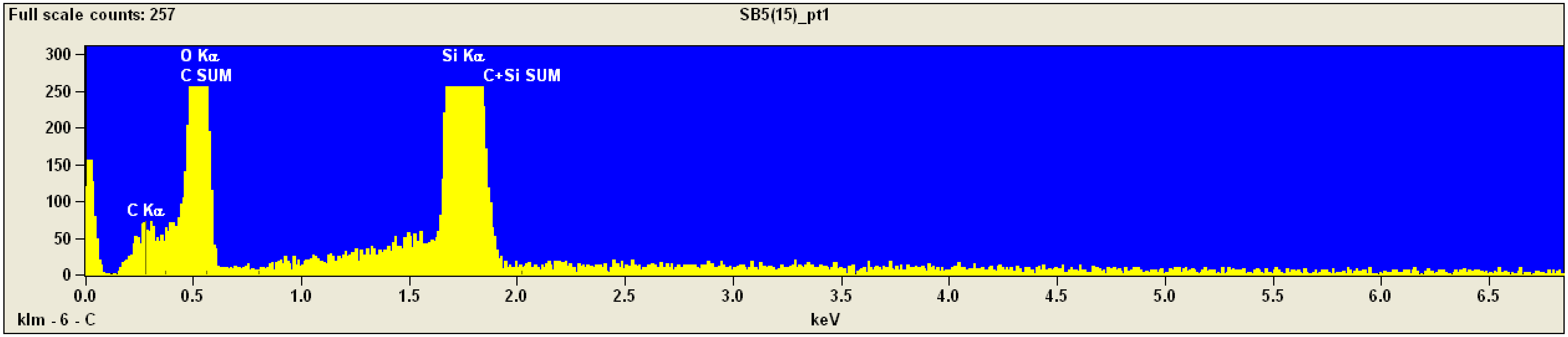
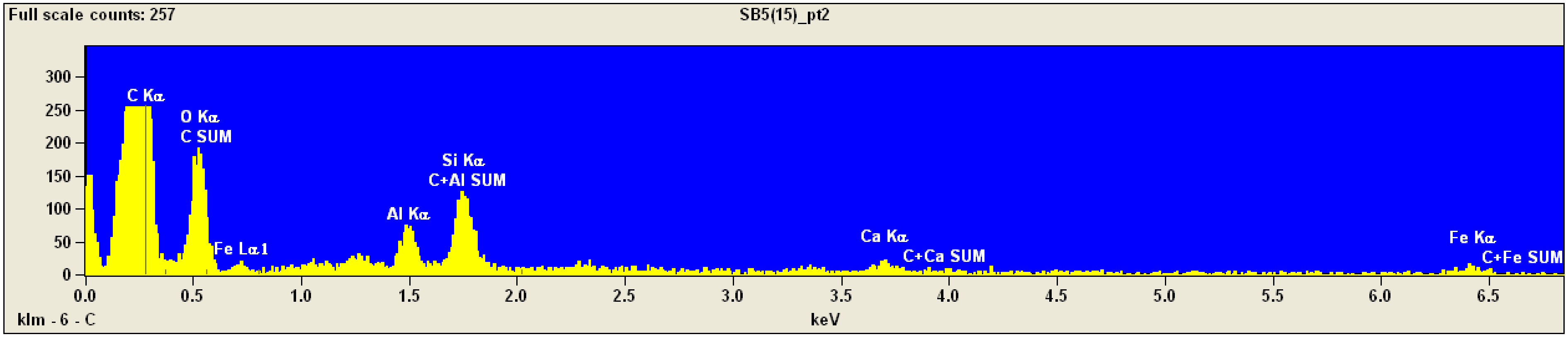


Image Name: SB5(15)

Accelerating Voltage: 20.0 kV

Magnification: 781





Project: 04-08-2015

SB5(15)

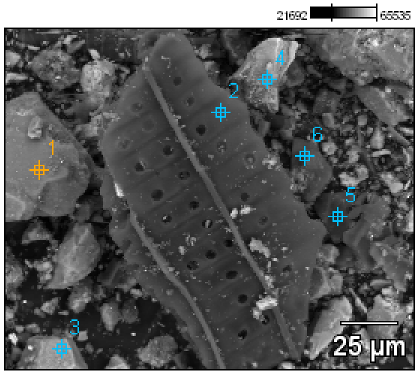
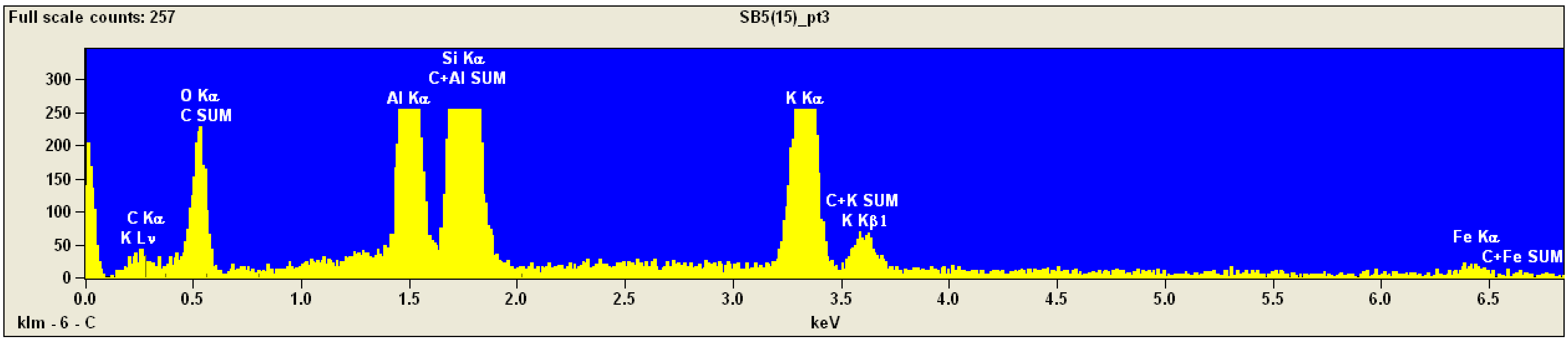
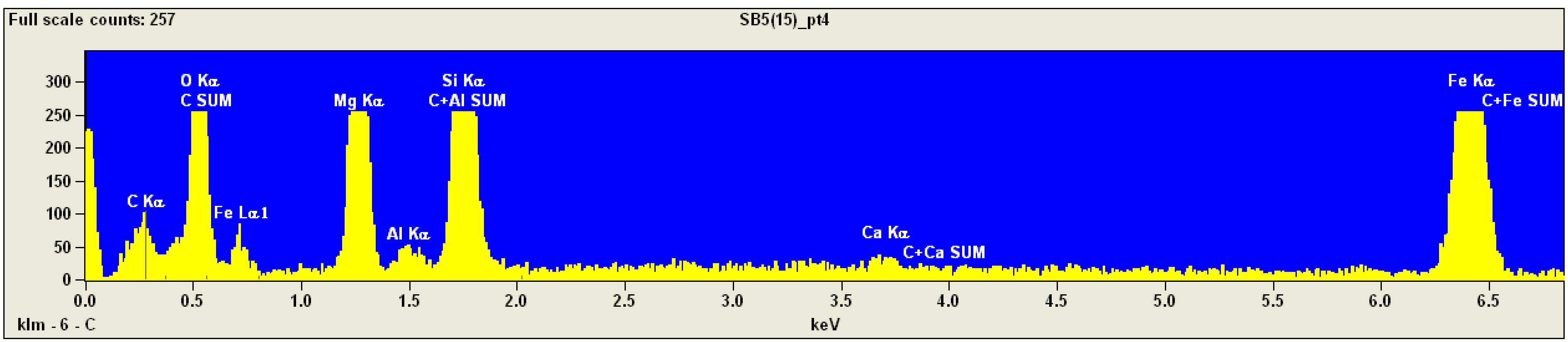


Image Name: SB5(15)

Accelerating Voltage: 20.0 kV

Magnification: 781





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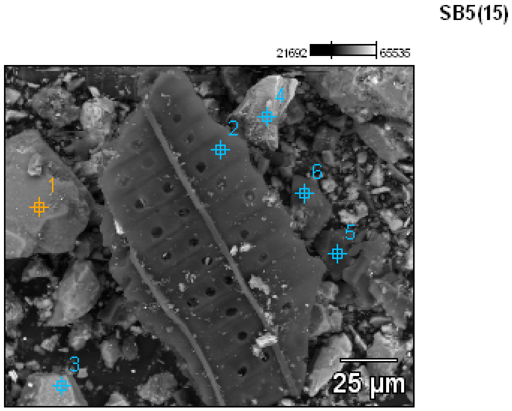

Image Name: SB5(15)

Accelerating Voltage: 20.0 kV

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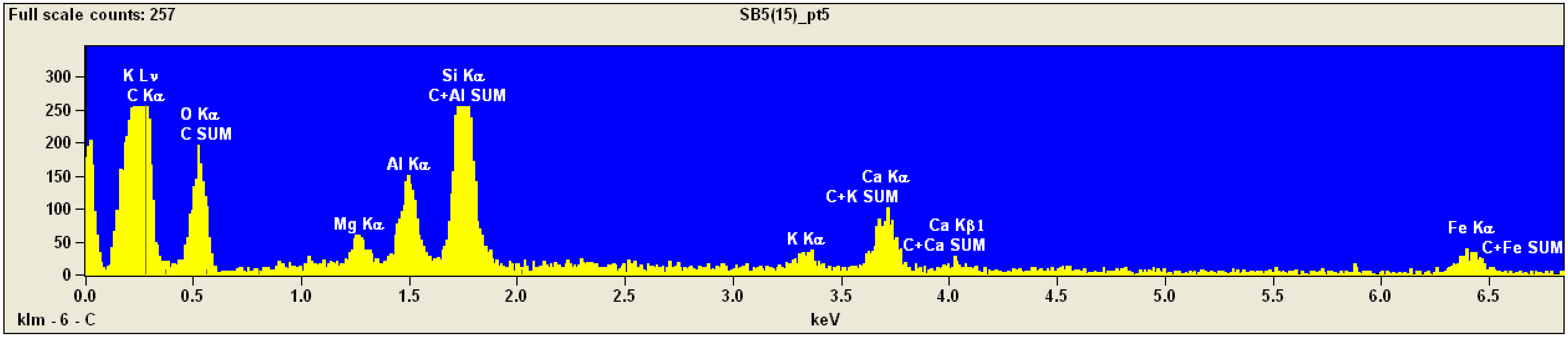

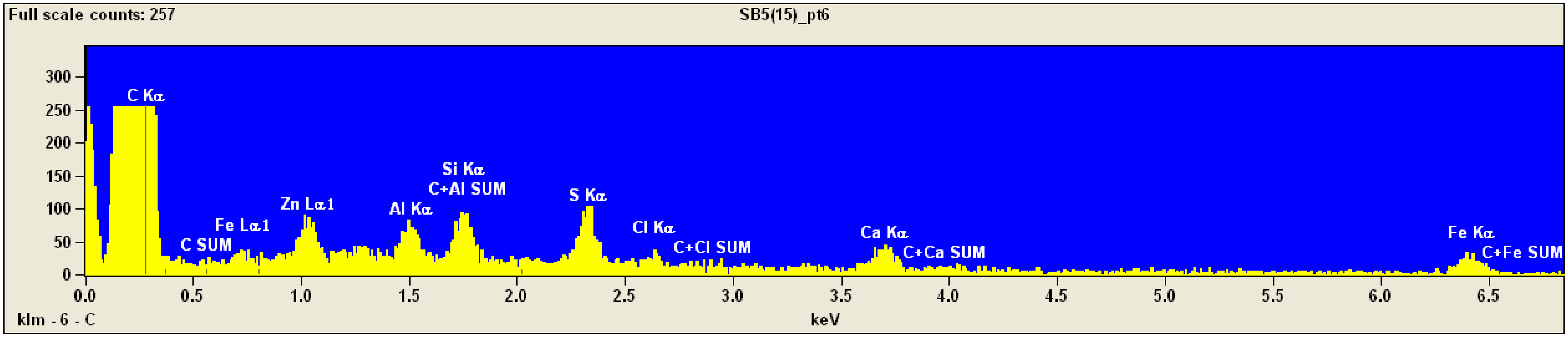

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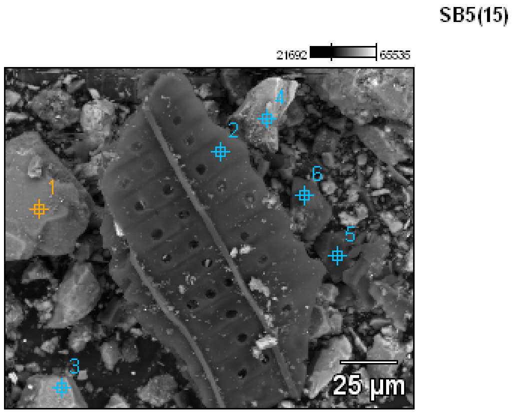


Image Name: SB5(15)

Accelerating Voltage: 20.0 kV

Magnification: 781

Weight %

	C	*O*	*Mg*	*Al*	*Si*	*S*	*Cl*	*K*	*Ca*	*Fe*	*Zn*
SB5(15)_pt1	22.09	37.94			39.97						
SB5(15)_pt2	68.62	25.88		0.86	2.68				0.56	1.39	
SB5(15)_pt3	15.47	22.31		9.70	34.99			15.91		1.62	
SB5(15)_pt4	25.13	20.68	11.06	0.86	13.20				0.40	28.68	
SB5(15)_pt5	63.99	20.38	0.77	2.19	6.37			0.75	2.90	2.65	
SB5(15)_pt6	93.49			0.47	0.81	1.13	0.24		0.77	1.60	1.50

	O	*Mg*	*Al*	*Si*	*S*	*Cl*	*K*	*Ca*	*Fe*	*Zn*
SB5(15)_pt1	42.28			57.72						
SB5(15)_pt2	62.63		6.09	19.83				3.50	7.95	
SB5(15)_pt3	24.97		11.44	42.36			19.32		1.91	
SB5(15)_pt4	19.91	17.06	1.40	21.19				0.59	39.86	
SB5(15)_pt5	43.28	2.85	8.16	25.03			2.59	9.84	8.24	
SB5(15)_pt6			9.51	16.58	21.23	4.72		11.41	19.17	17.38

Project: 04-08-2015

SB5(16)

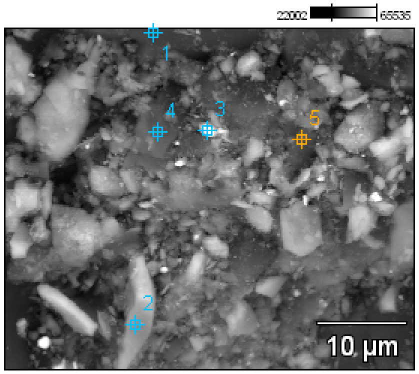
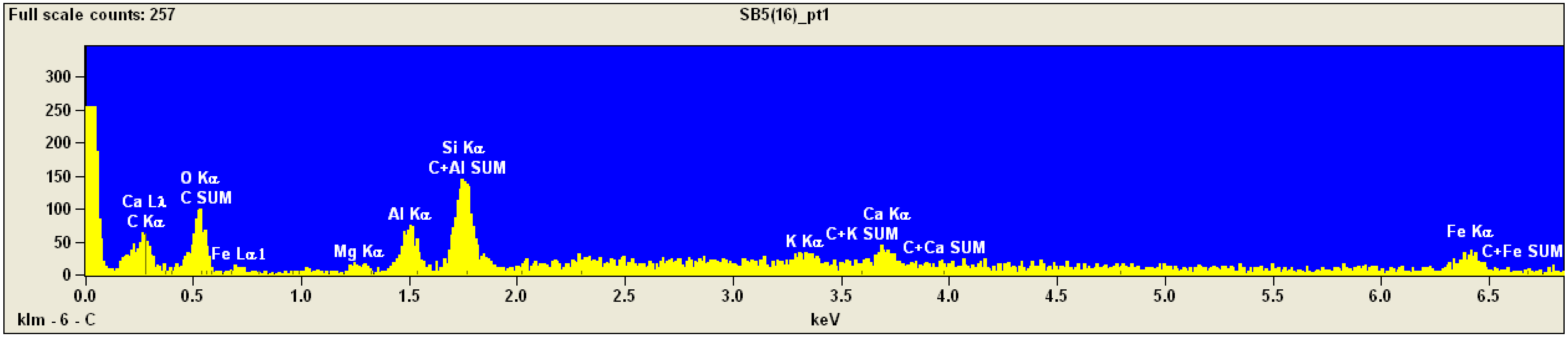
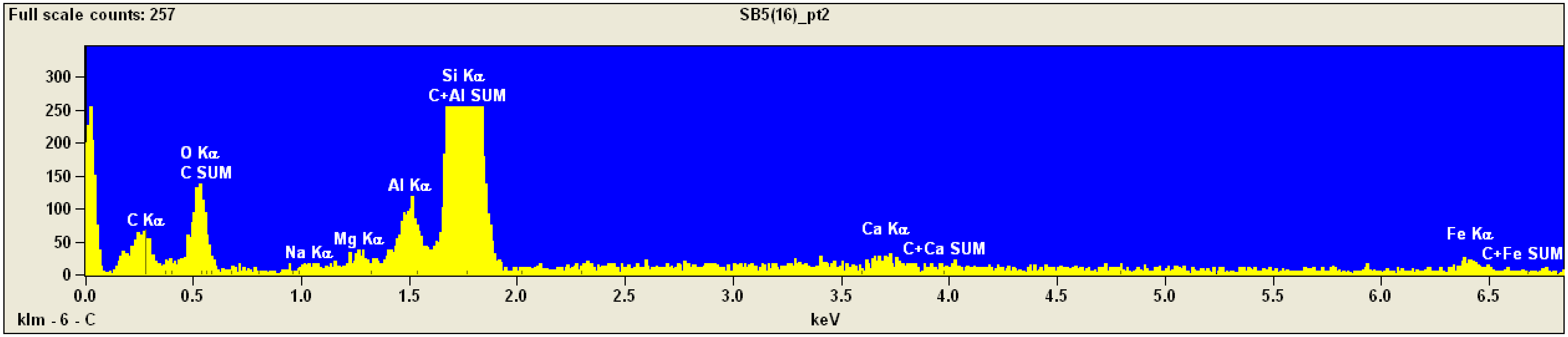


Image Name: SB5(16)

Accelerating Voltage: 20.0 kV

Magnification: 3123





Project: 04-08-2015

SB5(16)

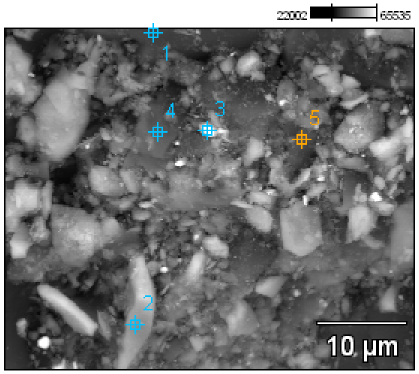
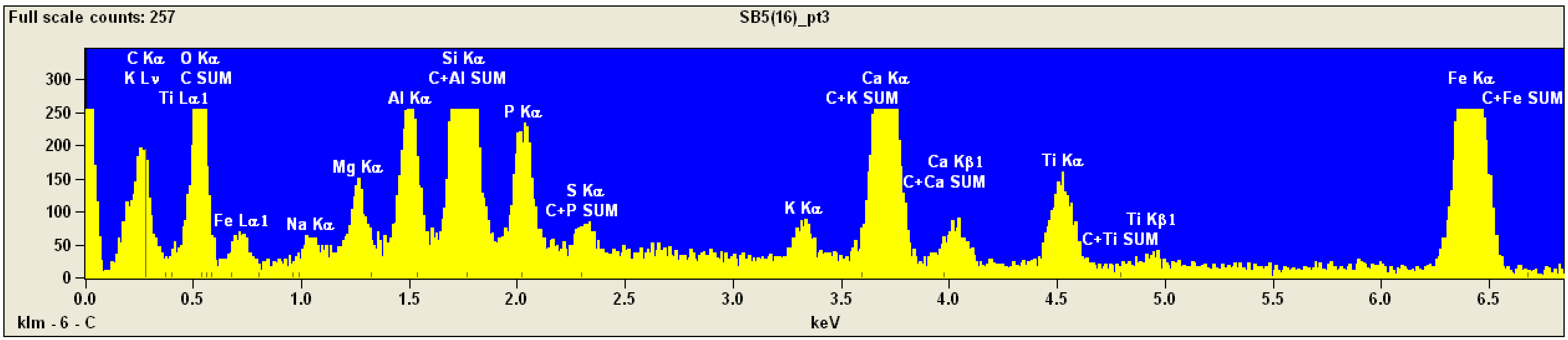
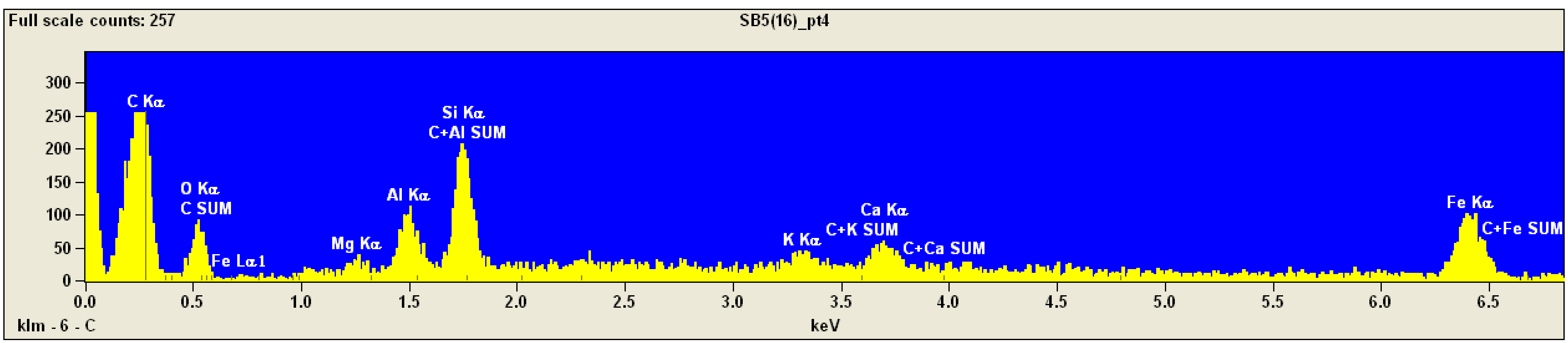


Image Name: SB5(16)

Accelerating Voltage: 20.0 kV

Magnification: 3123





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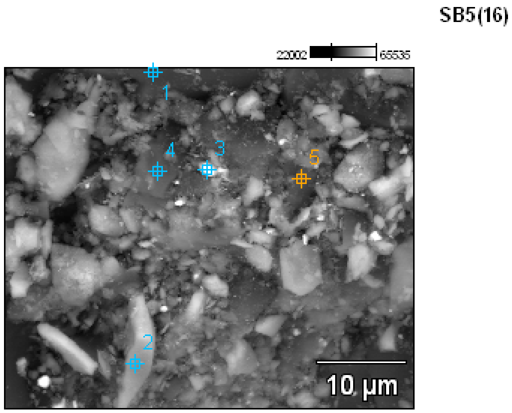
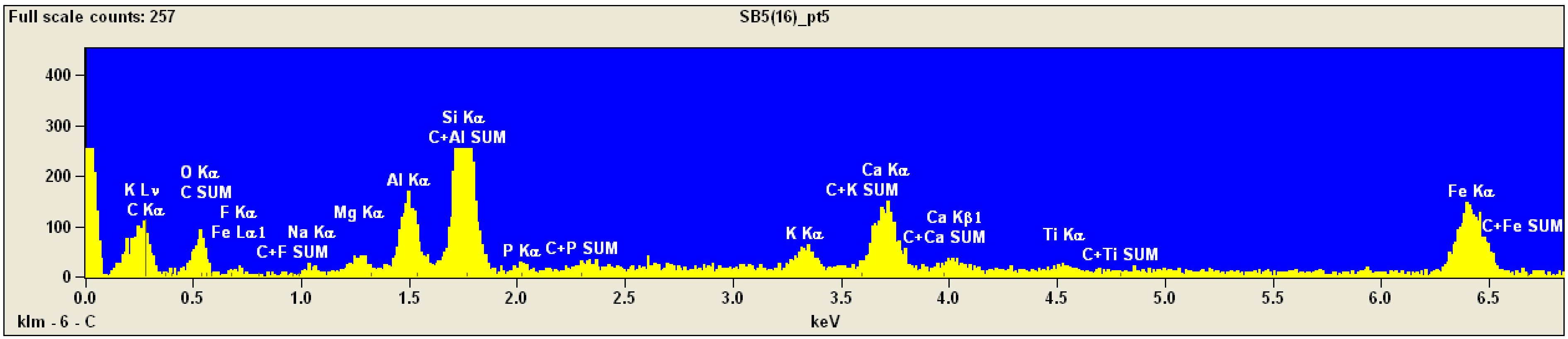


Image Name: SB5(16)

Accelerating Voltage: 20.0 kV

Magnification: 3123



Project: 04-08-2015

SB5(16)

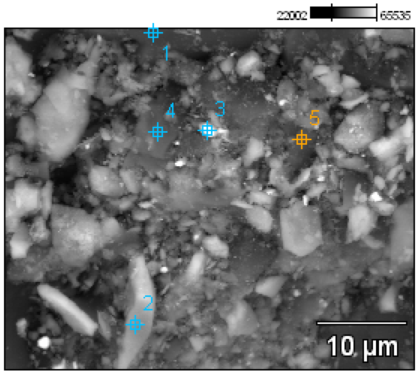


Image Name: SB5(16)

Accelerating Voltage: 20.0 kV

Magnification: 3123

Weight %

	C	O	F	Na	Mg	Al	Si	P	S	K	Ca	Ti	Fe
SB5(16)_pt1	44.14	28.09			0.93	4.64	10.05			1.63	2.60		7.93
SB5(16)_pt2	37.01	14.73		0.37	0.30	1.26	43.87				0.64		1.82
SB5(16)_pt3	32.50	17.60		0.73	1.02	2.76	11.15	2.92	0.67	0.67	7.84	3.44	18.69
SB5(16)_pt4	66.41	11.27			0.61	2.59	4.85			0.75	1.79		11.73
SB5(16)_pt5	41.63	12.53	0.23	0.87	1.04	4.35	12.73	0.56		1.71	6.34	0.85	17.17

	O	F	Na	Mg	Al	Si	P	S	K	Ca	Ti	Fe
SB5(16)_pt1	37.75			2.13	10.62	24.37			3.58	5.63		15.92
SB5(16)_pt2	19.39		0.57	0.48	2.05	73.31				1.17		3.03
SB5(16)_pt3	22.94		1.31	1.74	4.54	18.26	5.01	1.12	1.03	11.86	5.14	27.06
SB5(16)_pt4	21.83			2.58	10.78	21.08			2.58	5.99		35.16
SB5(16)_pt5	17.07	1.14	1.68	2.01	8.33	24.85	1.20		3.05	11.09	1.46	28.14

ATTACHMENT C
ANALYTICAL CHEMISTRY REPORT

ALS Environmental

March 12, 2015

Client: Anchor QEA, LLC
421 SW Sixth Ave.
Portland, OR 97204

Attn: Jessica Goin
Date Received: 3/ 4/15
Project: PASCO LANDFILL - IWAG GROUP III

Certificate of Analysis

Total Metals by ICP-OES	ID	16F15 1001		16F15 1002		16F15 1003		16F15 1004		16F15 1005	
	Units	T1500362-001		T1500362-002		T1500362-003		T1500362-004		T1500362-005	
EPA 3050B Total Recoverable Digestion (HNO3, HCl, H2O2) with 6010C ICP-OES Analysis											
Aluminum	wt%		0.849		0.885		0.796		0.773		0.025
Barium	wt%		0.011		0.011		0.012		0.012		0.004
Calcium	wt%		1.307		1.344		1.144		1.187		0.138
Chromium	wt%		0.001		0.001		0.001		0.001	<	0.001
Cobalt	wt%		0.003		0.003		0.002		0.002	<	0.001
Copper	wt%		0.013		0.011		0.005		0.005	<	0.001
Iron	wt%		3.123		3.186		3.432		3.278		0.065
Lead	wt%		0.022		0.010		0.011		0.015		0.003
Magnesium	wt%		0.640		0.688		0.605		0.644		0.035
Manganese	wt%		0.046		0.048		0.045		0.046		0.001
Nickel	wt%		0.002		0.002		0.001		0.001	<	0.001
Potassium	wt%		0.219		0.213		0.206		0.206		0.024
Sodium	wt%		0.057		0.052		0.061		0.047		0.028
Thalium	wt%	<	0.005	<	0.005	<	0.005	<	0.005	<	0.005
Vanadium	wt%		0.006		0.006		0.005		0.005	<	0.001
Zinc	wt%		0.320		0.227		0.205		0.145		0.743
EPA 3052 Total Dissolution Digestion (HNO3, HCl, HF) by Microwave with 6010C ICP-OES Analysis											
Silicon	wt%		25.70		30.84		28.61		30.32		0.78
Titanium	wt%		0.72		0.74		0.66		0.64		0.03

Note: Values reported on a dried basis.

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ALS Environmental

March 12, 2015

Client: Anchor QEA, LLC
421 SW Sixth Ave.
Portland, OR 97204

Attn: Jessica Goin
Date Received: 3/ 4/15
Project: PASCO LANDFILL - IWAG GROUP III

Certificate of Analysis

Total Metals by ICP-OES	ID	16F15 1006				
	Units	T1500362-006				
EPA 3050B Total Recoverable Digestion (HNO3, HCl, H2O2) with 6010C ICP-OES Analysis						
Aluminum	wt%	0.734				
Barium	wt%	0.013				
Calcium	wt%	1.100				
Chromium	wt%	0.001				
Cobalt	wt%	0.002				
Copper	wt%	0.005				
Iron	wt%	2.783				
Lead	wt%	0.016				
Magnesium	wt%	0.561				
Manganese	wt%	0.045				
Nickel	wt%	0.002				
Potassium	wt%	0.205				
Sodium	wt%	0.042				
Thalium	wt%	< 0.005				
Vanadium	wt%	0.006				
Zinc	wt%	0.193				
EPA 3052 Total Dissolution Digestion (HNO3, HCl, HF) by Microwave with 6010C ICP-OES Analysis						
Silicon	wt%	28.38				
Titanium	wt%	0.66				

Note: Values reported on a dried basis.

Revised 3/12/15 to include Titanium.

Wendy Hyatt, Client Services Manager

ADDRESS 3860 S. Palo Verde Road, Suite 302, Tucson, AZ 85714
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February 27, 2015

Client: Anchor QEA, LLC
421 SW Sixth Ave.
Portland, OR 97204

Attn: Jessica Goin

Project: PASCO LANDFILL - IWAG GROUP III

Date Received: 2/19/15

Certificate of Analysis

Sample ID:	Sample Date & Time		Lab #:	Moisture, Total (D7582 by Automated TGA System) wt%	Ash (D7582 by Automated TGA System) As Received wt%	Ash Moist. Free wt%				
16F15 1001	2/16/15	1000	T1500285-001	0.73	93.81	94.50				
16F15 1002	2/16/15	1015	T1500285-002	0.78	94.42	95.16				
16F15 1003	2/16/15	1030	T1500285-003	1.39	87.50	88.73				
16F15 1004	2/16/15	1045	T1500285-004	1.38	88.52	89.75				
16F15 1005	2/16/15	1100	T1500285-005	0.29	4.14	4.15				
16F15 1006	2/16/15	1115	T1500285-006	8.25	85.14	92.79				

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ALS Environmental

February 27, 2015

Client: Anchor QEA, LLC
421 SW Sixth Ave.
Portland, OR 97204

Attn: Jessica Goin
Project: PASCO LANDFILL - IWAG GROUP III

Date Received: 2/19/15

Certificate of Analysis

Sample ID:	Sample Date & Time:		Lab #:	Carbon	Hydrogen	Nitrogen	Oxygen	Sulfur		
					D5373		Calculated	D4239		
				Moist. Free wt%	Moist. Free wt%	Moist. Free wt%	Moist. Free wt%	Moist. Free wt%		
16F15 1001	2/16/15	1000	T1500285-001	3.04	0.18	0.05	2.03	0.201		
16F15 1002	2/16/15	1015	T1500285-002	2.50	0.24	0.02	1.95	0.132		
16F15 1003	2/16/15	1030	T1500285-003	8.15	0.59	0.15	2.19	0.187		
16F15 1004	2/16/15	1045	T1500285-004	6.83	0.55	0.11	2.61	0.142		
16F15 1005	2/16/15	1100	T1500285-005	85.15	6.48	0.63	2.27	1.318		
16F15 1006	2/16/15	1115	T1500285-006	4.83	0.29	0.06	1.87	0.151		

Note:

Wendy Hyatt, Client Services Manager

ADDRESS 3860 S. Palo Verde Road, Suite 302, Tucson, AZ 85714
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FAX +1 520 573 1063

ALS Environmental

May 18, 2015

Client: Anchor QEA, LLC
421 SW Sixth Ave.
Portland, OR 97204

Attn: Jessica Goin
Project: PASCO

Date Received: 5/12/15

Certificate of Analysis

Sample ID:	Sample Date & Time		Lab #:	Moisture, Total	Ash					
				D7582 by Automated TGA System						
				wt%	As Received wt%	Moist. Free wt%				
S3_M6_1001	5/11/15	0000	T1500778-001	1.45	88.58	89.88				
S5_M6_1002	5/11/15	0000	T1500778-002	1.87	78.94	80.44				

May 18, 2015

Client: Anchor QEA, LLC
421 SW Sixth Ave.
Portland, OR 97204

Attn: Jessica Goin
Project: PASCO

Date Received: 5/12/15

Certificate of Analysis

Sample ID:	Sample Date & Time:		Lab #:	Carbon	Hydrogen	Nitrogen	Oxygen	Sulfur		
					D5373		Calculated	D4239		
				Moist. Free wt%	Moist. Free wt%	Moist. Free wt%	Moist. Free wt%	Moist. Free wt%		
S3_M6_1001	5/11/15	0000	T1500778-001	5.03	0.35	0.10	4.31	0.33		
S5_M6_1002	5/11/15	0000	T1500778-002	12.50	0.91	0.29	5.54	0.31		

Note:

Wendy Hyatt, Project Chemist

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ATTACHMENT D
FIELD PHOTOGRAPHS OF INTERVALS SAMPLED FOR CHEMICAL ANALYSIS


16F15_1001
16F15_1002
SB3 28-29.5' bgs
239°F


16F15_1003
16F15_1004
16F15_1005
SB5 27.5-29'bgs
308°F
metal can/slurpee straw/rubber tire
from auger flight


16F15_1006
SB6B 17.5-19' bgs
106°F

ATTACHMENT E
FTIR/TGA REPORT

1940 N. Stark Road ▪ Midland, MI 48642 ▪ USA
Phone: 855-IA-SOLVE (855-427-6583) ▪ Fax: (989) 486-9429
www.impactanalytical.com

Customer:	Jessica Goin	**Report Number*:**	R150285
Company:	ANCHOR QEA, LLC	**Date Submitted:**	5/07/2015
Address:	421 SW Sixth Avenue Suite 750 Portland, OR 97204	**Report Date:**	6/03/2015
Databook #:	1046	**Analyst(s):**	K. Griffin
Samples:	S151077, S151078	**QC (Initial/Date):**	KAR 6/03/2015

Quantitation of Unknown Carbon by FT-IR Spectroscopy-Revised

Summary

Jessica Goin of ANCHOR QEA LLC submitted two soil samples for analysis by Fourier Transform Infrared spectrometry (FT-IR) and thermogravimetric analysis (TGA). The TGA analysis was performed by an Impact Analytical approved laboratory. This report is a revision of Impact Analytical report R150249 to correct Table I, where the sample identifications were reversed.

The main absorbance bands observed in the FT-IR spectra of both samples were consistent with the presence of clay. There was a high degree of similarity of the sample spectra to a reference spectrum of organophilic clay obtained from HR surfactants electronic reference library.

The TGA thermograms were similar for both samples. The weight loss profiles were nearly the same from ambient to 650 °C however the S5-M6-1002 sample lost 8.05 weight percent (wt %) from 650 – 850 °C while the S3-M6-1001 sample only lost 2.2 wt %. The ash, or noncombustible material content, was 91.48 wt % for the S3-M6-1001 sample and 81.01 wt % for the S5-M6-1002 sample.

Experimental

<u>Sample Identification</u>

Impact Analytical ID	*Customer ID*
S151077	S3-M6-1001, black silt
S151078	S5-M6-1002, black silt

<u>FT-IR</u>

Both samples were dark colored, granular solids. A spatula was used to transfer a small amount of each sample for analysis. The samples were analyzed using a Thermo Nicolet Nexus 670 FT-IR spectrometer with a diamond Durascope® attenuated total reflectance (ATR) accessory. The spectrometer was controlled using the Omnic® software with ValPro Qualification software (version 8.0.342 from Thermo Scientific 1992-2008). The spectra were recorded, software corrected for the ATR accessory and baseline shift (as denoted by a double asterisk in the title), and peak picked. The analyses were conducted in accordance with Impact Analytical SOP-MOL-006.

TGA

The TGA was performed on aliquots from each sample. The analyses were performed using a TA Instruments Q500 TGA, guided by ASTM E1181-08 and according to CPGSOP0125. Approximately 20-30 mg of each sample was loaded into a flame-cleaned platinum pan. The TGA was run in constant heating rate mode with the following parameters:

Test conditions:	Ramp from 23 °C to 650 °C at 10 °C/min under nitrogen Isothermal for 5 minutes at 650 °C Switch from nitrogen to air purge Ramp from 650 °C to 850 °C at 10 °C/min under air Isothermal for 5 minutes at 850 °C
Conditioning:	As-received, no special conditioning
Purge Flow Rate:	90 cm^3 per minute nitrogen (air at same rate above 650 °C)

Results and Discussion

FT-IR

The FT-IR spectrum of the S3-M6-1001, black silt sample is presented in Figure 1. The main absorbance bands observed in the spectrum are consistent with the presence of clay. There are no absorbance bands consistent with the presence of hydrocarbon material.

The FT-IR spectrum of the S5-M6-1002, black silt sample is presented in Figure 2. The main absorbance bands observed in the spectrum are consistent with the presence of clay. The absorbance bands observed at 2920 and 2851 cm^{-1} suggest the presence of hydrocarbon material.

A reference spectrum of organophilic clay obtained from the HR surfactants electronic database is shown in Figure 3. There are many similarities between the sample spectra and the reference spectrum suggesting the composition of the sample may be similar.

TGA

The TGA thermograms for the S3-M6-1001 sample and the S5-M6-1002 sample are shown in Figures 4 and 5, respectively. An overlay of the TGA thermograms for the samples is shown in Figure 6. A summary of the TGA results is presented in Table I where the categories and corresponding temperature ranges are based on ASTM E1131-08. The categories for weight loss are highly volatile matter (ambient to 150 °C), medium volatile matter (150 to 650 °C), combustible matter (650 °C to 850 °C), and ash content (residual weight at completion of heating ramp). The largest differences between the two samples were observed in the combustible matter content and ash content. Only one specimen per sample was tested therefore no statistical analysis has been performed to assess significance of the observed differences.

Table I. Summary of the TGA Results

Sample ID	Initial Mass (mg)	Highly Volatile Matter (ambient -150 °C) [wt%]	Medium Volatile Matter (150-650 °C) [wt %]	Combustible Matter (650-850 °C) [wt %]	Ash Content
S3-M6-1001	26.91	1.29	5.00	2.22	91.48
S5-M6-1002	25.56	2.18	8.76	8.05	81.01

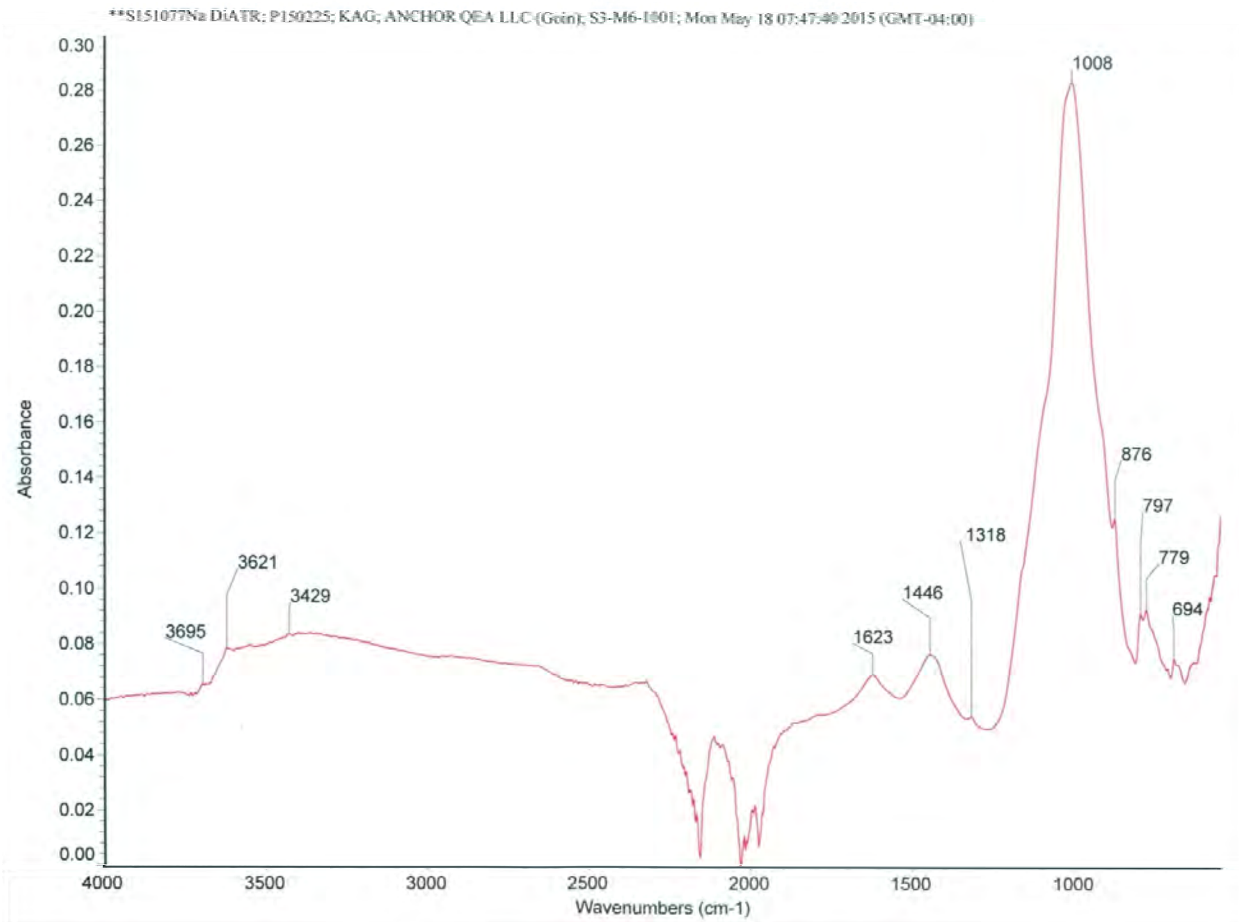

Figure 1. 4000-550 cm^{-1} FT-IR/ATR spectrum of the S3-M6-1001, black silt sample.

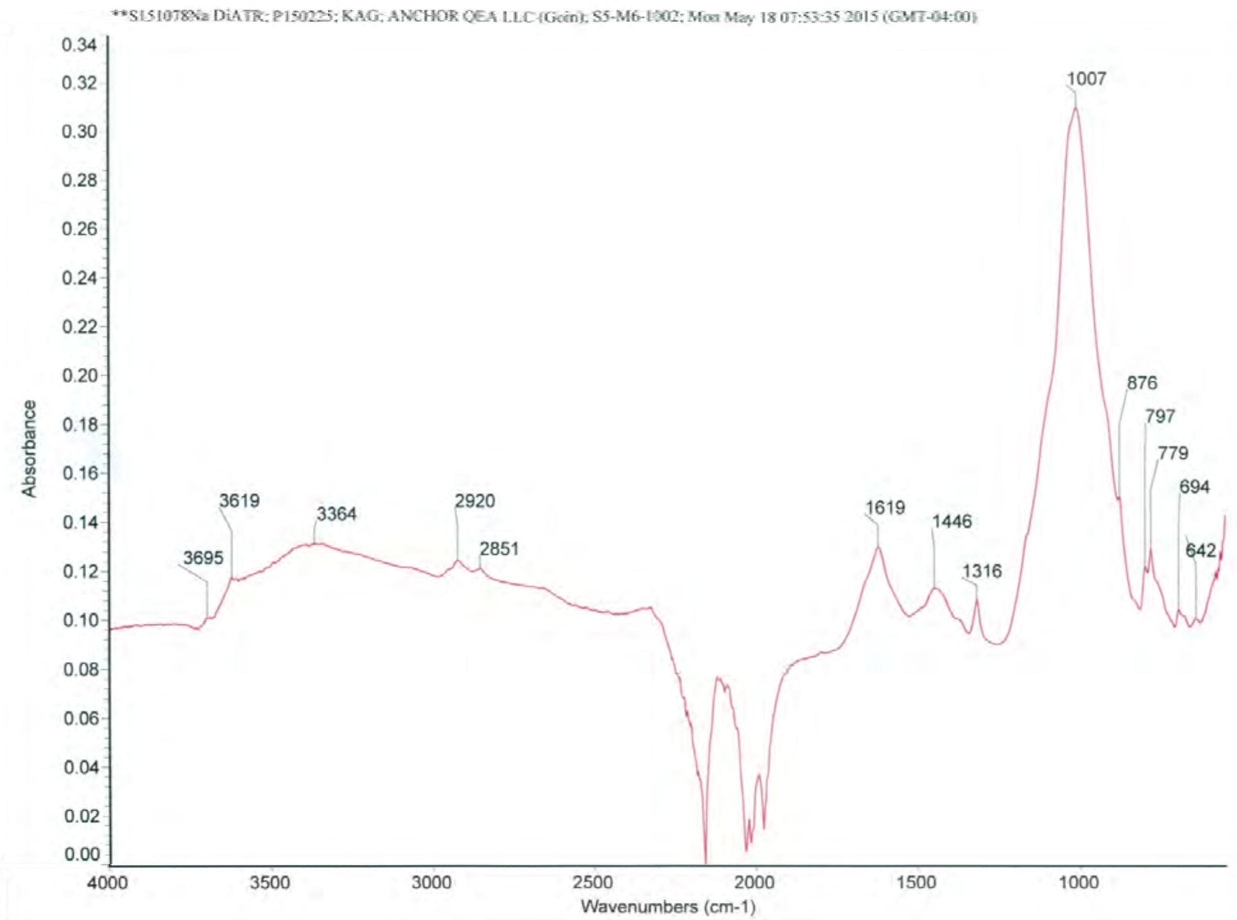

Figure 2. 4000-550 cm^{-1} FT-IR/ATR spectrum of the S5-M6-1002, black silt sample.

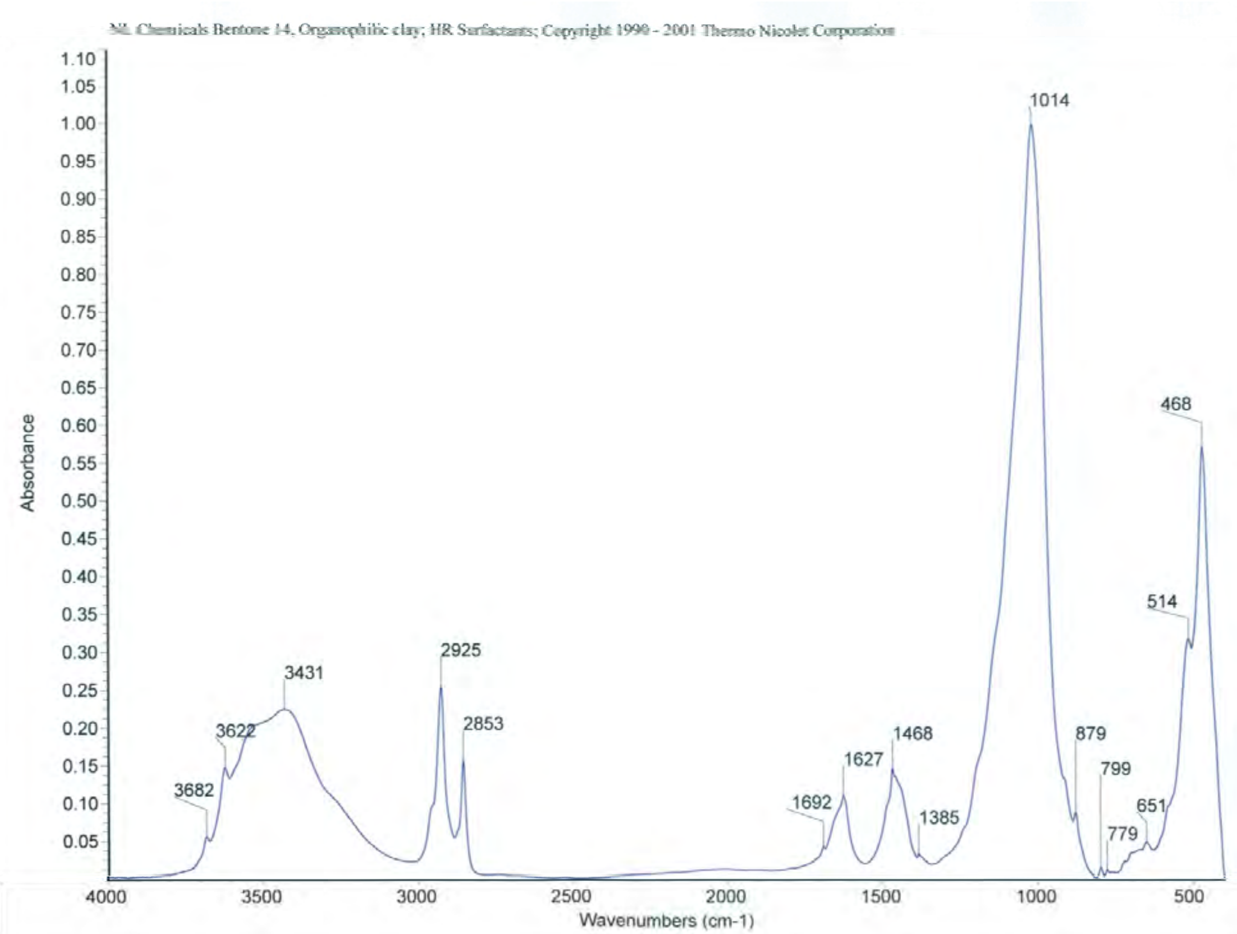

Figure 3. 4000-550 cm^{-1} FT-IR spectrum of the Organophilic clay obtained from the HR surfactant electronic database.

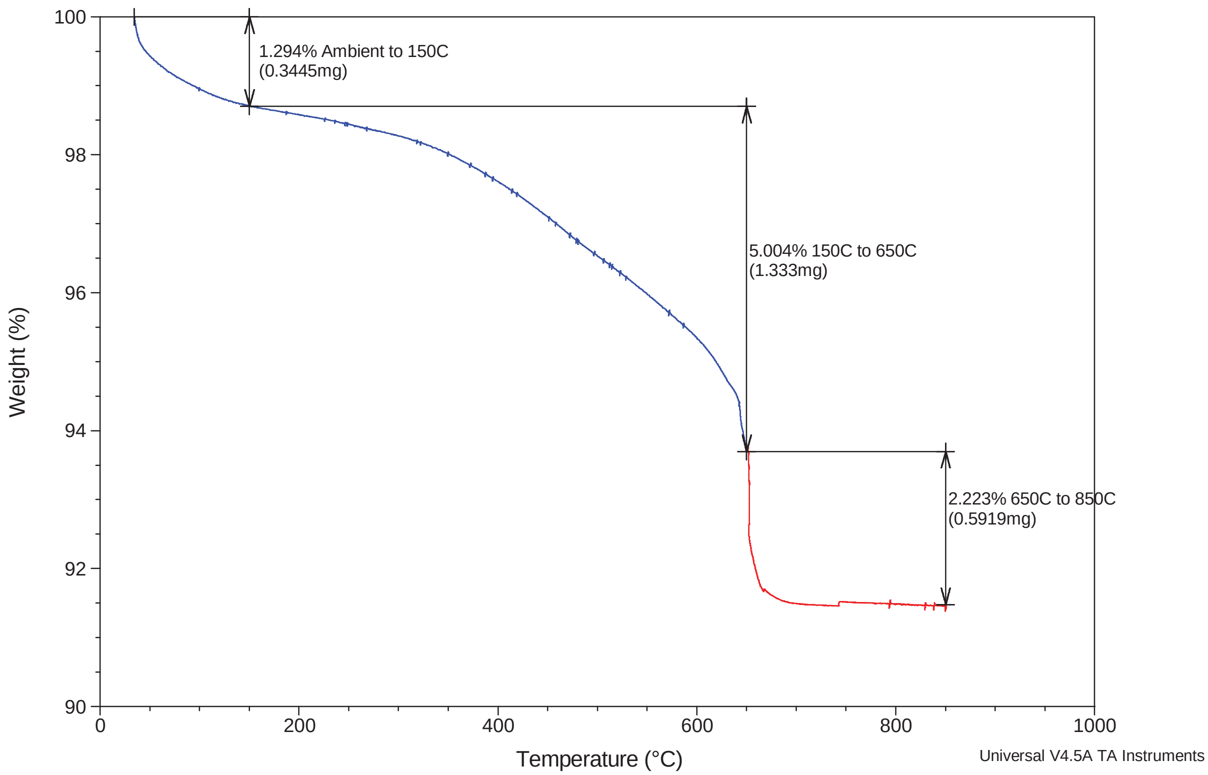

Figure 4. TGA thermogram and analysis of the S3-M6-1001 sample (S151077).

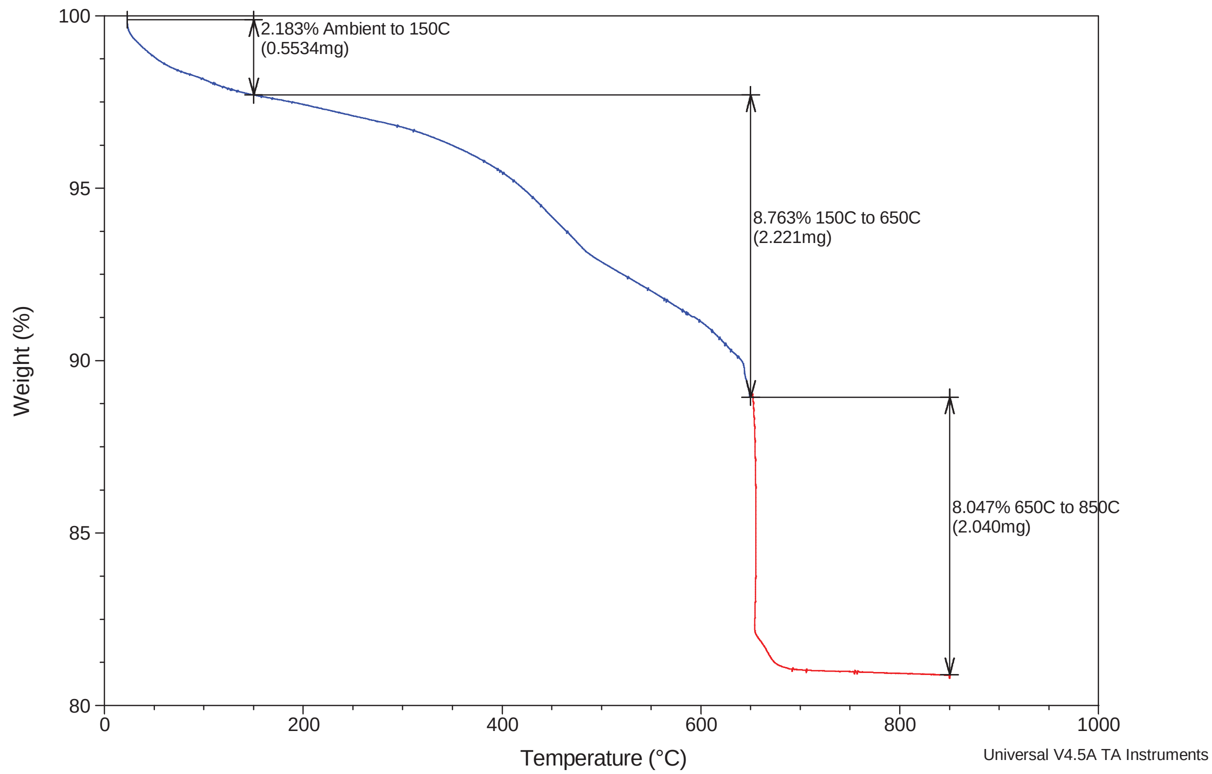

Figure 5. TGA thermogram and analysis of the S5-M6-1002 sample (S151078).

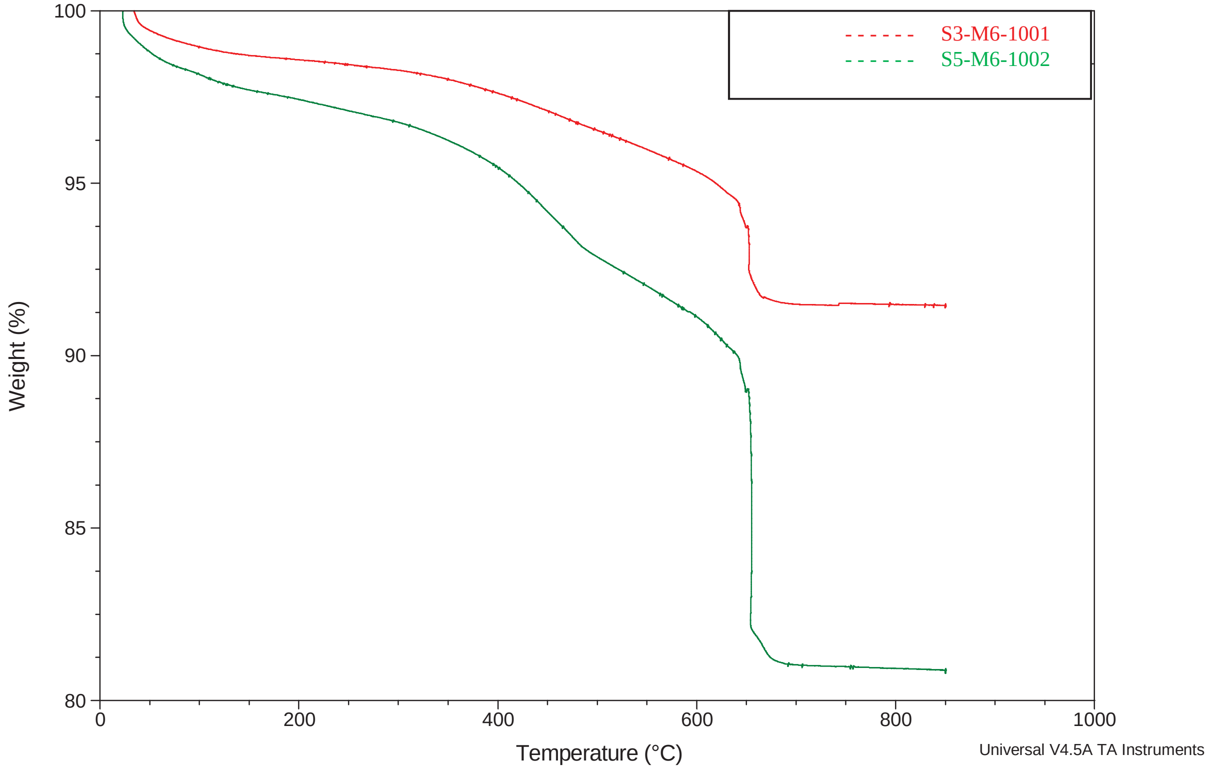

Figure 6. Overlay of the TGA thermograms of the S3-M6-1001 sample and S5-M6-1002 sample.

ATTACHMENT 2:
PHOTOGRAPHS OF BALEFILL AREA COVER

Figure C-1. Large cracks in Balefill Area cover trending toward the combustion area. The combustion area is located near the center-most fence post in the background.

Figure C-2. Cracks in the Balefill Area cover extending to the combustion area. The combustion area is at the fence line between the two people in the background.

Figure C-3. Crack in the Balefill Area cover trending toward the combustion area. The combustion area is located in the depression at the fence line.

Figure C-5. Large cracks along the southern edge of the Balefill Area.

APPENDIX O
ZONE B DATA SUMMARY TABLES
PASCO LANDFILL NPL SITE

Prepared by

Amec Foster Wheeler Environmental & Infrastructure, Inc.

7376 SW Durham Road

Portland, Oregon 97224

August 2017

Table O-1
Pasco Landfill Zone B Soil Sample Results
Dioxins/Furans

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	Total TCDD	Total PeCDD	Total HxCDD	Total HpCDD	Total TCDF	Total PeCDF	Total HxCDF	Total HpCDF	Total TEQ (1/2 MRLs)
Draft Ecological Screening Level					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.00
					pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	11.0	11.0	0.960 U	1.40 U	2.00 U	2.50 U	2.20 U	11.0 U	73.0 J	0.840 U	1.20 U	1.50 U	1.00 U	0.600 U	0.620 U	0.670 U	1.70 U	0.670 U	3.60 U	2.10 U	8.00 U	6.30 U	25.0	0.840 U	1.50 U	1.00 U	1.70 U	2.03
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	21.0	21.0	1.30 U	1.90 U	1.10 U	1.40 U	1.20 U	1.90 U	14.0 U	0.650 U	1.30 U	1.80 U	1.30 U	1.30 U	1.30 U	1.40 U	0.990 U	0.720 U	3.70 U	1.30 U	6.50 U	1.40 U	2.60 U	0.650 U	1.80 U	1.40 U	0.990 U	2.39
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	31.0	31.0	0.850 U	2.10 U	1.40 U	1.70 U	1.40 U	2.90 U	8.50 U	0.470 U	1.00 U	1.20 U	4.90 U	0.720 U	0.690 U	0.750 U	11.0 U	0.980 U	5.10 U	0.850 U	6.80 U	1.80 U	2.90 U	0.920 U	1.20 U	1.70 U	11.0 U	2.35
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	41.0	41.0	0.770 U	1.30 U	0.520 U	0.640 U	0.550 U	1.40 U	3.80 U	0.410 U	0.770 U	0.560 U	4.10 U	0.480 U	0.490 U	0.530 U	9.70 U	1.30 U	4.30 U	0.770 U	7.50 U	0.640 U	3.60 U	1.10 U	1.10 U	0.640 U	9.70 U	1.58
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	11.0	11.0	1.60 U	2.20 U	1.60 U	1.90 U	1.70 U	4.80 U	53.0 J	0.840 U	1.80 U	2.30 U	13.0 U	1.40 U	2.50 U	2.10 U	47.0	10.0 U	2,600	1.60 U	7.90 U	1.90 U	8.50 U	2.70	16.0	1.90 U	110	4.86
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	21.0	21.0	1.30 U	1.30 U	1.10 U	1.40 U	1.20 U	3.40 U	33.0 J	1.50 U	1.10 U	1.40 U	0.870 U	0.860 U	0.880 U	0.960 U	1.00 U	1.10 U	3.40 U	1.30 U	8.10 U	1.40 U	8.60 U	1.50 U	1.40 U	1.40 U	1.20 U	2.00
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	31.0	31.0	0.720 U	0.960 U	0.850 U	1.00 U	0.890 U	2.20 U	13.0 U	0.490 U	0.790 U	1.00 U	0.520 U	0.520 U	0.530 U	0.590 U	1.60 U	1.90 U	59.0	0.720 U	6.30 U	1.00 U	2.90 U	0.750 U	1.00 U	1.00 U	1.90 U	1.32
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	46.0	46.0	1.10 U	1.40 U	1.40 U	1.70 U	1.50 U	0.700 U	9.10 U	1.00 U	1.30 U	1.70 U	1.60 U	1.50 U	1.60 U	1.70 U	0.590 U	0.780 U	3.10 U	1.10 U	7.60 U	1.70 U	1.60 U	1.00 U	1.70 U	1.70 U	0.780 U	2.14
RI Phase II (Philip Env. Serv. Corp.)	B-13	05/01/95	10.0	10.0	0.160 U	0.220 U	0.270 U	0.330 U	0.250	2.16	18.0	0.560	0.130 U	0.120 U	0.130	0.110 U	0.290 UR	0.130 U	0.230	0.140 U	0.650	0.0700 U	0.110 U	0.860	4.58	1.31	1.49	0.290 UR	0.650	0.391
RI Phase II (Philip Env. Serv. Corp.)	B-13	05/01/95	20.0	20.0	0.180 U	0.180 U	0.170 U	0.270 U	0.310 U	0.260 U	1.42	14.0	0.130 U	0.150 U	0.130 U	0.110 U	0.250 UR	0.120 U	0.180	0.130 U	0.270	0.0700 U	0.110 U	0.670	3.03	0.210	0.0800 U	0.290 UR	0.330	1.68
RI Phase II (Philip Env. Serv. Corp.)	B-14	05/01/95	10.0	10.0	0.150 U	0.140 U	0.250 U	0.290 U	0.280	2.19	18.8	0.760	0.250 U	0.230 U	0.200 U	0.170 U	0.280 UR	0.180 U	0.280	0.160 U	0.680	0.0700 U	0.110 U	1.46	4.78	2.09	2.73	0.280 UR	0.560	0.387
RI Phase II (Philip Env. Serv. Corp.)	B-14	05/01/95	20.0	20.0	0.210 U	0.170 U	0.210 U	0.270	0.360	3.09	19.0	3.91	0.170 U	0.180 U	0.170	0.130 U	0.290 UR	0.140 U	0.620	0.280 U	1.32	1.18	0.110 U	1.85	5.83	12.9	16.2	0.290 UR	1.49	0.774
RI Phase II (Philip Env. Serv. Corp.)	B-15	05/01/95	10.0	10.0	0.350 U	0.190 U	0.250 U	0.300 U	0.260	2.40	18.9	0.280	0.180 U	0.170 U	0.190 U	0.160 U	0.290 UR	0.180 U	0.270	0.100 U	0.490	0.0700 U	0.110 U	1.45	4.99	0.650	0.650	0.290 UR	0.610	0.454
RI Phase II (Philip Env. Serv. Corp.)	B-15	05/01/95	20.0	20.0	0.310 U	0.210 U	0.230 U	0.210	0.360	2.35	22.2	0.290 U	0.160 U	0.150 U	0.160 U	0.140 U	0.260 UR	0.150 U	0.170 U	0.200 U	0.170	0.480	0.110 U	2.28	5.42	0.0700 U	0.0800 U	0.260 UR	0.200 U	0.435
RI Phase II (Philip Env. Serv. Corp.)	MW-26S	05/01/95	5.0	5.0	0.21 U	0.24 U	0.18	1.97	0.70	25.2	81.0	27.3	0.42 U	0.43 U	0.66	0.23	0.29 UR	0.18 U	4.88	0.34	13.3	11.4	0.75	9.86	42.2	69.1	79.7	7.26	14.2	3.76
RI Phase II (Philip Env. Serv. Corp.)	MW-26S	05/01/95	15.5	15.5	0.09 U	0.17 U	0.29 U	0.26 U	0.44 U	2.14	18.7	0.26	0.15 U	0.12 U	0.09 U	0.07 U	0.29 UR	0.08 U	0.20 U	0.22 U	0.17 U	0.55	0.11 U	2.94	4.72	0.53	0.77	0.29 UR	0.20 U	0.281
RI Phase II (Philip Env. Serv. Corp.)	BKG-01	04/27/95	0.5	0.5	0.170 U	0.190 U	0.380 U	0.320	0.510	4.59	44.3	0.360	0.330 U	0.320 U	0.590	0.220	0.290 UR	0.110 U	0.210 UR	0.380 U	0.250 UR	0.320	0.110 U	2.90	9.53	0.360	0.540	0.290 UR	0.200 UR	0.534
RI Phase II (Philip Env. Serv. Corp.)	BKG-02	04/27/95	0.5	0.5	0.250 U	0.170 U	0.140 U	0.210	0.340	0.22 R	0.790 UR	0.150 U	0.190 U	0.190 U	0.120 U	0.100 U	0.290 UR	0.110 U	0.210 UR	0.0700 U	0.250 UR	0.0700 U	0.110 U	2.10	0.220 UR	0.0700 U	0.0800 U	0.290 UR	0.200 UR	0.343
RI Phase II (Philip Env. Serv. Corp.)	BKG-03	04/27/95	0.5	0.5	0.180 U	0.130 U	0.180 U	0.210 U	0.310	0.22 R	0.790 UR	0.100 U	0.130 U	0.120 U	0.0500 U	0.0400 U	0.190 UR	0.0400 U	0.130 U	0.150 U	0.110 UR	0.0700 U	0.110 U	1.48	0.220 UR	0.0700 U	0.0800 U	0.290 UR	0.200 U	0.248
RI Phase II (Philip Env. Serv. Corp.)	BKG-04	04/27/95	0.5	0.5	0.210 U	0.290 U	0.160 U	0.330	0.440	0.22 R	42.3	0.550	0.170 U	0.160 U	0.130 U	0.100 U	0.290 UR	0.120 U	0.210 UR	0.190 U	0.250 UR	0.0700 U	0.110 U	2.71	7.55	1.02	0.0800 U	0.290 UR	0.200 UR	0.463
RI Phase II (Philip Env. Serv. Corp.)	BKG-05	04/27/95	0.5	0.5	0.190 U	0.170 U	0.230 U	0.270 U	0.370	0.22 R	27.4	0.170 U	0.170 U	0.170 U	0.220 U	0.180 U	0.290 UR	0.210 U	0.210 UR	0.180 U	0.250 UR	0.0700 U	0.110 U	1.93	6.50	0.0700 U	0.0800 U	0.290 UR	0.200 UR	0.334
RI Phase II (Philip Env. Serv. Corp.)	BKG-06	04/27/95	0.5	0.5	0.160 U	0.390 U	0.230	0.760	0.710	12.9	129	1.39	0.710	0.700	2.00	0.580	0.290 UR	0.100 U	3.56	0.220 UR	0.250 UR	0.870	0.110 U	6.63	44.2	5.64	6.75	7.02	8.01	1.30
RI Phase II (Philip Env. Serv. Corp.)	BKG-07	04/27/95	0.5	0.5	0.160 U	0.190 U	0.180 U	0.210 U	0.250	0.22 R	0.790 UR	0.140 U	0.130 U	0.130 U	0.0900 U	0.0800 U	0.290 UR	0.0900 U	0.120 UR	0.130 U	0.230 UR	0.0700 U	0.110 U	1.54	0.220 UR	0.0700 U	0.0800 U	0.290 UR	0.200 U	0.277
RI Phase II (Philip Env. Serv. Corp.)	BKG-08	04/27/95	0.5	0.5	0.390 U	0.200 U	0.460 U	0.490 U	0.430 U	0.22 R	32.2	0.210 U	0.160 U	0.150 U	0.130 U	0.100 U	0.290 UR	0.120 U	0.210 UR	0.110 U	0.250 UR	0.0700 U	0.110 U	1.82	6.67	0.0700 U	0.0800 U	0.290 UR	0.200 UR	0.443
RI Phase II (Philip Env. Serv. Corp.)	BKG-09	04/27/95	0.5	0.5	0.110 U	0.100 U	0.160 U	0.190 U	0.290	0.22 R	35.2	0.0600 U	0.0700 U	0.0700 U	0.0900 U	0.0700 U	0.230 UR	0.0800 U	0.210 UR	0.0600 U	0.250 UR	0.0700 U	0.110 U	1.82	6.67	0.0700 U	0.0800 U	0.230 UR	0.200 UR	0.201
RI Phase II (Philip Env. Serv. Corp.)	BKG-10	04/27/95	0.5	0.5	0.160 U	0.200 U	0.140	0.390	0.500	5.85	56.0	0.930	0.390	0.410	1.21	0.340	0.290 UR	0.0700 U	2.12	0.220 UR	0.250 UR	0.290	0.110 U	3.93	11.5	4.52	4.37	4.26	4.43	0.781
RI Phase II (Philip Env. Serv. Corp.)	BKG-11	04/27/95	0.5	0.5	0.450 U	0.340 U	0.310 U	0.390 U	0.310 U	0.22 R	0.790 UR	0.260 U	0.240 U	0.190 U	0.180 U	0.150 U	0.290 UR	0.190 U	0.180 U	0.230 U	0.230 U	0.0700 U	0.110 U	0.730	0.220 UR	0.0700 U	0.0800 U	0.290 UR	0.200 U	0.533
RI Phase II (Philip Env. Serv. Corp.)	BKG-12	04/27/95	0.5	0.5	0.180 U	0.190 U	0.230 U	0.250 U	0.220 U	0.22 R	24.4	0.140 U	0.110 U	0.100 U	0.150 U	0.120 U	0.290 UR	0.140 U	0.180 U	0.200 U	0.250 UR	0.0700 U	0.110 U	1.42	0.220 UR	0.0700 U	0.0800 U	0.290 UR	0.200 UR	0.288
RI Phase II (Philip Env. Serv. Corp.)	BKG-13	04/27/95	0.5	0.5	0.190 U	0.190 U	0.212 U	0.320	0.400	0.22 R	0.790 UR	0.100 U	0.150 U	0.120 U	0.160 U	0.130 U	0.290 UR	0.150 U	0.210 UR	0.0900 U	0.250 UR	0.0700 U	0.110 U	2.64	6.29	0.0700 U	0.0800 U	0.290 UR	0.200 UR	0.336
RI Phase II (Philip Env. Serv. Corp.)	BKG-14	04/27/95	0.5	0.5	0.200 U	0.190 U	0.140	0.600	0.630	8.76	82.7	1.47	0.590	0.650	1.71	0.510	0.290 UR	0.110 U	3.16	0.220 UR	0.250 UR	1.15	0.110 U	5.02	16.5	6.81	6.53	5.56	6.60	1.08
RI Phase II (Philip Env. Serv. Corp.)	BKG-15	04/27/95	0.5	0.5	0.170 U	0.280 U	0.180 U	0.220 U	0.180 U	0.22 R	0.790 UR	0.100 U	0.120 U	0.120 U	0.110 U	0.0900 U	0.230 UR	0.100 U	0.120 UR	0.140 U	0.210 UR	0.0700 U	0.110 U	1.36	0.220 UR	0.0700 U	0.0800 U	0.230 UR	0.200 UR	0.307
RI Phase II (Philip Env. Serv. Corp.)	BKG-16	04/27/95	0.5	0.5	0.190 U	0.190 U	0.170 U	0.200 U	0.350	-	0.790 UR	0.140 U	0.130 U	0.120 U	0.110 U	0.0900 U	0.290 UR	0.100 U	0.210 UR	0.0800 U	0.250 UR	0.0700 U	0.110 U	1.57	0.220 UR	0.0700 U	0.0800 U	0.290 UR	0.200 UR	0.302
RI Phase II (Philip Env. Serv. Corp.)	MW-25S	05/01/95	10.0	10.0	0.12 U	0.12 U	0.25 U	0.29 U	0.24 U	1.15	11.5	0.24	0.10 U	0.10 U	0.08 U	0.07 U	0.29 UR	0.08 U	0.13	0.089 U	0.24	0.07 U	0.11 U	0.50	2.51	0.48	0.60	0.29 UR	0.13	0.242
RI Phase II (Philip Env. Serv. Corp.)	MW-25S	05/01/95	20.0	20.0	0.30	0.70	0.41	0.51	0.52	1.24	6.76	0.90	0.74	0.53	0.36	0.39	0.29 UR	0.57	0.42	0.40	0.88	1.09	0.70	1.92	2.02	1.76	2.81	1.86	0.82	1.58
RI Phase II (Philip Env. Serv. Corp.)	MW-25S	05/01/95	30.0	30.0	0.13 U	0.13 U	0.12 U	0.15 U	0.12 U	0.49	4.19	0.22	0.08 U	0.07 U	0.09 U	0.07 U	0.28 UR	0.08 U	0.11 U	0.12 U	0.18 U	0.07 U	0.11 U	0.16 U	1.04	0.22	0.33	0.28 UR	0.20 U	0.217
RI Phase II (Philip Env. Serv. Corp.)	MW-25S	05/01/95	40.0	40.0	0.07 U	0.07 U	0.09 U	0.11 U	0.09 U	0.34	0.79 UR	0.07 U	0.10 U	0.10 U	0.07 U	0.06 U	0.22 UR	0.07 U	0.10 U	0.11 U	0.21	0.07 U	0.11 U	0.16 U	0.62	0.07 U	0.08 U	0.29 UR	0.22	0.130
Confirmation Post-Drum Removal (AMEC)	PZB0101	02/28/05	0.0	0.5	1.30	1.40 U	0.490 U	3.00 J	1.40 U	38.0	180	1.80	1.00 U	1.80 U	2.50 U	1.50 U	1.60 U	0.320 U	29.0	1.20 U	50.0	28.0	4.50	15.0	73.0	1,300	1,300	37.0	54.0	3.90
Confirmation Post-Drum Removal (AMEC)	PZB0201	02/28/05	0.0	0.5	0.270 U	0.410 U	0.290 U	1.70 U	0.560 U	30.0	98.0	0.510 U	0.380 U	0.440 U	0.930 U	0.390 U	0.350 U	0.270 U	6.40 J	0.470 U	10.0 J	2.30	0.470 U	4.90	52.0	93.0	95.0	2.80 U	18.0	1.06
Confirmation Post-Drum Removal (AMEC)	PZB0301	02/28/05	0.0	0.5	2.20 J	1.60 U	0.690 U	4.30 J	2.60 U	88.0	610	25.0 U	1.50 U	2.40 U	11.0	2.40 U	1.60 U	0.720 U	33.0	4.00 J	84.0	19.0	1.60 U	20.0	160	760	920	81.0	100.0	8.02
Confirmation Post-Drum Removal (AMEC)	PZB0401	02/28/05	0.0	0.5	0.500 U	0.400 U	0.250 U	7.50	2.40 U	140	340	1.80	0.320 U	0.970 U	1.10 U	0.430 U	0.750 U	0.220 U	32.0	1.70 U	66.0	2.00	0.560 U	35.0	260	470	300	32.0	110	3.64
Confirmation Post-Drum Removal (AMEC)	PZB0501	02/28/05	0.0	0.5	0.320 U	0.450 U	0.590 U	8.40	2.70 U	150	370	1.50 U	0.750 U	0.900 U	1.40 U	0.580 U	0.710 U	0.320 U	29.0	1.20 U	59.0	3.70	0.530 U	41.0	250	330	240	29.0	96.0	3.69
Confirmation Post-Drum Removal (AMEC)	PZB0601	02/28/05	0.0	0.5	0.200 U	0.340 U	0.280 U	1.80 U	1.00 U	36.0	160	0.520 U	0.790 U	0.590 U	2.30 U	0.640 U	0.440 U	0.200 U	7.00	1.00 U	13.0	0.420 U	0.340 U	5.00	65.0	72.0	43.0	2.60 U	20.0	1.22
Confirmation Post-Drum Removal (AMEC)	PZB0701	02/28/05	0.0	0.5	0.180 U	0.360 U	0.270 U	4.80 J	1.80 U	130	330	0.390 U	1.20 U	1.50 U	0.840 U	0.360 U	0.390 U	0.240 U	21.0	1.10 U	41.0	0.370 U	0.360 U	23.0	230	210	120	15.0	70.0	2.83
Confirmation Post-Drum Removal (AMEC)	PZB0801	02/28/05	0.0	0.5	0.300 U	0.350 U	0.280 U	8.30	2.80 U	210	430	0.490 U	2.20 U	2.70 U	0.680 U	0.300 U	0.390 U	0.270 U	30.0	1.30 U	62.0	7.90	2.70 U	58.0	380	390	190	21.0	100.0	4.41
Confirmation Post-Drum Removal (AMEC)	PZB0901	02/28/05	0.0	0.5	0.200 U	0.390 U	0.310 U	2.50 U	1.10 U	59.0	120	0.350 U	0.450 U	0.510 U	1.00 U	0.440 U	0.290 U	0.260 U	11.0	0.600 U	20.0	0.420 U	0.390 U	14.0	110	160	110	7.50	34.0	1.44
Confirmation Post-Drum Removal (AMEC)	PZB1001	02/28/05	0.0	0.5	0.170 U	0.480 U	0.400 U	3.80 J	1.20 U	77.0	240	0.470 U	0.520 U	0.630 U	0.390 U	0.310 U	0.300 U	0.300 U	13.0	0.670 U	26.0	0.390 U	0.480 U	20.0	140	130	88.0	7.90	44.0	1.96
Confirmation Post-Drum Removal (AMEC)	PZB1101	02/28/05	0.0	0.5	0.190 U	0.340 U	0.240 U	1.40 U	0.760 U	35.0	71.0	0.530 U	0.390 U	0.410 U	0.240 U	0.210 U	0.190 U	0.240 U	4.90 J	0.270 U	8.20 J	0.310 U	0.340 U	5.80	62.0	71.0	47.0	2.00 U	14.0	0.947
Confirmation Post-Drum Removal (AMEC)	PZB1102	02/28/05	0.0	0.5	0.230 U	0.580 U	0.430 U	1.50 U	0.590 U	32.0	66.0	0.430 U	0.610 U	0.700 U	0.360 U	0.310 U	0.350 U	0.360 U	4.20 J	0.460 U	7.30 J	0.310 U	0.580 U	5.20	57.0	72.0	43.0	1.70 U	13.0	1.12
Confirmation Post-Drum Removal (AMEC)	PZB1201	02/28/05	0.0	0.5	1.80	2.70 U	2.20 U	57.0	19.0	1,000	2,100	3.50	7.80	3.50 J	8.30	4.50 J	5.50 J	0.260 U	280	12.0	510	14.0	2.80	310	1,900	2,200	1,500	260	910	28.0
Confirmation Post-Drum Removal (AMEC)	PZB1301	02/28/05	0.0	0.5	0.360 U	0.350 U	0.270 U	8.20	3.10 J	150	340	0.760 U	1.80 U	2.20 U	1.10 U	0.600 U	0.750 U	0.280 U	36.0	1.90 U	64.0	2.20	0.650 U	46.0	280	320	210	27.0	110	4.02
Confirmation Post-Drum Removal (AMEC)	PZB1401	02/28/05	0.0	0.5	1.60	1.90 U	1.90 U	40.0	15.0	680	1,400	2.60	1.50 U	3.20 J	6.60	4.30 J	4.60 J	0.350 U	190	7.80	320	14.0	1.90 U	210	1,300	1,700	1,100	190	610	20.2

Table O-1
Pasco Landfill Zone B Soil Sample Results
Dioxins/Furans

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	Total TCDD	Total PeCDD	Total HxCDD	Total HpCDD	Total TCDF	Total PeCDF	Total HxCDF	Total HpCDF	Total TEQ (1/2 MRLs)
				Draft Ecological Screening Level	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.00
Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g
Confirmation Post-Drum Removal (AMEC)	PZB1501	02/28/05	0.0	0.5	0.770 J	0.680 U	0.650 U	13.0	4.70 J	220	480	1.10	3.10 J	1.20 U	1.70 U	1.00 U	1.30 U	0.320 U	59.0	2.60 U	110	8.30	1.00 U	77.0	420	770	540	52.0	190	6.49
Confirmation Post-Drum Removal (AMEC)	PZB1601	02/28/05	0.0	0.5	0.220 U	0.450 U	0.390 U	6.20	1.60 U	96.0	200	0.470 U	0.250 U	0.320 U	1.60 U	0.480 U	0.560 U	0.300 U	35.0	1.90 U	73.0	0.330 U	0.450 U	25.0	160	140	100.0	24.0	130	2.68
Pre-Excavation for Cap Installation (AMEC)	OZB-01_0-6	07/16/09	0.0	0.5	1.31	2.47 J	2.03 J	39.6	12.2	486	1,180	0.109 U	3.29 J	3.31 J	4.94	3.63 J	6.65	0.787	129	6.51	226	4.52	7.18	194	873	611	548	176	390	18.5
Pre-Excavation for Cap Installation (AMEC)	OZB-01_6-12	07/16/09	0.5	1.0	0.0998 U	0.232 U	0.341 U	1.80	0.658	24.7	60.2	0.455 U	0.268 U	0.388	0.481 U	0.307	0.400	0.222 U	5.15	0.498 U	8.12 J	11.6	1.83	16.9	43.4	48.9	58.6	8.53	13.7	0.999
Pre-Excavation for Cap Installation (AMEC)	OZB-02_0-6	07/16/09	0.0	0.5	0.101 U	0.236 U	0.346 U	1.18	0.490	18.1	43.7	0.492 U	0.272 U	0.222 U	0.746	0.117 U	0.324	0.226 U	2.78	0.505 U	4.95	6.56	0.928	7.38	30.8	37.1	47.9	6.02	6.85	0.765
Pre-Excavation for Cap Installation (AMEC)	OZB-03_0-6	07/16/09	0.0	0.5	0.101 U	0.234 U	0.344 U	2.11	0.975	35.7	122	0.511 U	0.545	0.587	1.01	0.467	0.545	0.269	7.03	0.598	12.6	3.10	0.469	12.8	60.9	48.6	43.5	11.9	18.8	1.41
Pre-Excavation for Cap Installation (AMEC)	OZB-04_0-6	07/16/09	0.0	0.5	0.102 U	0.238 U	0.349	0.448	0.453	7.53	39.8	0.0972 U	0.274 U	0.224 U	0.492 U	0.118 U	0.268	0.227	1.02	0.509 U	2.26	0.536	0.238	4.15	15.0	4.33	3.42	1.18	2.58	0.518
Pre-Excavation for Cap Installation (AMEC)	OZB-05_0-6	07/16/09	0.0	0.5	0.378 J	0.247 U	0.363 U	2.99	1.50	57.1	376	0.101 U	1.38	0.999	0.919	0.476	0.701	0.236 U	8.23	0.615	22.8	9.05	2.18	20.2	109	283	188	16.7	24.5	2.32
Pre-Excavation for Cap Installation (AMEC)	OZB-06_0-6	07/16/09	0.0	0.5	0.106 U	0.246 U	0.361 U	0.381 U	0.209 U	2.31	9.73	0.297 U	0.283 U	0.232 U	0.509 U	0.122 U	0.278 U	0.235 U	0.509 U	0.527 U	0.656 U	0.106 U	0.246 U	0.933	4.62	4.34	3.64	0.187	0.509 U	0.366
Pre-Excavation for Cap Installation (AMEC)	OZB-07_0-6	07/16/09	0.0	0.5	0.101 U	0.236 U	0.346 U	0.365 U	0.200 U	5.00	19.3	0.288 U	0.271 U	0.222 U	0.488 U	0.117 U	0.266 U	0.225 U	0.696	0.505 U	1.43	0.101 U	0.236 U	2.04	10.4	6.54	4.63	0.825	1.80	0.386
Pre-Excavation for Cap Installation (AMEC)	OZB-08_0-6	07/16/09	0.0	0.5	0.101 U	0.234 U	0.344 U	0.363 U	0.199 U	0.686	3.49 J	0.0958 U	0.270 U	0.221 U	0.485 U	0.116 U	0.265 U	0.224 U	0.485 U	0.502 U	0.625 U	0.101 U	0.234 U	0.199 U	1.58	0.378	0.221 U	0.116 U	0.485 U	0.322
Pre-Excavation for Cap Installation (AMEC)	OZB-09_0-6	07/16/09	0.0	0.5	0.102 U	0.239 U	0.350 U	0.679	0.203 U	10.8	32.4	0.0975 U	0.275 U	0.225 U	0.494 U	0.119	0.269 U	0.228 U	1.76	0.511 U	3.04	0.836	0.239 U	3.63	19.5	27.5	20.8	3.15	4.61	0.509
Pre-Excavation for Cap Installation (AMEC)	OZB-10_0-6	07/16/09	0.0	0.5	0.105 U	0.243 U	0.358 U	0.377 U	0.207 U	2.94	16.7	0.0995 U	0.280 U	0.229 U	0.504 U	0.121 U	0.275 U	0.233 U	0.687	0.521 U	1.42	0.105 U	0.243 U	1.08	5.89	10.9	15.2	1.26	1.44	0.366
Pre-Excavation for Cap Installation (AMEC)	PZB-03_6-12	07/16/09	0.5	1.0	0.106 U	0.248 U	0.364 U	0.384 U	0.211 U	4.05	12.1	0.303 U	0.285 U	0.234 U	0.513 U	0.123	0.280 U	0.237 U	0.573	0.531 U	1.08	0.660	0.248 U	1.38	7.34	6.96	5.28	0.745	1.46	0.396
Pre-Excavation for Cap Installation (AMEC)	PZB-12_6-12	07/16/09	0.5	1.0	0.105 U	0.244 U	0.358 U	1.84	0.840	31.6	96.4	0.523 U	0.281 U	0.230 U	0.505 U	0.169	0.275 U	0.233 U	5.80	0.522 U	11.6	1.22	0.255	12.8	59.7	49.9	36.6	7.78	17.2	1.00
Pre-Excavation for Cap Installation (AMEC)	PZB-12_6-12D	07/16/09	0.5	1.0	0.101 U	0.236 U	0.346 U	1.78	0.852	30.9	97.3	0.0964 U	0.276	0.222 U	0.488 U	0.124	0.266 U	0.226 U	5.35	0.505 U	10.7	0.942	0.244	12.1	58.4	47.3	35.3	7.11	15.8	0.954
Pre-Excavation for Cap Installation (AMEC)	PZB-14_12-18	07/16/09	1.0	1.5	0.116 U	0.582	0.396 U	2.90	0.969	43.2	119	1.05	2.06	1.50	1.35	0.901	1.02	0.335	12.3	0.665	22.5	33.7	5.25	31.6	92.1	314	311	26.3	32.4	2.63
Pre-Excavation for Cap Installation (AMEC)	PZB-14_6-12	07/16/09	0.5	1.0	2.06	2.67	1.28	51.4	13.2	571	1,470	0.0975 U	8.88	7.75	8.77	5.17	11.1	1.69	300	13.3	622	37.0	10.4	207	1,010	2,130	1,620	354	934	26.1
Pre-Excavation for Cap Installation (AMEC)	PZB-15_6-12	07/16/09	0.5	1.0	0.101 U	0.235 U	0.345 U	1.71	0.606	32.7	71.8	0.302 U	0.271 U	0.387	0.487 U	0.211	0.353	0.225 U	3.82	0.504 U	7.15	1.36	0.599	12.1	58.6	22.5	17.1	6.44	10.3	1.04
Post-Excavation for Cap Installation (AMEC)	OZB-01A	12/21/10	0.0	0.5	1.12	2.45 J	0.300 U	57.9	18.9	692	4,500	1.92	4.16	4.30	9.28	5.89	11.7	0.196 U	359	18.7	1,090	15.6	10.9	210	1,520	369	526	297	1,620	27.9
Post-Excavation for Cap Installation (AMEC)	OZB-01B	12/21/10	0.0	0.5	1.31	0.293 J	2.80 J	57.8	17.9	559	1,610	2.21	4.10	4.51	7.95	5.29	11.0	1.88 J	301	15.3	549	19.7	12.4	200	1,090	470	570	276	1,260	23.2
Post-Excavation for Cap Installation (AMEC)	OZB-01C	12/21/10	0.0	0.5	0.0801 U	0.186 U	0.274 U	2.26 J	0.158 U	30.9	74.5	0.237 J	0.396 J	0.405 J	0.386 U	0.362 J	0.574 J	0.229 J	8.40	0.675 J	13.7	1.53	0.319 J	10.8	61.0	37.1	29.5	10.1	33.0	1.10
Post-Excavation for Cap Installation (AMEC)	OZB-01D	12/21/10	0.0	0.5	0.0849 U	0.198 U	0.290 U	0.307 U	0.168 U	2.15 J	7.03 J	0.226 J	0.370 J	0.186 U	0.409 U	0.0982 U	0.223 U	0.189 U	0.463 J	0.424 U	0.628 J	0.0849 U	0.198 U	0.337 J	4.75	1.28	2.43 J	0.811 J	1.60 J	0.318
Post-Excavation for Cap Installation (AMEC)	OZB-11A	12/21/10	0.0	0.5	0.0841 U	0.308 J	0.288 U	2.21 J	1.12 J	29.5	117	0.550 J	0.703 J	0.706 J	1.23 J	0.607 J	0.598 J	0.338 J	6.56	0.419 U	13.3	22.4	3.06 J	11.9	60.8	31.0	63.5	12.1	21.8	1.66
Post-Excavation for Cap Installation (AMEC)	OZB-12A	12/21/10	0.0	0.5	0.0859 U	0.523 J	0.513 J	6.69	2.33 J	78.2	222	0.556 J	1.02 J	0.916 J	1.11 J	0.678 J	1.24 J	0.357 J	23.7	0.429 U	40.8	4.77	2.00 J	26.4	154	81.8	110	27.9	92.2	3.32
Post-Excavation for Cap Installation (AMEC)	PZB-03A	12/20/10	0.0	0.5	0.0841 U	0.196 U	0.288 U	0.304 U	0.167 U	1.06 J	4.59 J	0.263 J	0.226 U	0.185 U	0.406 U	0.0973 U	0.221 U	0.187 U	0.405 U	0.420 U	0.522 U	0.0841 U	0.196 U	0.167 U	1.06 J	0.525 J	0.362 J	0.0973 U	0.405 U	0.297
Post-Excavation for Cap Installation (AMEC)	PZB-03B	12/20/10	0.0	0.5	0.0823 U	0.192 U	0.281 U	0.297 U	0.0969	0.851 J	4.06 J	0.217 J	0.221 U	0.181 U	0.397 U	0.0952 U	0.216 U	0.183 U	0.0969	0.410 U	0.511 U	0.0823 U	0.192 U	0.163 U	2.23 J	0.170 J	0.213 J	0.0952 U	0.397 U	0.285
Post-Excavation for Cap Installation (AMEC)	PZB-03C	12/20/10	0.0	0.5	0.0817 U	0.190 U	0.279 U	0.295 U	0.162 U	5.01	14.2	0.0777 U	1.89 J	0.179 U	0.394 U	0.0945 U	0.215 U	0.182 U	0.840 J	0.407 U	1.68 J	0.883	0.190 U	1.61 J	11.1	13.9	13.1	0.332 J	3.03 J	0.370
Post-Excavation for Cap Installation (AMEC)	PZB-03D	12/20/10	0.0	0.5	0.0818 U	0.190 U	0.280 U	0.295 U	0.162 U	0.295 U	3.57 J	0.271 J	0.219 U	0.179 U	0.394 U	0.0946 U	0.215 U	0.182 U	0.394 U	0.408 U	0.508 U	0.0818 U	0.190 U	0.162 U	1.18 J	0.0778 U	0.179 U	0.0946 U	0.394 U	0.281
Post-Excavation for Cap Installation (AMEC)	PZB-12A	12/21/10	0.0	0.5	0.0938 U	0.218 U	0.321 U	2.50 J	0.186 U	33.6	120	0.533	0.252 U	1.18 J	1.07 J	0.506 J	0.857 J	0.209 U	8.17	0.468 U	14.6	5.17	1.27 J	11.9	74.2	76.1	64.1	15.7	29.2	1.56
Post-Excavation for Cap Installation (AMEC)	PZB-12A Dup	12/21/10	0.0	0.5	0.250 J	0.207 U	0.212	2.01 J	0.869 J	28.8	114	0.769	1.11 J	1.35 J	0.429 U	0.580 J	1.04 J	0.295 J	11.1	0.513 J	19.3	4.95	2.36 J	11.5	65.8	143	89.7	19.2	34.6	1.83
Post-Excavation for Cap Installation (AMEC)	PZB-12B	12/21/10	0.0	0.5	0.109 J	0.187 U	0.274 U	0.290 U	0.604 J	16.1	65.4	0.391 J	0.372 J	0.534 J	0.626 J	0.0928 U	0.502 J	0.179 U	3.50	0.400 U	6.13 J	4.96	1.16 J	5.08	34.9	21.2	26.2	6.48	11.9	0.847
Post-Excavation for Cap Installation (AMEC)	PZB-12C	12/21/10	0.0	0.5	0.140 J	0.295 J	0.283 U	1.91 J	0.884 J	25.9	90.0	0.451 J	0.222 U	0.930 J	1.17 J	0.590 J	0.217 U	0.309 J	7.23	0.604 J	14.6	3.34	0.994 J	10.7	58.0	32.8	36.2	11.2	25.8	1.64
Post-Excavation for Cap Installation (AMEC)	PZB-12D	12/21/10	0.0	0.5	0.0814 U	0.190 U	0.278 U	1.16 J	0.689 J	16.4	72.3	0.452 J	0.374 J	0.695 J	0.600 J	0.365 J	0.508 J	0.181 U	3.33 J	0.397	6.87	3.32	1.38 J	6.91	35.5	17.7	19.7	6.74	11.1	0.981
Post-Excavation for Cap Installation (AMEC)	PZB-14A	12/21/10	0.0	0.5	0.0919 U	0.214 U	0.314 U	0.433 J	0.182 U	4.56	28.0	0.351 J	0.246 U	0.202 U	0.443 U	0.130 J	0.328 J	0.205 U	0.967 J	0.458 U	2.50 J	0.0919 U	0.214 U	1.21 J	12.5	4.26	3.15 J	1.58 J	3.16 J	0.435
Post-Excavation for Cap Installation (AMEC)	PZB-14B	12/21/10	0.0	0.5	0.214 J	0.373 J	0.284 U	4.96	1.63 J	53.5	128	0.575 J	0.559 J	0.182 U	0.718 J	0.725 J	1.18 J	0.185 U	21.5	1.32 J	36.8	3.20	0.800 J	21.4	115	87.4	78.8	24.2	78.7	2.45
Post-Excavation for Cap Installation (AMEC)	PZB-14C	12/21/10	0.0	0.5	0.0919 U	0.214 U	0.314 U	0.332 U	0.233 J	2.61 J	13.4	0.369 J	0.246 U	0.202 U	0.443 U	0.106 U	0.242 U	0.205 U	0.443 U	0.458 U	0.571 U	0.0919 U	0.214 U	0.233 J	7.03	0.717 J	0.512 J	0.106 U	0.443 U	0.364
Post-Excavation for Cap Installation (AMEC)	PZB-14D	12/21/10	0.0	0.5	0.0849 U	0.198 U	0.167	0.306 U	0.168 U	0.306 U	14.3	0.345	0.228 U	0.186 U	0.409 U	0.0982 U	0.160	0.189 U	0.842 J	0.423 U	2.08 J	0.0849 U	0.198 U	1.19 J	3.67	1.01	1.31 J	1.44 J	2.57 J	0.315
Post-Excavation for Cap Installation (AMEC)	PZB-15A	12/21/10	0.0	0.5	0.0798 U	0.186 U	0.273 U	0.288 U	0.158 U	1.44 J	7.39	0.0760 U	0.214 U	0.175 U	0.385 U	0.0923 U	0.210 U	0.178 U	0.385 U	0.398 U	0.496 U	0.0798 U	0.186 U	0.158 U	1.44 J	0.0760 U	0.175 U	0.0923 U	0.385 U	0.266
Post-Excavation for Cap Installation (AMEC)	PZB-15B	12/21/10	0.0	0.5	0.0840 U	0.195 U	0.287 U	0.303 U	0.166 U	1.27 J	4.71 J	0.316 J	0.225 U	0.184 U	0.405 U	0.0971 U	0.221 U	0.187 U	0.0974	0.419 U	0.521 U	0.0840 U	0.195 U	0.166 U	2.91 J	1.16	1.02 J	0.0971 U	0.405 U	0.303
Post-Excavation for Cap Installation (AMEC)	PZB-15C	12/21/10	0.0	0.5	0.0787 U	0.183 U	0.269 U	0.284 U	0.147	1.09 J	6.43 J	0.214	0.211 U	0.173 U	0.379 U	0.0910 U	0.207 U	0.175 U	0.379 U	0.392 U	0.489 U	0.0787 U	0.183 U	0.438 J	2.99 J	0.319 J	0.173 U	0.0910 U	0.379 U	0.283
Post-Excavation for Cap Installation (AMEC)	PZB-15D	12/21/10	0.0	0.5	0.0816 U	0.190 U	0.0494	0.294 U	0.163 J	2.19 J	11.8	0.0776 U	0.219 U	0.0974	0.0919	0.0943 U	0.0741	0.182 U	0.498 J	0.407 U	0.795 J	0.362 J	0.190 U	0.571 J	5.40	2.70	4.89	0.808 J	1.23 J	0.271
ZoneB_April2012 (AMEC)	B001-0-3	04/10/12	0	3	3.06	5.21	1.15 J	21.6	5.08	241	707	19.1	12.3	11.9	3.48 J	3.25 J	7.61	1.27 J	97.2	4.08 J	177	91.6	53.3	95.8	480	3660 J	2910 J	252	275	23
ZoneB_April2012 (AMEC)	B002-0-3	04/10/12	0	3	6.14	9.64	1.62 U	37.9	10.7	400	1130	41.7	25.2	21.9	5.73	5.08	14	2.6 U	169	6.12	363	154	99.3	175	793	9690 J	6210 J	439	488	51
ZoneB_April2012 (AMEC)	B003-0-3	04/10/12	0	3	0.56 U	0.646 U	0.735 U	2.76 J	1.21 J	41.2	90.8	1.99	1.1 U	0.913 J	0.893 J	0.634 U	0.861 U	0.966 U	7.69	2.42 U	12.3	12.9	2.92 J	17.6	75.8	177	166	10.1	19.4	2.26
ZoneB_April2012 (AMEC)	B004-0-3	04/10/12	0	3	0.674 U	0.313 U	0.548 U	0.522 U	0.552 U	8.12	18.9	1.3	0.554 U	0.518 U	0.416 J	0.396 U	0.436 U	0.576 U	1.2 J	0.891 U	2.16 J	0.674 U	0.313 U	2.66 J	16	57	42.8	2.25 J	2.5 J	1.01
ZoneB_April2012 (AMEC)	B005-0-3	04/10/12	0	3	0.543 U	1.96 J	1.15 U	9.31	4.08 J	141	245	4.51	2.92 J	2.66 J	1.34 J	1.35 J	1.93 J	1.32 U	20.7	2.22 U	35.6	36.6	9.49	58.1	266	912 J	716	55.6	56.5	8.43
ZoneB_April2012 (AMEC)	B006-0-3	04/10/12	0	3	0.728 U	0.388 U	0.596 U	1.89 J	0.924 J	41.8	83.3	2.03	0.712 U	0.748 U	0.918 U	0.776 U	0.92 U	1.19 U	4.94 J	1.2 U	9.43 J	1.33	0.388 U	17.5	81.9	152	158	10.6	4.94 J	1.89
ZoneB_April2012 (AMEC)	B007-0-3	04/10/12	0	3	0.439 U	0.255 U	0.532 U	0.515 U	0.539 U	4.95	22.1	0.758 U	0.717 J	0.432 U	0.455 U	0.414 U	0.492 U	0.655 U	0.71 U	0.817 U	1.87 U	0.439 U	0.255 U	0.869 J	9.37	4.67	6.76	0.758 J	0.489 U	0.714
ZoneB_April2012 (AMEC)	B008-0-3	04/10/12	0	3	0.521 U	0.404 U	0.71 U	2.27 U	1.18 U	39	65.3	0.952 U	0.761 J	0.58 U	1.37 U	1.33 U	1.62 U	1.94 U	4.35 J	1.1 U	6.79 J	8.04	1.8 J	16.8	78.3	83.6	111	6.51	11	1.49
ZoneB_April2012 (AMEC)	B009-0-3	04/10/12	0	3	0.598 U	0.306 U	0.624 U	0.622 U	0.644 U	4.09 J	15.1	0.768 U	0.823 U	0.805 U	0.519 U	0.434 U	0.527 U	0.713 U	0.653 U	0.843 U	1.49 J	0.598 U	0.306 U	0.622 U	8.16	1.12	0.171 U	0.434 U	0.521 U	0.88

Table O-1
Pasco Landfill Zone B Soil Sample Results
Dioxins/Furans

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	Total TCDD	Total PeCDD	Total HxCDD	Total HpCDD	Total TCDF	Total PeCDF	Total HxCDF	Total HpCDF	Total TEQ (1/2 MRLs)
Draft Ecological Screening Level					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.00
					pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g
ZoneB_April2012 (AMEC)	B010-0-3	04/10/12	0	3	0.668 U	0.351 U	0.453 U	0.474 U	0.445 U	9	23	0.745 U	0.424 U	0.436 U	0.328 U	0.284 U	0.384 U	0.449 U	1.87 U	1.56 U	2.98 J	3.86	0.351 U	0.994 J	18	26.7	30.3	1.35 J	2.79 J	0.867
ZoneB_April2012 (AMEC)	B011-0-3	04/10/12	0	3	0.414 U	0.228 U	0.622 U	0.575 U	0.616 U	4.14 J	16.5	0.52 U	0.379 U	0.381 U	0.551 U	0.494 U	0.569 U	0.722 U	0.91 U	0.677 U	1.5 U	0.414 U	0.228 U	0.651 J	7.94	0.52 U	2.8 J	0.853 J	0.375 U	0.668
ZoneB_April2012 (AMEC)	B012-0-3	04/10/12	0	3	0.693 U	0.357 U	1.28 U	1.19 U	1.27 U	14.5	50.6	2 U	2.02 J	0.937 J	1.44 U	0.681 U	0.821 U	1.08 U	4.29 J	1.33 U	7.83 J	12.9	0.881 J	1.38 J	27.2	177	147	6.41	10.8	1.46
ZoneB_April2012 (AMEC)	B013-0-3	04/10/12	0	3	0.649 U	0.293 U	0.576 U	0.555 U	0.584 U	5.19	17.5	0.736 U	0.338 U	0.34 U	0.356 U	0.338 U	0.409 U	0.525 U	0.691 U	0.911 U	1.14 U	0.649 U	0.293 U	0.555 U	9.49	22.2	14.5	0.5 J	0.62 U	0.796
ZoneB_April2012 (AMEC)	B014-0-3	04/10/12	0	3	0.5 U	0.306 U	0.579 U	0.836 U	0.599 U	12.1	46.5	0.893 U	1 J	0.419 U	0.704 J	0.362 U	0.425 U	0.534 U	2.63 J	1.24 U	4.27 J	3.22	0.306 U	4.32 J	22	36.4	30.5	3.69 J	6.96	0.933
ZoneB_April2012 (AMEC)	B015-0-3	04/10/12	0	3	0.559 U	0.299 U	0.356 U	0.358 U	0.37 U	4.24 J	22.2	0.685 J	0.512 J	0.423 U	0.48 U	0.423 U	0.547 U	0.677 U	1.07 J	0.677 U	1.4 J	1.65	0.299 U	0.356 U	8.32	9.04	10.6	0.691 J	2.38 J	0.8
ZoneB_April2012 (AMEC)	B016-0-3	04/10/12	0	3	0.568 U	0.238 U	0.507 U	0.47 U	0.501 U	3.14 J	14.4	0.78 U	0.396 J	0.41 U	0.425 U	0.414 U	0.464 U	0.595 U	0.823 U	0.494 U	0.975 J	0.568 U	0.238 U	0.47 U	6.03	7.66	13.3	2.56 J	0.815 J	0.724
ZoneB_April2012 (AMEC)	B017-0-3	04/10/12	0	3	0.416 U	0.213 U	0.833 U	0.742 U	0.81 U	5.91	34.3	0.767 J	0.428 J	0.324 J	0.433 U	0.301 J	0.271 U	0.299 U	2.08 J	0.547 U	3.89 J	0.416 U	0.58 J	1.66 J	11.4	40.1	34.8	2.46 J	4.48	0.786
ZoneB_April2012 (AMEC)	B018-0-3	04/10/12	0	3	0.703 U	0.4 U	0.457 U	0.668 J	0.475 U	10.4	45.7	1.22	0.922 J	0.441 U	0.687 J	0.392 U	0.465 U	0.595 U	3.16 J	0.603 U	4.49 J	5.34	0.4 U	4.18 J	19.9	44.5	60.6	4.23 J	7.02	1.18
ZoneB_April2012 (AMEC)	B019-0-3	04/10/12	0	3	0.856 U	0.703 U	5.07	32.3	14.1	641	1800	0.972 U	0.919 J	0.597 U	2.17 J	1.77 J	3.26 J	2.42 U	109	4.82 J	190	1.7	0.795 J	233	1340	50.1	55.9	106	374	14.6
ZoneB_April2012 (AMEC)	B019-3-6	04/10/12	3	6	0.0839 U	0.0826 U	0.160 U	0.152 U	0.161 U	1.63 J	11.7	0.199 J	0.0868 U	0.088 U	0.0956 U	0.0895 U	0.106 U	0.124 U	0.246 J	0.274 U	0.481 U	0.0645 U	0.0826 U	0.152 U	4.56 J	0.328 U	0.0306 U	0.123 U	0.688 J	0.176
ZoneB_April2012 (AMEC)	B020-0-3	04/10/12	0	3	0.69 U	0.383 U	0.672 U	0.69 U	0.706 U	8.44	39.7	1.77	1.09 J	0.529 U	0.493 U	0.461 U	0.545 U	0.682 U	3.91 J	1.14 U	6.09 J	6.98 J	1.71 J	2.31 J	17.2	110 J	133 J	7.65 J	7.68	1.18
ZoneB_April2012 (AMEC)	B020-0-3D	04/10/12	0	3	0.581 U	0.493 U	0.548 U	0.479 U	0.526 U	5.42	24.2	0.845 J	0.99 J	0.776 U	0.54 U	0.485 U	0.609 U	0.799 U	2.24 J	0.46 U	2.57 J	3.3	0.493 U	0.479 U	10.6	53.1	65.1	1.59 J	4.37 J	1.05
ZoneB_April2012 (AMEC)	B021-0-3	04/10/12	0	3	0.22 U	0.18 U	0.251 U	0.22 U	0.241 U	0.941 U	4.14 J	0.465 U	0.205 U	0.196 U	0.2 U	0.194 U	0.239 U	0.287 U	0.424 J	0.278 U	0.901 J	0.756 J	0.18 U	0.351 J	0.837 J	10.7	17.4	0.276 J	0.816 J	0.369
ZoneB_April2012 (AMEC)	B022-0-3	04/10/12	0	3	0.621 J	0.629 J	0.319 U	0.849 J	0.42 J	7.24	37.8	2.33	1.3 J	1.13 J	0.499 J	0.568 J	0.936 U	0.284 U	9.96	0.345 U	17.2	22.2	4.72 J	4.5 J	14.3	357	493	21.3	17.2	2.33
ZoneB_April2012 (AMEC)	B023-0-3	04/10/12	0	3	0.195 U	0.161 U	0.272 U	0.26 U	0.274 U	1.95 U	12.4	0.463 U	0.42 J	0.188 U	0.184 J	0.133 U	0.161 U	0.194 U	0.574 J	0.367 U	0.764 J	0.571 J	0.213 J	0.26 U	2.14 J	1.59	4.44 J	0.184 J	1.42 J	0.361
ZoneB_April2012 (AMEC)	B024-0-3	04/10/12	0	3	0.159 U	0.19 J	0.218 U	0.833 J	0.308 U	10.6	31.4	0.673 U	0.169 U	0.182 U	0.15 U	0.129 U	0.153 U	0.186 U	1.57 J	0.336 U	2.41 J	1.6	0.439 J	4.63 J	19.3	28	23.9	2.65 J	3.72 J	0.663
ZoneB_April2012 (AMEC)	B025-0-3	04/10/12	0	3	0.225 U	0.192 U	0.343 U	2.62 J	1.02 J	56.2 J	134 J	1.17 U	0.512 J	0.247 U	0.307 J	0.231 J	0.482 J	0.283 U	8.67	0.619 U	15.1	1.31	0.399 J	15.5	120	133	77.6	12.6	26.7	1.57
ZoneB_April2012 (AMEC)	B026-0-3	04/10/12	0	3	0.263 U	0.366 J	0.377 U	1.48 U	0.666 J	25.7	56.7	0.975 U	0.917 U	0.619 U	0.631 J	0.418 J	0.582 J	0.517 U	4.51 J	1.44 U	7.07 J	8.41	2.34 J	8.03	44	60.2	82.3	10.9	12.5	1.41
ZoneB_April2012 (AMEC)	B027-0-3	04/10/12	0	3	0.179 U	0.192 U	0.269 U	1.31 J	0.59 U	20.8	81.8	0.693 U	0.289 J	0.336 U	0.639 J	0.276 U	0.423 J	0.402 U	4.67	0.337 J	8.66 J	0.7 J	0.341 J	6.61	37.3	13.3	19.6	7.42	14.7	0.947
ZoneB_April2012 (AMEC)	B028-0-3	04/10/12	0	3	0.182 U	0.155 U	0.381 U	2.19 J	0.909 J	31.8	124	0.727 U	0.191 J	0.156 U	0.222 U	0.212 U	0.391 J	0.312 U	9.11	0.532 U	17	0.228 J	0.155 U	7.91	57.5	38.2	27.5	10.2	29.5	1.13
ZoneB_April2012 (AMEC)	B029-0-3	04/10/12	0	3	0.162 U	0.185 U	0.364 U	3.44 J	1.45 J	68.3	233	0.461 U	0.245 U	0.288 U	0.78 U	0.274 J	0.486 J	0.36 U	10.4	0.671 U	17.9	0.667 J	0.467 J	18.4	124	19.9	15	12.5	34.8	1.79
ZoneB_April2012 (AMEC)	B030-0-3	04/10/12	0	3	0.35	0.449 J	0.775 U	43	12.4	505	1970	0.882 J	1.42 J	0.862 J	3.44 J	1.67 J	4.81 J	0.868 U	185	9.23	410	4.78	2.11 J	173	898	268	191	177	697	15.4
ZoneB_April2012 (AMEC)	B030-3-6	04/10/12	0	3	0.066 U	0.0779 J	0.132 U	0.129 U	0.138 J	1.12 J	6.34 J	0.310 J	0.0565 U	0.0554 U	0.091 U	0.0892 U	0.103 U	0.126 U	0.143 U	0.162 U	0.257 U	0.066 U	0.0779 J	0.138 J	1.12 J	0.310 U	0.026 U	0.0892 U	0.109 U	0.213
ZoneB_April2012 (AMEC)	B031-0-3	04/10/12	0	3	0.218 U	0.401 U	0.885 U	11.5	4.56	141	650	0.76 U	1.13 J	1.18 U	2.35 J	0.969 J	2.1 J	0.958 U	48.3	2.04 J	85.9	2.37	0.46 J	53.5	266	176	116	62.1	168	4.88
ZoneB_April2012 (AMEC)	B032-0-3	04/10/12	0	3	0.488 U	0.397 U	0.695 U	6.42	1.99 J	87.3	331	0.893 J	2.08 J	1.27 J	0.99 J	0.624 U	1.56 J	1.03 U	26.8	1.64 J	56.9	5.39	0.585 J	31.8	171	408	305	41.1	89.4	3.7
ZoneB_April2012 (AMEC)	B033-0-3	04/10/12	0	3	0.376 U	0.187 U	0.502 U	0.95 J	0.504 U	18.9	57.1	0.715 U	0.562 J	0.414 J	0.281 J	0.251 U	0.309 J	0.406 U	3.11 J	0.856 U	5.43 J	2.35	0.307 J	2.73 J	36	122	77.4	5.37	8.95	0.974
ZoneB_April2012 (AMEC)	B034-0-3	04/10/12	0	3	0.109 U	0.162 U	0.182 U	0.562 U	0.342 U	7.64	31.2	0.133 U	0.231 U	0.151 U	0.147 U	0.133 U	0.224 U	0.176 U	1.29 J	0.331 U	2.56 U	0.109 U	0.122 U	2.65 U	14.7	26	17.9	2.31 U	3.74 J	0.379
ZoneB_April2012 (AMEC)	B035-0-3	04/10/12	0	3	0.147 U	0.113 J	0.171 U	0.168 U	0.239 U	1.38 U	6.65 U	0.165 U	0.122 U	0.127 U	0.112 U	0.125 U	0.147 J	0.17 U	0.314 U	0.177 U	0.454 U	0.147 U	0.215 U	0.296 U	3.18 J	3.27	2.37 U	0.296 U	0.288 J	0.301
ZoneB_April2012 (AMEC)	B036-0-3	04/11/12	0	3	0.0662 U	0.0787 U	0.117 U	0.118 U	0.122 U	1.2 U	6 U	0.127 U	0.0979 U	0.0642 U	0.0854 U	0.0873 U	0.0975 U	0.117 U	0.247 J	0.117 U	0.305 U	0.0662 U	0.0787 U	0.237 U	2.55 U	1.3 U	0.969 U	0.0854 U	0.45 J	0.15
ZoneB_April2012 (AMEC)	B037-0-3	04/11/12	0	3	0.0946 U	0.0987 U	0.207 U	0.316 U	0.203 U	8.91	20.4	0.166 U	0.146 U	0.118 U	0.116 U	0.108 U	0.135 U	0.199 U	0.665 J	0.299 U	1.12 U	0.0946 U	0.0987 U	1.93 U	19.8	7.59	5 U	0.693 U	1.71 J	0.319
ZoneB_April2012 (AMEC)	B038-0-3	04/11/12	0	3	0.0993 U	0.103 J	0.272 U	0.547 U	0.273 U	2.89 J	11 U	0.185 U	0.103 U	0.11 U	0.158 U	0.149 U	0.186 U	0.258 U	0.442 J	0.334 U	0.644 U	0.0993 U	0.103 U	1.42 U	5.44	0.51 U	1.38 U	0.186 U	0.898 J	0.338
ZoneB_April2012 (AMEC)	B039-0-3	04/11/12	0	3	0.0904 U	0.0809 U	0.217 U	0.209 U	0.221 U	0.476 U	3.55 U	0.125 U	0.119 U	0.0803 U	0.0781 U	0.0787 U	0.0904 U	0.12 U	0.197 J	0.173 U	0.333 U	0.0904 U	0.0809 U	0.209 U	1.27 U	0.295 U	0.119 U	0.0781 U	0.197 J	0.173
ZoneB_April2012 (AMEC)	B040-0-3	04/11/12	0	3	0.103 U	0.087 U	0.16 U	0.156 U	0.164 U	0.913 U	7.16 U	0.131 U	0.098 U	0.0755 U	0.0702 U	0.0723 U	0.0841 U	0.119 U	0.157 J	0.204 U	0.447 U	0.103 U	0.087 U	0.38 U	2.34 J	0.131 U	0.0443 U	0.0702 U	0.157 J	0.176
ZoneB_April2012 (AMEC)	B040-0-3D	04/11/12	0	3	0.0822 U	0.0742 U	0.171 U	0.167 U	0.175 U	0.983 U	6.24 U	0.148 U	0.067 U	0.0668 U	0.0746 U	0.0765 U	0.0869 U	0.115 U	0.11 J	0.147 U	0.237 U	0.0822 U	0.0985 U	0.324 U	2.68 J	0.116 U	0.0369 U	0.0746 U	0.11 J	0.152
ZoneB_April2012 (AMEC)	B041-0-3	04/11/12	0	3	0.105 U	0.0789 U	0.197 U	0.192 U	0.201 U	0.813 U	4.52 U	0.128 U	0.0737 U	0.0715 U	0.0685 U	0.0651 U	0.0803 U	0.112 U	0.185 J	0.159 U	0.339 U	0.105 U	0.0789 U	0.192 U	1.72 U	0.128 U	0.038 U	0.0651 U	0.185 J	0.168
ZoneB_April2012 (AMEC)	B042-0-3	04/11/12	0	3	0.165 U	0.157 U	0.261 U	0.246 U	0.261 U	1.18 U	7.67 U	0.261 U	0.157 U	0.152 U	0.188 U	0.179 U	0.226 U	0.327 U	0.433 J	0.597 U	0.842 U	0.165 U	0.157 U	0.353 U	3.05 J	1.11	0.0633 U	0.179 U	0.433 J	0.305
ZoneB_April2012 (AMEC)	B043-0-3	04/11/12	0	3	0.26 U	0.189 U	0.361 U	0.331 U	0.355 U	0.79 U	3.13 U	0.202 U	0.166 U	0.17 U	0.177 U	0.156 U	0.2 U	0.288 U	0.538 J	0.467 U	0.613 U	0.26 U	0.189 U	0.331 U	1.02 U	0.394 U	0.166 U	0.156 U	0.538 J	0.368
ZoneB_April2012 (AMEC)	B044-0-3	04/11/12	0	3	0.132 U	0.133 U	0.232 U	0.223 U	0.234 U	2.69 J	12.1	0.189 U	0.119 U	0.115 U	0.148 U	0.145 U	0.181 U	0.268 U	0.667 J	0.458 U	0.913 U	0.132 U	0.133 U	0.408 U	6.14	6.16	3.87 U	0.749 U	1.54 J	0.272
ZoneB_April2012 (AMEC)	B045-0-3	04/11/12	0	3	0.143 U	0.117 U	0.284 U	0.259 U	0.278 U	1.33 U	6.31 U	0.155 U	0.154 U	0.146 U	0.114 U	0.107 U	0.126 U	0.182 U	0.345 U	0.329 U	0.615 U	0.143 U	0.117 U	0.259 U	1.33 U	0.506 U	0.0568 U	0.107 U	0.18 U	0.247
ZoneB_April2012 (AMEC)	B046-0-3	04/11/12	0	3	0.189 U	0.257 U	0.433 U	1.93 J	0.922 J	46.9	93.6	0.985 U	0.678 U	0.323 U	0.413 U	0.203 U	0.395 J	0.367 U	5.61	0.862 U	9.81 J	0.6 J	0.257 U	14.8	96.7	50.3	40.1	7.99	15.9	1.42
ZoneB_April2012 (AMEC)	B047-0-3	04/11/12	0	3	0.189 U	0.12 U	0.207 U	0.696 J	0.279 J	9.66	28.2	0.242 U	0.0778 U	0.101 U	0.131 U	0.137 U	0.156 U	0.197 U	3.05 J	0.296 U	6.06 J	0.189 U	0.12 U	2.9 J	18.3	5.24	4.43 J	2.64 J	9.38	0.473
ZoneB_April2012 (AMEC)	B048-0-3	04/11/12	0	3	0.18 U	0.11 U	0.178 J	0.704 J	0.384 U	2.14 J	11.3	0.125 U	0.0965 U	0.0712 U	0.0954 U	0.0949 U	0.108 U	0.141 U	0.246 U	0.209 U	0.384 U	0.18 U	0.557 U	6.25	5.1 J	1.07 J	0.434 U	0.112 U	0.133 U	0.308
ZoneB_April2012 (AMEC)	B049-0-3	04/11/12	0	3	0.187 U	0.118 U	0.437 J	4.74 J	1.24 U	92.5	347	0.202 U	0.182 U	0.204 U	0.465 U	0.314 J	0.548 U	0.245 U	21.4	0.87 J	39.5	0.645 J	1.12 J	24.1	190	30.7	27.3	20.5	71.7	2.08
ZoneB_April2012 (AMEC)	B050-0-3	04/11/12	0	3	0.207 U	0.143 U	0.321 U	1.36 U	0.408 J	29.2	73.1	0.205 U	0.217 U	0.119 U	0.155 U	0.155 U	0.215 U	0.233 U	4.44 J	0.39 U	7.29 J	0.266 J	0.199 U	8.05	52.1	29.9	25.5	5.08 J	12.6	0.665
ZoneB_April2012 (AMEC)	B051-0-3	04/11/12	0	3	0.24 U	0.151 U	0.238 U	1.07 J	0.398 U	4.28 J	9.68 J	0.172 U	0.0999 U	0.0987 U	0.141 U	0.138 U	0.156 U	0.202 U	0.177 U	0.278 U	0.392 U	15.3	10.4	12.1	7.78	1.06	0.0739 U	0.138 U	0.177 U	0.432
ZoneB_April2012 (AMEC)	B052-0-3	04/11/12	0	3	0.25 U	0.153 U	0.282 U	0.558 U	0.311 U	12.6	28.8	0.211 U	0.115 U	0.187 U	0.14 U	0.136 U	0.17 U	0.215 U	1.61 J	0.404 U	3.05 J	0.25 U	0.153 U	3.28 J	22.9	12.8	14.4	2.6 J	4.55 J	0.498
ZoneB_April2012 (AMEC)	B053-0-3	04/11/12	0	3	0.182 U	0.125 U	0.198 U	0.195 U	0.21 U	1.23 J	6.6 U	0.168 U	0.112 U	0.0782 U	0.106 U	0.104 U	0.12 U	0.158 U	0.179 U	0.285 U	0.432 U	0.182 U	0.125 U	0.195 U	2.85 J	0.168 U	0.0731 U	0.104 U	0.179 U	0.246
ZoneB_April2012 (AMEC)	B054-0-3	04/11/12	0	3	0.185 U	0.121 U	0.266 U	0.264 U	0.285 U	1.92 J	11.1	0.152 U	0.0911 U	0.0776 U	0.0964 U	0.0991 U	0.11 U	0.147 U	0.154 U	0.251 U	0.399 U	0.185 U	0.121 U	0.782 J	4.48 J	0.152 U	0.177 U	0.0964 U	0.154 U	0.262
ZoneB_April2012 (AMEC)	B055-0-3	04/11/12	0	3	0.281 U	0.165 U	0.239 U	0.253 U	0.265 U	1.8 J	10.6	0.243 U	0.113 U	0.112 U	0.152 U	0.145 U	0.174 U	0.227 U	0.205 U	0.34 U	0.615 U	0.281 U	0.165 U	0.569 J	4.2 J	1.17	0.311 U	0.145 U	0.205 U	0.351
ZoneB_April2012 (AMEC)	B056-0-3	04/11/12	0	3	0.217 U	0.135 U	0.219 U	0.673 U	0.363 U	13.3	30.7	0.251 J	0.137 U	0.136 U	0.107 U	0.103 U	0.126 U	0.159 U	1.31 J	0.316 U	2.05 J	0.217 U	0.135 U	4.47 J	23	14.1	11.3	0.539 U	3.38 J	0.44

Table O-1
Pasco Landfill Zone B Soil Sample Results
Dioxins/Furans

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	Total TCDD	Total PeCDD	Total HxCDD	Total HpCDD	Total TCDF	Total PeCDF	Total HxCDF	Total HpCDF	Total TEQ (1/2 MRLs)
Draft Ecological Screening Level					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.00
					pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g
ZoneB_April2012 (AMEC)	B057-0-3	04/11/12	0	3	0.226 U	0.109 U	0.201 U	0.202 U	0.215 U	1.41 J	7.27 U	0.176 U	0.082 U	0.0775 U	0.111 U	0.112 U	0.135 U	0.171 U	0.183 U	0.285 U	0.527 U	0.226 U	0.109 U	0.584 J	3.12 J	0.176 U	0.0724 U	0.111 U	0.183 U	0.265
ZoneB_April2012 (AMEC)	B058-0-3	04/11/12	0	3	0.234 U	0.144 U	0.199 U	0.201 U	0.215 U	2.62 J	9.29 J	0.227 U	0.102 U	0.0965 U	0.132 U	0.133 U	0.156 U	0.203 U	0.355 U	0.348 U	0.594 U	0.234 U	0.144 U	0.199 U	2.62 J	1.14	0.731 U	0.385 U	0.217 U	0.31
ZoneB_April2012 (AMEC)	B059-0-3	04/11/12	0	3	0.261 U	0.137 U	0.392 U	0.62 U	0.403 U	15.8	33.8	0.326 U	0.135 U	0.123 U	0.17 U	0.176 U	0.203 U	0.263 U	1.52 J	0.355 U	2.24 J	0.261 U	0.137 U	5.28	29.5	7.5	11.9	2.05 J	4.48 J	0.52
ZoneB_April2012 (AMEC)	B060-0-3	04/11/12	0	3	0.269 U	0.185 U	1.02 J	3.81 J	1.54 J	78.8	160	0.194 U	0.261 U	0.199 U	0.286 J	0.225 J	0.438 U	0.221 U	8.31	0.521 U	13.2	0.269 U	0.225 U	30.9 J	142	42.4	34.7	10.5 J	25.4	1.93
ZoneB_April2012 (AMEC)	B060-0-3D	04/11/12	0	3	0.28 U	0.21 U	0.883 J	2.64 J	1.24 J	48.1	104	0.296 U	0.195 U	0.246 U	0.243 J	0.193 U	0.281 U	0.283 U	5.77	0.554 U	8.6	0.28 U	0.554 U	17.7	86.1	38.5	31.5	5.87	17.4	1.45
ZoneB_April2012 (AMEC)	B061-0-3	04/11/12	0	3	0.251 U	0.191 U	0.514 J	1.59 J	0.695 U	29.2	66.4	0.297 U	0.365 J	0.259 U	0.307 U	0.181 U	0.335 U	0.259 U	4.7 J	0.416 U	7.21 J	0.311 J	0.191 U	12.4	50.6	55.3	41.7	4.61 J	12.7	1.01
ZoneB_April2012 (AMEC)	B062-0-3	04/11/12	0	3	0.222 U	0.139 U	0.4 J	1.02 J	0.349 J	19.7	42.6	0.4 U	0.275 U	0.168 U	0.152 J	0.152 U	0.199 U	0.222 U	2.64 J	0.316 U	4.76 J	0.222 U	0.139 U	7.51	34.3	33.2	24.3	2.63 J	7.1	0.671
ZoneB_April2012 (AMEC)	B063-0-3	04/11/12	0	3	0.367 J	0.351 U	1.69 J	5.31	1.78 J	99.4	224	0.562 U	0.769 J	0.554 U	0.552 J	0.339 J	0.821 U	0.412 U	15.9	0.757 J	27.2	5.24	1.55 J	38.5	177	175	127	22.6	49.1	2.96
ZoneB_April2012 (AMEC)	B064-0-3	04/11/12	0	3	0.275 U	0.205 U	0.529 J	3.83 J	1.62 J	74.9	148	1.69	1.02 J	1.03 J	0.367 J	0.377 J	0.739 U	0.227 U	9.82	0.429 U	16.6	1.04	1.94 J	25.5	132	237	194	19.3	27.8	2.38
ZoneB_April2012 (AMEC)	B065-0-3	04/11/12	0	3	0.269 U	0.17 U	0.41 J	2.4 J	0.879 U	43.7	108	0.442 J	0.322 U	0.34 U	0.306 J	0.251 J	0.504 U	0.275 U	9.17	0.418 U	16.1	0.269 U	0.762 U	15.2	75.9	95.2	67.3	13.3	26.5	1.36
ZoneB_April2012 (AMEC)	B066-0-3	04/11/12	0	3	0.309 U	0.303 U	0.574 U	1.61 J	0.89 J	29.6	66.8	0.689 U	0.81 U	0.439 U	0.645 J	0.322 J	0.514 J	0.497 U	4.88	0.888 U	7.13 J	4.1	0.501 J	12.3	57.6	76.3	61.4	10.4	12.3	1.17
ZoneB_April2012 (AMEC)	B067-0-3	04/11/12	0	3	0.229 U	0.2 U	0.354 U	0.336 U	0.355 U	1.93 J	8.98 J	0.384 U	0.215 U	0.225 U	0.225 U	0.219 U	0.286 U	0.392 U	0.421 U	0.434 U	0.968 U	0.229 U	0.2 U	0.336 U	1.93 J	0.384 U	0.0801 U	0.219 U	0.257 U	0.404
ZoneB_April2012 (AMEC)	B068-0-3	04/11/12	0	3	1.66	0.668 U	1.09 U	5.02 J	1.64 J	93	228	1.59	3.55 J	2.56 J	1.04 J	0.621 U	1.72 J	0.987 U	18.1	1.08 U	36.7	22	4.59 J	36.2	185	1040 J	868	61	56.1	7.61
ZoneB_April2012 (AMEC)	B068-3-6	04/11/12	3	6	0.0703 U	0.0731 U	0.149 U	0.144 U	0.230 J	1.38 J	7.67 J	0.153 U	0.0648 U	0.0542 U	0.0709 U	0.0695 U	0.0831 U	0.100 U	0.0974 U	0.158 U	0.158 U	0.0703 U	0.0731 U	0.809 J	3.37 J	0.087 U	0.0302 U	0.0695 U	0.0974 U	0.156
ZoneB_April2012 (AMEC)	B069-0-3	04/11/12	0	3	0.598 J	0.513 J	0.976 U	11.4	4.21 J	200	455	1.34	1.98 J	1.85 J	1.99 J	1.36 J	2.89 J	0.876 U	42.7	2.27 J	64.4	12.2	2.7 J	77.9	446	476 J	332	64.1	125	7.55
ZoneB_April2012 (AMEC)	B070-0-3	04/11/12	0	3	0.335 U	0.317 U	0.57 U	0.674 J	0.565 U	10.1	56.7	0.631 U	0.463 U	0.473 U	0.5 U	0.483 U	0.57 U	0.777 U	1.95 J	0.87 U	2.85 J	0.335 U	0.317 U	5.02 J	21.4	18	14.5	1.15 J	1.95 J	0.819
ZoneB_April2012 (AMEC)	B071-0-3	04/11/12	0	3	0.829 U	1.23 U	2.52 U	15.3	5.96	328	912	1.68	4.14 J	2.23 J	2.52 J	1.59 J	3.34 J	2.3 U	67	4.32 U	127	13.4	3.92 J	109	680	733 J	561	103	224	8.97
ZoneB_April2012 (AMEC)	B071-3-6	04/11/12	3	6	0.0883 U	0.108 U	0.245 U	0.232 U	0.245 U	1.95 J	10.7	0.198 J	0.106 U	0.107 U	0.0858 U	0.0745 U	0.0953 U	0.119 U	0.112 U	0.172 U	0.139 U	0.0883 U	0.108 U	1.49 J	4.72 J	0.198 U	0.0325 U	0.0745 U	0.112 U	0.214
ZoneB_April2012 (AMEC)	B072-0-3	04/11/12	0	3	0.559 U	0.563 U	1.38 U	4.46 J	2.39 J	55.6	126	1.06	0.815 U	0.836 J	1.07 J	0.886 J	1.24 J	1.28 U	17.5	2.07 U	27	2.76	1.42 J	20.3	115	121	103	32.4	51.1	2.87
ZoneB_April2012 (AMEC)	B073-0-3	04/11/12	0	3	0.516 U	0.388 U	0.711 U	0.612 U	0.678 U	8.46	37.5	0.798 U	0.48 U	0.47 U	0.414 U	0.384 U	0.429 U	0.65 U	1.16 J	1.06 U	2.09 U	0.978	0.388 U	1.54 J	17.2	7.11	5.58	0.384 U	3.08 J	0.877
ZoneB_April2012 (AMEC)	B074-0-3	04/11/12	0	3	0.384 U	0.437 U	0.747 U	0.735 U	0.767 U	5	20.3	0.702 J	0.319 U	0.335 U	0.534 U	0.443 U	0.591 U	0.869 U	0.883 U	1.55 U	1.3 J	0.384 U	0.437 U	2.68 J	10.6	4.13	1.87 J	0.443 U	0.883 U	0.839
ZoneB_April2012 (AMEC)	B075-0-3	04/11/12	0	3	0.423 U	0.296 U	0.703 U	0.606 U	0.67 U	8.07	42.9	1.05 U	0.66 U	0.678 U	0.399 U	0.382 U	0.458 U	0.584 U	1.6 U	1.15 U	2.57 U	0.423 U	0.296 U	1.92 J	17	7.21	6.08	1.42 J	0.721 U	0.817
ZoneB_April2012 (AMEC)	B076-0-3	04/12/12	0	3	0.351 U	0.378 U	0.814 U	0.763 U	0.812 U	6.94	26.9	0.589 U	0.331 U	0.345 U	0.484 U	0.448 U	0.529 U	0.744 U	1.52 J	1.81 U	2.15 U	0.351 U	0.378 U	2.57 J	14.3	9.36	8.09	1.48 J	4.28 J	0.782
ZoneB_April2012 (AMEC)	B077-0-3	04/12/12	0	3	0.387 U	0.395 U	0.892 U	1.06 U	0.888 U	19	41.3	0.659 U	0.467 U	0.471 U	0.488 U	0.454 U	0.516 U	0.761 U	5.35	2.66 U	7.55 J	0.387 U	0.395 U	6.41	40.3	50.7	39	6.58	14.7	1.02
ZoneB_April2012 (AMEC)	B078-0-3	04/12/12	0	3	0.557 U	0.614 U	1.46 U	4.48	1.86 J	86.2	183	1.11	0.918 U	0.911 J	0.886 J	0.662 J	1.2 J	1.02 U	20.5	3.05 U	29.2	4.96	2.4 J	31.8	174	170	135	32.6	58.8	3.18
ZoneB_April2012 (AMEC)	B079-0-3	04/12/12	0	3	1.03 U	0.639 U	2.02 U	6.96	3.4 J	140	277	4.26	2.94 J	2.01 J	1.24 J	0.903 U	2.36 J	1.73 U	38.5	2.6 U	56.8	10.6	1.13 J	51.9	289	716 J	410	60.2	113	4.54
ZoneB_April2012 (AMEC)	B080-0-3	04/12/12	0	3	0.759 U	0.539 U	1.95 U	2.52 J	1.95 U	45.2 J	118 J	1.25	0.952 U	0.603 U	0.545 U	0.461 U	0.98 J	0.849 U	12.1 J	1.62 U	18.6 J	2.07 J	0.607 J	16.2 J	91.4 J	126 J	103 J	7.01 J	34 J	2.13
ZoneB_April2012 (AMEC)	B080-0-3D	04/12/12	0	3	0.666 U	0.668 U	1.57 U	8.17	3.63 J	125	282	1.93	1.37 J	1.39 J	1.53 J	1.48 J	2.84 J	1.75 U	44.8	2.3 U	62.1	6.05	2.41 J	53.5	250	274	236	66.8	125	4.53
ZoneB_April2012 (AMEC)	B081-0-3	04/12/12	0	3	0.727 U	0.885 U	2.55 U	13.4	4.79 J	266	569	1.43	3.39 J	2.21 J	2.18 J	1.68 J	3.78 J	2.31 U	71.1	3.7 U	114	8.84	2.56 J	83.8	506	645 J	445	95.9	217	7.77
ZoneB_April2012 (AMEC)	B082-0-3	04/12/12	0	3	0.364 U	0.45 J	0.887 U	4.73 J	2.1 J	75.9	196	1.64	1.66 J	1.17 J	0.782 U	0.745 U	1.79 J	1.17 U	28.7	2.4 U	37.9	4.82	1.1 J	31.1	149	231	181	38.5	81.8	3.37
ZoneB_April2012 (AMEC)	B083-0-3	04/12/12	0	3	0.408 J	0.472 J	1.03 U	8.14	3.28 J	146	335	1.25	2.4 J	1.33 J	1.63 U	1.16 J	2.7 J	1.2 U	53.6	2.54 J	77.9	4.55	1.75 J	51.2	275	354	267	70.4	153	5.32
ZoneB_April2012 (AMEC)	B083-3-6	04/12/12	3	6	0.0592 U	0.0902 U	0.144 U	0.139 U	0.146 U	0.902 J	6.04 J	0.197 U	0.071 U	0.0483 U	0.0529 U	0.0521 U	0.0618 U	0.0752 U	0.0728 U	0.111 U	0.159 U	0.0671 J	0.0902 U	0.568 J	2.32 J	0.126 U	0.0476 U	0.0521 U	0.0728 U	0.134
ZoneB_April2012 (AMEC)	B084-0-3	04/12/12	0	3	0.518	0.673 U	1.54 U	11.4	4.34 J	166	348	1.57	1.67 J	1.83 J	2.89 J	1.56 J	4.12 J	1.94 U	81	3.54 J	118	12.7	3.99 J	75.1	371	430 J	323	107	256	6.72
ZoneB_April2012 (AMEC)	B085-0-3	04/12/12	0	3	0.285 J	0.495 J	0.426 J	6.91	2.53 J	91	201	1.15	0.646 U	0.903 J	1.1 J	0.98 J	1.91 J	0.281 J	31.9 J	1.59 J	43.6	2.36	2.62 J	39	164	209	160	43.3	87.7	3.92
ZoneB_April2012 (AMEC)	B086-0-3	04/12/12	0	3	0.194 J	0.405 J	0.236 U	2.91 J	1.11 J	44.3	107	0.422 J	0.365 U	0.572 J	0.597 J	0.449 J	0.972 J	0.335 U	14.6	0.831 J	18	0.943 J	1.05 J	18.2	80.9	93.8	73.3	19.2	38.5	2.09
ZoneB_April2012 (AMEC)	B087-0-3	04/12/12	0	3	0.516 U	0.813 J	0.61 J	10.2	3.51 J	126	276	0.741 J	1.01 J	1.23 J	2.21 J	1.63 J	3.64 J	0.419 U	54.9	2.65 J	61.9	3.16	3.93 J	52.3	230	208	187	78	143	5.88
ZoneB_April2012 (AMEC)	B088-0-3	04/12/12	0	3	0.223 J	0.369 J	0.339 J	5.54	2.16 J	86.7	207	1.06	0.613 U	0.562 J	1.01 J	0.909 J	1.92 J	0.457 U	30.7	1.33 J	37.3	2.12	2.47 J	33.1	164	141	114	40.1	80.6	3.36
ZoneB_April2012 (AMEC)	B089-0-3	04/12/12	0	3	0.63 U	0.544 J	0.495 J	10.2	3.3 J	154	355	0.866 J	0.904 J	1.3 J	2.26 J	1.73 J	3.52 J	0.453 J	51.5	2.36 J	58.7	5.02	6.12	64.8	304	181	180	70.8	135	5.93
ZoneB_April2012 (AMEC)	B089-3-6	04/12/12	3	6	0.0813 U	0.0862 U	0.188 U	0.180 U	0.190 U	1.44 J	8.30 J	0.253 U	0.0659 U	0.0649 U	0.0655 U	0.0647 U	0.0773 U	0.0995 U	0.0914 U	0.144 U	0.177 U	0.0813 U	0.0862 U	0.180 U	3.42 J	0.201 U	0.0328 U	0.0647 U	0.0914 U	0.162
ZoneB_April2012 (AMEC)	B090-0-3	04/12/12	0	3	0.208 U	0.307 J	0.68 J	5.06	2 J	76.1	153	0.777 J	0.517 U	0.664 J	1.09 J	0.723 J	1.41 J	0.297 U	23.6	1.12 J	29.5	1.49	2.24 J	30.4	137	92.1	79.6	30.4	60	2.87
ZoneB_April2012 (AMEC)	B091-0-3	04/12/12	0	3	0.192 U	0.142 J	0.197 U	1.76 J	0.699 J	33.9	67.2	0.437 J	0.621 U	0.318 J	0.601 J	0.282 J	0.427 J	0.208 U	4.62 J	0.337 U	5.99 J	0.304 J	0.933 J	12	60.8	30.2	30.4	7.84	12.2	1.2
ZoneB_April2012 (AMEC)	B092-0-3	04/12/12	0	3	0.385 J	0.829 J	0.966 J	11.9	4 J	193	342	0.862 J	1.15 J	1.39 J	1.75 J	1.42 J	2.75 J	0.486 J	49.3	2.41 J	64.1	14.4	5.26	73.7	344	305	238	66.5	133	6.92
ZoneB_April2012 (AMEC)	B092-3-6	04/12/12	3	6	0.0585 U	0.078 U	0.136 U	0.136 U	0.142 U	1.22 J	6.50 J	0.236 J	0.0449 U	0.0435 U	0.049 U	0.0506 U	0.0597 U	0.0707 U	0.0609 U	0.103 U	0.129 U	0.0585 U	0.078 U	0.843 J	3.09 J	0.236 U	0.0291 U	0.049 U	0.0609 U	0.146
ZoneB_April2012 (AMEC)	B093-0-3	04/12/12	0	3	0.196 U	0.124 U	0.361 U	0.483 U	0.376 U	10.4	32.5	0.416 J	0.408 U	0.273 J	0.452 J	0.174 U	0.22 U	0.311 U	2.64 J	0.273 U	2.86 J	0.204 J	0.501 J	3.34 J	19.4	21.4	22.5	4.67 J	6.3	0.574
ZoneB_April2012 (AMEC)	B094-0-3	04/12/12	0	3	0.376 J	1.01 J	1.61 U	22.4	7.84	457	762	0.78 J	0.99 J	1.74 J	2.69 J	2.5 J	5.23	0.582 J	87.7	3.73 J	85.5	4.4	5.95	150	804	323	255	114	219	12.1
ZoneB_April2012 (AMEC)	B094-3-6	04/12/12	3	6	0.0705 U	0.0908 U	0.148 U	0.140 U	0.183 J	1.84 J	12	0.207 U	0.0623 U	0.0637 U	0.060 U	0.0578 U	0.0737 U	0.0868 U	0.151 J	0.168 U	0.420 U	0.0705 U	0.0908 U	1.49 J	4.27 J	0.0966 U	0.0297 U	0.0578 U	0.408 J	0.167
ZoneB_April2012 (AMEC)	B095-0-3	04/12/12	0	3	0.292 U	0.423 J	0.362 U	5.87	2.14 J	107	197	1.32	0.95 J	0.768 J	1.31 J	0.987 J	2.07 J	0.515 U	35.2	1.66 J	25.5	1.91	2.56 J	40.2	189	174	134	47.9	84.8	3.74
ZoneB_April2012 (AMEC)	B096-0-3	04/12/12	0	3	0.553 U	0.724 J	0.724 J	15.3	5.05	298	487	1.01	1.47 J	1.81 J	2.16 J	1.91 J	3.81 J	0.625 J	62.4	2.88 J	76.2	20.9	6.43	101	508	458 J	333	85.8	166	8.72
ZoneB_April2012 (AMEC)	B097-0-3	04/12/12	0	3	0.199 U	0.118 U	0.293 U	1.03 J	0.428 J	20.5	44.4	0.481 J	0.111 U	0.141 J	0.162 U	0.145 U	0.221 U	0.242 U	3.66 J	0.418 U	4.08 J	0.199 U	0.118 U	7.27	36.5	16.9	13.5	4.2 J	8.9	0.707
ZoneB_April2012 (AMEC)	B098-0-3	04/12/12	0	3	0.24 U	0.218 U	0.384 J	3.42 J	1.34 J	69.8	127	0.656 J	0.483 U	0.584 J	1 U	0.618 J	0.923 J	0.426 U	15.2	0.697 J	12.1	0.252 J	1.37 J	24.2	116	81.4	67.2	20.9	37	2.06
ZoneB_April2012 (AMEC)	B099-0-3	04/12/12	0	3	0.244 U	0.176 U	0.425 J	2.63 J	0.972 J	55.8	102	0.642 J	0.213 U	0.316 J	0.487 J	0.395 J	0.735 J	0.312 U	11.4	0.556 U	10.6	0.256 J	0.437 J	19.9	100	72.1	46.9	15.3	28.3	1.66

Table O-1
Pasco Landfill Zone B Soil Sample Results
Dioxins/Furans

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCDF	Total TCDD	Total PeCDD	Total HxCDD	Total HpCDD	Total TCDF	Total PeCDF	Total HxCDF	Total HpCDF	Total TEQ (1/2 MRLs)
				Draft Ecological Screening Level	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.00
					pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g	pg/g
ZoneB_April2012 (AMEC)	B100-0-3	04/12/12	0	3	0.153 U	**0.468 J**	0.658 U	**5.34**	**2.07 J**	**118**	**201**	**0.676 J**	**1.08 J**	**0.639 J**	**1.12 J**	**0.613 J**	**1.05 J**	0.383 U	**16.7**	**0.906 J**	**19.6**	**13 J**	**2.76 J**	**37.5**	**200**	**109**	**107**	**24.8**	**43.6**	**3.33**
ZoneB_April2012 (AMEC)	B100-0-3D	04/12/12	0	3	0.249 U	**0.346 J**	**0.553 J**	**5.06 J**	**2 J**	**114**	**207**	**0.713 J**	**0.859 J**	**0.735 J**	**1.44 J**	**0.782 J**	**1.5 J**	0.628 U	**19.6**	0.776 U	**14.2**	**2.37**	**2.83 J**	**38.6**	**191**	**115**	**103**	**30.5**	**45.7**	**3.36**
ZoneB_April2012 (AMEC)	B101-0-3	04/12/12	0	3	**0.259 J**	**0.276 J**	0.72 U	**6.15**	**2.18 J**	**104**	**242**	**0.733 J**	0.591 U	**0.722 J**	**1.44 J**	**0.898 J**	**1.76 J**	0.82 U	**35**	**1.86 J**	**32.7**	**12.7**	**1.54 J**	**37.9**	**189**	**114**	**118**	**45**	**91.8**	**3.65**
ZoneB_April2012 (AMEC)	B102-0-3	04/12/12	0	3	0.321 U	**0.359 J**	0.579 U	**4.69 J**	**1.73 J**	**81.6**	**170**	**0.642 J**	0.513 U	**0.678 J**	**1.23 J**	**0.904 J**	**1.77 J**	0.737 U	**28.7**	1.16 U	**22.9**	**6.03**	**1.31 J**	**27.6**	**141**	**127**	**108**	**41.6**	**69.8**	**3.07**
ZoneB_April2012 (AMEC)	B103-0-3	04/12/12	0	3	0.205 U	0.189 U	0.343 U	**1.68 J**	**0.668 J**	**24**	**52.1**	**0.482 J**	0.474 U	0.213 U	**0.516 J**	**0.283 J**	**0.454 J**	0.337 U	**6.39**	0.482 U	**6.36 J**	**9.15**	**0.375 J**	**7.29**	**42.2**	**35.5**	**39.7**	**9.64**	**16**	**1.01**
ZoneB_April2012 (AMEC)	B104-0-3	04/12/12	0	3	0.169 U	0.243 U	0.242 U	**3.47 J**	**1.39 J**	**52.9**	**120**	**0.353 J**	0.435 U	0.435 U	**0.844 J**	**0.442 J**	0.648 U	0.263 U	**8.58**	**0.538 J**	**12.9**	**8.47**	**1.42 J**	**22.7**	**88.9**	**57.6**	**62.6**	**13.5**	**23.6**	**1.75**
ZoneB_April2012 (AMEC)	B105-0-3	04/12/12	0	3	0.294 U	0.408 U	0.959 U	**5.28**	**2 J**	**102**	**194**	**0.724 J**	0.826 U	0.688 U	**1.41 J**	**0.781 J**	**1.18 J**	0.467 U	**16**	**1.23 J**	**23.1**	**12.3**	**2.18 J**	**35.8**	**167**	**94.6**	**86.8**	**25.3**	**44**	**2.96**
ZoneB_April2012 (AMEC)	B106-0-3	04/12/12	0	3	0.208 U	0.354 U	0.481 U	**8.92**	**3.31 J**	**197**	**346**	**0.611 J**	0.67 U	0.629 U	**0.983 J**	**0.727 J**	**1.41 J**	0.381 U	**22.7**	**1.19 J**	**33.7**	**1.03**	**3.73 J**	**63.3**	**320**	**121**	**96.8**	**30**	**64.7**	**4.63**
ZoneB_April2012 (AMEC)	B107-0-3	04/12/12	0	3	**0.25 J**	0.44 U	0.59 U	**4.51 J**	**1.54 J**	**79**	**183**	**0.948 J**	0.858 U	**0.901 J**	**1.25 J**	0.665 U	1.11 U	0.405 U	**18.3**	**0.96 J**	**28.7**	**23.8**	**2.97 J**	**28.7**	**142**	**148**	**146**	**27.6**	**54.9**	**3.03**
ZoneB_April2012 (AMEC)	B108-0-3	04/12/12	0	3	0.258 U	0.351 U	0.425 U	**5.88**	**2.49 J**	**109**	**227**	**0.5 J**	0.687 U	0.694 U	**1.45 J**	**0.613 J**	**1.24 J**	0.388 U	**15.9**	**1.16 J**	**22.3**	**25.2**	**1.43 J**	**36.7**	**181**	**97.4**	**118**	**26.2**	**45**	**3.3**
ZoneB_April2012 (AMEC)	B109-0-3	04/12/12	0	3	**0.318 J**	0.575 U	**0.669 J**	**9.26**	**3.24 J**	**157**	**358**	**0.868 J**	0.934 U	**1.02 J**	**2.01 J**	**0.895 J**	**1.71 J**	0.722 U	**31.3**	**1.56 J**	**49.8**	**21**	**3.76 J**	**56.7**	**280**	**186**	**177**	**43.2**	**93.1**	**5.16**
ZoneB_April2012 (AMEC)	B110-0-3	04/12/12	0	3	0.314 U	0.446 U	0.774 U	**10.4**	**3.3 J**	**186**	**438**	**0.821 J**	**1.25 J**	**1.1 J**	**2.74 J**	**1.11 J**	**2.09 J**	0.618 U	**40.6**	**2.09 J**	**70.4**	**2.07**	**3.06 J**	**62.1**	**332**	**219**	**191**	**54**	**127**	**5.31**
ZoneB_April2012 (AMEC)	B111-0-3	04/12/12	0	3	0.301 U	0.248 U	0.528 U	**2.05 J**	**0.813 J**	**26**	**72.8**	0.416 U	0.653 U	0.584 U	**1.37 J**	**0.496 J**	0.616 U	0.393 U	**5.04**	0.787 U	**7.81 J**	**0.664 J**	0.248 U	**11.6**	**43.7**	**37.3**	**62.4**	**11**	**13.9**	**1.41**
ZoneB_April2012 (AMEC)	B112-0-3	04/12/12	0	3	**0.496 J**	**0.794 J**	0.709 U	**8.86**	**3.36 J**	**139**	**316**	**1.14**	**1.82 J**	**1.76 J**	**1.52 J**	**1.06 J**	**2.56 J**	0.737 U	**46.8**	**2.52 J**	**79.7**	**12.9**	**4.32 J**	**51.9**	**256**	**471 J**	**379**	**65.3**	**142**	**5.91**
ZoneB_April2012 (AMEC)	B113-0-3	04/12/12	0	3	0.364 U	0.239 U	0.459 U	**3.22 J**	**1.15 J**	**56.5**	**155**	**0.768 J**	0.445 U	0.537 U	**0.626 J**	0.399 U	0.69 U	0.537 U	**12.1**	0.749 U	**18.4**	0.364 U	**0.611 J**	**18.1**	**103**	**83.4**	**82.9**	**17.7**	**37.2**	**1.93**
ZoneB_April2012 (AMEC)	B114-0-3	04/12/12	0	3	0.263 U	0.174 U	0.471 U	**1.02 J**	0.471 U	**14.4**	**49.6**	**0.336 J**	0.444 U	0.279 U	**0.648 J**	0.288 U	0.365 U	0.491 U	**3.82 J**	0.514 U	**4.44 J**	0.263 U	0.174 U	**5.03**	**26.3**	**29.6**	**34.6**	**6.23**	**10**	**0.82**
ZoneB_April2012 (AMEC)	B115-0-3	04/13/12	0	3	0.169 U	0.203 U	0.357 U	**0.425 J**	0.355 U	**6.3**	**37.2**	**0.377 J**	0.231 U	0.229 U	0.261 U	0.231 U	0.286 U	0.402 U	**1.27 J**	0.505 U	**1.87 J**	0.169 U	0.203 U	**3.55 J**	**13.4**	**2.68**	1.14 U	0.231 U	**2.82 J**	**0.489**
ZoneB_April2012 (AMEC)	B116-0-3	04/13/12	0	3	0.169 U	0.163 U	0.305 U	**0.422 J**	**0.431 J**	**7.99**	**44.8**	0.29 U	0.181 U	0.186 U	0.329 U	0.282 U	0.359 U	0.494 U	**1.79 J**	0.475 U	**1.73 J**	0.169 U	0.236 U	**2.88 J**	**16.6**	**4.86**	**4.61 J**	**1.35 J**	**3.91 J**	**0.499**
ZoneB_April2012 (AMEC)	B117-0-3	04/13/12	0	3	0.243 U	0.201 U	0.264 U	0.53 U	0.384 U	**6.7**	**23.8**	**0.415 J**	0.127 U	0.151 U	0.186 U	0.166 U	0.207 U	0.293 U	**2.14 J**	0.824 U	**2.71 J**	0.188 U	0.231 U	**3.21 J**	**13.3**	**9.6**	**7.47**	**1.13 J**	**5.74**	**0.466**
ZoneB_April2012 (AMEC)	B118-0-3	04/13/12	0	3	0.266 U	0.274 U	0.434 U	**1.33 J**	**0.548 J**	**21.8**	**43.9**	0.484 U	**0.238 J**	0.226 U	0.302 U	0.292 U	0.359 U	0.46 U	**4.16 J**	0.637 U	**4.83 J**	**1.81**	**0.758 J**	**7.94**	**42.1**	**36.5**	**27.3**	**5.63**	**10.2**	**0.949**
ZoneB_April2012 (AMEC)	B119-0-3	04/13/12	0	3	0.212 U	0.319 U	0.546 U	**2.54 J**	**1.12 J**	**44.6**	**99.1**	0.744 U	**0.592 J**	0.423 U	0.435 U	0.307 U	**0.714 J**	0.493 U	**11.3**	0.684 U	**16.3**	**2.84**	**0.902 J**	**19.3**	**85.1**	**94.7**	**79.4**	**17.4**	**32.4**	**1.6**
ZoneB_April2012 (AMEC)	B120-0-3	04/13/12	0	3	0.341 U	0.293 U	0.838 U	**4.21 J**	**1.62 J**	**64.8**	**150**	1.44 U	**0.816 J**	0.727 U	0.694 U	**0.617 J**	**1.32 J**	0.588 U	**20.6**	1.06 U	**31.4**	**2.33 J**	**1.09 J**	**26.3**	**120**	**121**	**102**	**29.2**	**59**	**2.48**
ZoneB_April2012 (AMEC)	B120-0-3D	04/13/12	0	3	0.407 U	0.409 U	0.988 U	**4.69 J**	**1.8 J**	**63.7**	**148**	1.13 U	**0.837 J**	0.702 U	0.774 U	0.689 U	1.39 U	1.16 U	**21.4**	1.1 U	**29.6**	**0.576 J**	**1.17 J**	**26.8**	**123**	**148**	**124**	**30.2**	**60.2**	**2.54**
ZoneB_April2012 (AMEC)	B121-0-3	04/13/12	0	3	0.469 U	**0.64 J**	0.732 U	**7.78**	**2.59 J**	**121**	**263**	1.01 U	**0.931 J**	**0.929 J**	**1.86 J**	**1.2 J**	**2.87 J**	0.809 U	**53.8**	**2.48 J**	**73.6**	**3.86**	**2.92 J**	**45.3**	**226**	**183**	**152**	**66.6**	**157**	**4.86**
ZoneB_April2012 (AMEC)	B122-0-3	04/13/12	0	3	0.264 U	0.24 U	0.523 U	**3.06 J**	**1.39 J**	**56.6**	**130**	0.709 U	**0.497 J**	0.296 U	0.544 U	0.401 U	**0.699 J**	0.686 U	**10.3**	0.769 U	**12.8**	**1.36**	**0.684 J**	**20.5**	**97.8**	**45.6**	**34.3**	**14.6**	**28.4**	**1.76**
ZoneB_April2012 (AMEC)	B123-0-3	04/13/12	0	3	0.308 U	0.346 U	0.648 U	**4.65 J**	**1.62 J**	**103**	**170**	0.843 U	0.426 U	0.453 U	**0.935 J**	0.545 U	**1.11 J**	0.604 U	**16.5**	0.996 U	**20**	**3.66**	**0.895 J**	**34.8**	**172**	**76.1**	**53.1**	**23.5**	**42.7**	**2.66**
ZoneB_April2012 (AMEC)	B124-0-3	04/13/12	0	3	0.263 U	**0.258 J**	0.718 U	**3.95 J**	**1.44 J**	**98.7**	**164**	0.739 U	**0.389 J**	0.425 U	**0.755 J**	**0.604 J**	**0.899 J**	0.515 U	**12.9 J**	0.91 U	**16.3**	**0.37 J**	**0.926 J**	**29.8**	**164**	**43.9**	**37.1**	**18.6**	**36.2**	**2.6**
ZoneB_April2012 (AMEC)	B125-0-3	04/13/12	0	3	0.194 U	0.15 U	0.541 U	0.637 U	0.51 U	**12.7**	**42**	0.564 U	**0.523 J**	0.269 U	0.379 U	0.327 U	0.435 U	0.639 U	**2.66 J**	0.943 U	**2.58 J**	**0.21 J**	**0.292 J**	**4.15 J**	**23.9**	**11.1**	**7.66**	**3.66 J**	**7.07**	**0.621**
ZoneB_April2012 (AMEC)	B126-0-3	04/13/12	0	3	0.203 U	0.254 U	0.6 U	**1.86 J**	0.596 U	**33.1**	**67.2**	0.649 U	**0.726 J**	0.445 U	**0.604 J**	**0.449 J**	**0.468 J**	0.409 U	**6.24 J**	0.807 U	**7.77 J**	**3.23**	**0.435 J**	**11.9**	**58.1**	**38.2**	**35.8**	**11**	**15.5**	**1.29**
ZoneB_April2012 (AMEC)	B127-0-3	04/13/12	0	3	0.216 U	0.165 U	0.633 U	**3.77 J**	**1.35 J**	**85.5**	**129**	0.598 U	**0.433 J**	0.288 U	**0.907 J**	0.347 U	**0.692 J**	0.572 U	**8.59 J**	0.79 U	**10.3**	0.216 U	**1.04 J**	**27.3**	**138**	**42.9**	**35.5**	**13.3**	**22.3**	**2.04**
ZoneB_April2012 (AMEC)	B128-0-3	04/13/12	0	3	0.368 U	0.198 U	0.648 U	**2.18 J**	**0.916 J**	**47.5**	**89.4**	0.444 U	**0.73 J**	0.344 U	**0.871 J**	0.312 U	**0.541 J**	0.565 U	**5.03 J**	0.92 U	**6.19 J**	**2.64**	**0.537 J**	**15.1**	**83.2**	**22.5**	**22.9**	**8.65**	**13.1**	**1.49**
ZoneB_April2012 (AMEC)	B129-0-3	04/13/12	0	3	0.267 U	**0.329 J**	0.637 U	**5.19**	**1.96 J**	**119**	**198**	1.1 U	**0.914 J**	0.466 U	**1.22 J**	**0.616 J**	**1.26 J**	0.637 U	**14.6 J**	**1.04 J**	**16.8**	**9.07**	**3.15 J**	**39.8**	**205**	**85.6**	**74.1**	**24.1**	**39.6**	**3.23**
ZoneB_April2012 (AMEC)	B130-0-3	04/13/12	0	3	0.325 U	0.207 U	0.731 U	**3.56 J**	**1.6 J**	**82.1**	**136**	0.63 U	0.321 U	0.356 U	**0.98 J**	**0.507 J**	**0.635 J**	0.597 U	**9.26 J**	1.25 U	**12.3**	**8.39**	**1.32 J**	**27.2**	**137**	**51.7**	**55**	**14.9 J**	**24.3**	**2.2**
ZoneB_April2012 (AMEC)	B130-0-3D	04/13/12	0	3	0.254 U	0.338 U	0.521 U	**2.76 J**	**0.902 J**	**56.2**	**88.6**	0.862 U	0.378 U	0.397 U	0.521 U	0.423 U	**0.582 J**	0.864 U	**6.67 J**	0.87 U	**9.04 J**	**7.47**	**1.28 J**	**19.7**	**94**	**43.1**	**42.2**	**8.24 J**	**18.4**	**1.65**
ZoneB_April2012 (AMEC)	B131-0-3	05/23/12	0	3	0.149 U	0.146 U	0.28 U	0.491 U	0.342 U	**7.79**	**29.1**	0.546 U	0.288 U	**0.209 J**	0.276 U	0.241 U	0.305 U	0.368 U	**1.9 J**	0.509 U	**2.91 J**	**0.957 J**	0.146 U	**2.55 J**	**15.2**	**11.6**	**12.7**	**2.34 J**	**5.06 J**	**0.478**
ZoneB_April2012 (AMEC)	B131-0-3D	05/23/12	0	3	0.169 U	0.138 U	0.237 U	**0.629 J**	0.329 U	**8.58**	**34.5**	0.286 U	0.366 U	**0.342 J**	**0.371 J**	0.215 U	**0.271 J**	0.254 U	**2.28 J**	0.306 U	**4.8 J**	**1.09**	0.138 U	**3.4 J**	**16.7**	**14.6**	**16.6**	**3.92 J**	**5.93**	**0.59**
ZoneB_April2012 (AMEC)	B132-0-3	05/23/12	0	3	0.171 U	0.203 U	0.491 U	**0.884 J**	0.501 U	**12.7**	**36.2**	0.525 U	0.291 U	0.175 U	0.189 U	0.199 U	0.231 U	0.297 U	**3.22 J**	0.425 U	**4.63 J**	0.171 U	0.203 U	**3.5 J**	**24.4**	**23.1**	**20.5**	**3.17 J**	**8.76**	**0.597**

Notes:

pg/g = picograms per gram

Bold indicates detected concentration.

\- = not tested

Green highlight indicates that detected concentration exceeds associated screening level

Sample depths are at time of sampling, and do not represent current depths

AMEC = AMEC Earth & Environmental, Inc. (now Amec Foster Wheeler Environment & Infrastructure, Inc.)

Philip Env. Serv. Corp. = Philip Environmental Services Corporation

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

MRL = Method Reporting Limit

U = Analyte was not detected above the reported sample quantitation limit.

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Table O-2
Pasco Landfill Zone B Soil Sample Results
Herbicides

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	2,4,5-T	2,4,5-TP (Silvex)	2,4-D	2,4-DB	Bromoxynil	Dalapon	Dicamba	Dichlorprop	Dinoseb	MCPA	MCPP	Pentachlorophenol
		Draft Human Health Screening Level			35,000,000	28,000,000	35,000,000	28,000,000	70,000,000	105,000,000	105,000,000	-	3,500,000	1,750,000	3,500,000	328,000
		Draft Ecological Screening Level			-	109	27.2	-	3,160	-	-	7,590	21.8	9,270	9,270	4,500
					ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	11.0	11.0	10.0 U	10.0 U	10.0 U	10.0 U	-	100 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	-
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	21.0	21.0	10.0 U	10.0 U	10.0 U	10.0 U	-	100 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	-
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	31.0	31.0	10.0 U	10.0 U	10.0 U	10.0 U	-	100 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	-
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	41.0	41.0	10.0 U	10.0 U	10.0 U	10.0 U	-	100 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	-
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	11.0	11.0	10.0 U	10.0 U	10.0 U	10.0 U	-	100 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	-
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	21.0	21.0	10.0 U	10.0 U	10.0 U	10.0 U	-	100 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	-
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	31.0	31.0	10.0 U	10.0 U	10.0 U	10.0 U	-	100 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	-
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	46.0	46.0	10.0 U	10.0 U	10.0 U	10.0 U	-	100 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	-
RI Phase II (Philip Env. Serv. Corp.)	B-13	05/01/95	10.0	10.0	29.0 U	35.0 U	22.0 U	31.0 U	-	53.0 U	17.0 U	28.0 U	38.0 U	39.0 U	35.0 U	-
RI Phase II (Philip Env. Serv. Corp.)	B-13	05/01/95	15.0	15.0	29.0 UJ	35.0 UJ	23.0 UJ	31.0 UJ	-	54.0 UJ	17.0 UJ	28.0 UJ	39.0 UJ	40.0 UJ	35.0 UJ	-
RI Phase II (Philip Env. Serv. Corp.)	B-13	05/01/95	20.0	20.0	28.0 U	34.0 U	22.0 U	30.0 U	-	51.0 U	16.0 U	27.0 U	37.0 U	38.0 U	34.0 U	-
RI Phase II (Philip Env. Serv. Corp.)	B-13	05/01/95	25.0	25.0	30.0 UJ	37.0 UJ	24.0 UJ	32.0 UJ	-	56.0 UJ	18.0 UJ	29.0 UJ	40.0 UJ	41.0 UJ	37.0 UJ	-
RI Phase II (Philip Env. Serv. Corp.)	B-14	05/01/95	10.0	10.0	28.0 U	35.0 U	22.0 U	31.0 U	-	53.0 U	17.0 U	27.0 U	38.0 U	39.0 U	35.0 U	-
RI Phase II (Philip Env. Serv. Corp.)	B-14	05/01/95	15.0	15.0	29.0 UJ	36.0 UJ	23.0 UJ	31.0 UJ	-	54.0 UJ	17.0 UJ	28.0 UJ	39.0 UJ	40.0 UJ	36.0 UJ	-
RI Phase II (Philip Env. Serv. Corp.)	B-14	05/01/95	20.0	20.0	29.0 U	35.0 U	22.0 U	31.0 U	-	53.0 U	17.0 U	28.0 U	38.0 U	39.0 U	35.0 U	-
RI Phase II (Philip Env. Serv. Corp.)	B-14	05/01/95	25.0	25.0	29.0 UJ	36.0 UJ	23.0 UJ	31.0 UJ	-	54.0 UJ	17.0 UJ	28.0 UJ	39.0 UJ	40.0 UJ	36.0 UJ	-
RI Phase II (Philip Env. Serv. Corp.)	B-15	05/01/95	10.0	10.0	29.0 U	35.0 U	22.0 U	31.0 U	-	53.0 U	17.0 U	28.0 U	38.0 U	39.0 U	35.0 U	-
RI Phase II (Philip Env. Serv. Corp.)	B-15	05/01/95	15.0	15.0	31.0 UJ	38.0 UJ	24.0 UJ	33.0 UJ	-	58.0 UJ	18.0 UJ	30.0 UJ	42.0 UJ	43.0 UJ	38.0 UJ	-
RI Phase II (Philip Env. Serv. Corp.)	B-15	05/01/95	20.0	20.0	30.0 U	36.0 U	23.0 U	32.0 U	-	55.0 U	18.0 UJ	29.0 UJ	40.0 U	41.0 U	36.0 U	-
RI Phase II (Philip Env. Serv. Corp.)	B-15	05/01/95	25.0	25.0	30.0 UJ	37.0 UJ	24.0 UJ	33.0 UJ	-	56.0 UJ	18.0 UJ	29.0 UJ	41.0 UJ	42.0 UJ	37.0 UJ	-
RI Phase II (Philip Env. Serv. Corp.)	BKG-01	04/27/95	0.5	0.5	29.0 U	36.0 U	23.0 U	31.0 U	-	54.0 U	17.0 U	28.0 U	39.0 U	40.0 U	36.0 U	-
RI Phase II (Philip Env. Serv. Corp.)	BKG-02	04/27/95	0.5	0.5	29.0 U	36.0 U	23.0 U	32.0 U	-	54.0 U	17.0 U	28.0 U	39.0 U	40.0 U	36.0 U	-
RI Phase II (Philip Env. Serv. Corp.)	BKG-03	04/27/95	0.5	0.5	32.0 U	39.0 U	25.0 U	34.0 U	-	59.0 U	19.0 U	30.0 U	42.0 U	43.0 U	39.0 U	-
RI Phase II (Philip Env. Serv. Corp.)	BKG-04	04/27/95	0.5	0.5	30.0 U	37.0 U	23.0 U	32.0 U	-	55.0 U	18.0 U	29.0 U	40.0 U	41.0 U	37.0 U	-
RI Phase II (Philip Env. Serv. Corp.)	BKG-05	04/27/95	0.5	0.5	30.0 U	37.0 U	23.0 U	32.0 U	-	55.0 U	18.0 U	29.0 U	40.0 U	41.0 U	37.0 U	-
RI Phase II (Philip Env. Serv. Corp.)	BKG-06	04/27/95	0.5	0.5	30.0 U	37.0 U	23.0 U	32.0 U	-	56.0 U	18.0 U	29.0 U	40.0 U	41.0 U	37.0 U	-
RI Phase II (Philip Env. Serv. Corp.)	BKG-07	04/27/95	0.5	0.5	30.0 U	37.0 U	24.0 U	32.0 U	-	56.0 U	18.0 U	29.0 U	40.0 U	41.0 U	37.0 U	-
RI Phase II (Philip Env. Serv. Corp.)	BKG-08	04/27/95	0.5	0.5	30.0 U	37.0 U	24.0 U	33.0 U	-	56.0 U	18.0 U	29.0 U	40.0 U	42.0 U	37.0 U	-
RI Phase II (Philip Env. Serv. Corp.)	BKG-09	04/27/95	0.5	0.5	30.0 U	37.0 U	24.0 U	32.0 U	-	56.0 U	18.0 U	29.0 U	40.0 U	41.0 U	37.0 U	-
RI Phase II (Philip Env. Serv. Corp.)	BKG-10	04/27/95	0.5	0.5	31.0 U	38.0 U	24.0 U	34.0 U	-	58.0 U	18.0 U	30.0 U	42.0 U	43.0 U	38.0 U	-
RI Phase II (Philip Env. Serv. Corp.)	BKG-11	04/27/95	0.5	0.5	30.0 U	37.0 U	24.0 U	33.0 U	-	56.0 U	18.0 U	29.0 U	41.0 U	42.0 U	37.0 U	-
RI Phase II (Philip Env. Serv. Corp.)	BKG-12	04/27/95	0.5	0.5	30.0 U	37.0 U	24.0 U	33.0 U	-	56.0 U	18.0 U	29.0 U	41.0 U	42.0 U	37.0 U	-
RI Phase II (Philip Env. Serv. Corp.)	BKG-13	04/27/95	0.5	0.5	28.0 U	35.0 U	22.0 U	30.0 U	-	53.0 U	17.0 U	27.0 U	38.0 U	39.0 U	35.0 U	-
RI Phase II (Philip Env. Serv. Corp.)	BKG-14	04/27/95	0.5	0.5	29.0 U	35.0 U	23.0 U	31.0 U	-	54.0 U	17.0 U	28.0 U	39.0 U	40.0 U	35.0 U	-
RI Phase II (Philip Env. Serv. Corp.)	BKG-15	04/27/95	0.5	0.5	32.0 U	39.0 U	25.0 U	34.0 U	-	59.0 U	19.0 U	31.0 U	42.0 U	44.0 U	39.0 U	-
RI Phase II (Philip Env. Serv. Corp.)	BKG-16	04/27/95	0.5	0.5	30.0 U	37.0 U	23.0 U	32.0 U	-	56.0 U	18.0 U	29.0 U	40.0 U	41.0 U	37.0 U	-
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-01-302	03/13/02	0.0	0.5	101,000 U	101,000 U	101,000 U	101,000 U	-	203,000 U	101,000 U	101,000 U	101,000 U	10,100,000 U	10,100,000 U	101,000 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-02-302	03/13/02	0.0	0.5	50,000 U	50,000 U	**109000**	50,000 U	-	100,000 U	50,000 U	50,000 U	50,000 U	5,000,000 U	5,000,000 U	50,000 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-03-302	03/13/02	0.0	0.5	500,000 U	500,000 U	500,000 U	500,000 U	-	1,000,000 U	500,000 U	500,000 U	500,000 U	50,000,000 U	50,000,000 U	**1,980,000**
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-04-302	03/13/02	0.0	0.5	50,000 U	50,000 U	50,000 U	50,000 U	-	100,000 U	50,000 U	50,000 U	50,000 U	5,000,000 U	5,000,000 U	50,000 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-05-302	03/13/02	0.0	0.5	50,000 U	50,000 U	**57,900**	50,000 U	-	100,000 U	50,000 U	50,000 U	50,000 U	5,000,000 U	5,000,000 U	50,000 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-06-302	03/13/02	0.0	0.5	50,000 U	50,000 U	**209,000**	50,000 U	-	100,000 U	50,000 U	50,000 U	50,000 U	5,000,000 U	5,000,000 U	50,000 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-07-302	03/13/02	0.0	0.5	50,000 U	50,000 U	**187,000**	50,000 U	-	100,000 U	50,000 U	50,000 U	50,000 U	5,000,000 U	5,000,000 U	50,000 U

Table O-2
Pasco Landfill Zone B Soil Sample Results
Herbicides

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	2,4,5-T	2,4,5-TP (Silvex)	2,4-D	2,4-DB	Bromoxynil	Dalapon	Dicamba	Dichlorprop	Dinoseb	MCPA	MCPP	Pentachlorophenol
				Draft Human Health Screening Level	35,000,000	28,000,000	35,000,000	28,000,000	70,000,000	105,000,000	105,000,000	-	3,500,000	1,750,000	3,500,000	328,000
				Draft Ecological Screening Level	-	109	27.2	-	3,160	-	-	7,590	21.8	9,270	9,270	4,500
					ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-96-302	03/13/02	0.0	0.5	50,000 U	50,000 U	**66,500**	50,000 U	-	100,000 U	50,000 U	50,000 U	50,000 U	5,000,000 U	5,000,000 U	50,000 U
Confirmation Post-Drum Removal (AMEC)	PZB0101	02/28/05	0.0	0.5	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	2,000 U	2,000 U	-
Confirmation Post-Drum Removal (AMEC)	PZB0201	02/28/05	0.0	0.5	20.0 U	20.0 U	**73.9 J**	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	2,000 U	2,000 U	-
Confirmation Post-Drum Removal (AMEC)	PZB0301	02/28/05	0.0	0.5	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	2,000 U	2,000 U	-
Confirmation Post-Drum Removal (AMEC)	PZB0401	02/28/05	0.0	0.5	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	400 U	400 U	-
Confirmation Post-Drum Removal (AMEC)	PZB0501	02/28/05	0.0	0.5	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	400 U	400 U	-
Confirmation Post-Drum Removal (AMEC)	PZB0601	02/28/05	0.0	0.5	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	400 U	400 U	-
Confirmation Post-Drum Removal (AMEC)	PZB0701	02/28/05	0.0	0.5	4.00 U	4.00 U	**7.10 J**	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	400 U	400 U	-
Confirmation Post-Drum Removal (AMEC)	PZB0801	02/28/05	0.0	0.5	4.00 U	4.00 U	**6.37 J**	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	400 U	400 U	-
Confirmation Post-Drum Removal (AMEC)	PZB0901	02/28/05	0.0	0.5	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	400 U	400 U	-
Confirmation Post-Drum Removal (AMEC)	PZB1001	02/28/05	0.0	0.5	4.00 U	4.00 U	**7.01 J**	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	400 U	400 U	-
Confirmation Post-Drum Removal (AMEC)	PZB1101	02/28/05	0.0	0.5	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	400 U	400 U	-
Confirmation Post-Drum Removal (AMEC)	PZB1102	02/28/05	0.0	0.5	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	400 U	400 U	-
Confirmation Post-Drum Removal (AMEC)	PZB1201	02/28/05	0.0	0.5	4.00 U	4.00 U	**25.8**	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	400 U	400 U	-
Confirmation Post-Drum Removal (AMEC)	PZB1301	02/28/05	0.0	0.5	4.00 U	4.00 U	**9.96 J**	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	400 U	400 U	-
Confirmation Post-Drum Removal (AMEC)	PZB1401	02/28/05	0.0	0.5	4.00 U	4.00 U	**19.3 J**	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	400 U	400 U	-
Confirmation Post-Drum Removal (AMEC)	PZB1501	02/28/05	0.0	0.5	4.00 U	4.00 U	**9.10 J**	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	400 U	400 U	-
Confirmation Post-Drum Removal (AMEC)	PZB1601	02/28/05	0.0	0.5	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	4.00 U	400 U	400 U	-
ZoneB_April2012 (AMEC)	B001-0-3	4/10/2012	0	3	2.2 U	2.2 U	2.2 U	2.2 U	-	8.1 U	4.6 U	2.1 U	2.5 U	**24 J**	2.8 U	3.3 U
ZoneB_April2012 (AMEC)	B002-0-3	4/10/2012	0	3	2.1 U	79	2.1 U	2.1 U	-	7.8 U	4.4 U	2.0 U	2.4 U	53 J	2.6 U	3.1 U
ZoneB_April2012 (AMEC)	B003-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	8.0 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B004-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B005-0-3	4/10/2012	0	3	2.0 U	2.0 U	2.0 U	2.0 U	-	7.6 U	4.3 U	1.9 U	2.3 U	2.5 J	2.6 U	3.0 U
ZoneB_April2012 (AMEC)	B006-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	8.0 U	4.6 U	2.0 U	2.5 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B007-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	8.0 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B008-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B009-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B010-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.7 U	4.4 U	2.0 U	2.4 U	2.1 U	2.6 U	3.1 U
ZoneB_April2012 (AMEC)	B011-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.7 U	4.4 U	1.9 U	2.4 U	2.1 U	2.6 U	3.1 U
ZoneB_April2012 (AMEC)	B012-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.8 U	4.4 U	2.0 U	2.4 U	2.1 U	2.7 U	3.1 U
ZoneB_April2012 (AMEC)	B013-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	8.0 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B014-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B015-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.7 U	4.4 U	2.0 U	2.4 U	2.1 U	2.6 U	3.1 U
ZoneB_April2012 (AMEC)	B016-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	8.0 U	4.6 U	2.0 U	2.5 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B017-0-3	4/10/2012	0	3	2.0 U	2.0 U	2.0 U	2.0 U	-	7.6 U	4.3 U	1.9 U	2.3 U	2.0 U	2.6 U	3.0 U
ZoneB_April2012 (AMEC)	B018-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.7 U	4.4 U	2.0 U	2.4 U	2.1 U	2.6 U	3.1 U
ZoneB_April2012 (AMEC)	B019-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B020-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	8.1 U	4.6 U	2.0 U	2.5 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B020-0-3D	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B021-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.7 U	4.4 U	2.0 U	2.4 U	2.1 U	2.6 U	3.1 U
ZoneB_April2012 (AMEC)	B022-0-3	4/10/2012	0	3	2.0 U	2.0 U	2.0 U	2.0 U	-	7.6 U	4.3 U	1.9 U	2.3 U	2.0 U	2.6 U	3.0 U
ZoneB_April2012 (AMEC)	B023-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.8 U	4.4 U	2.0 U	2.4 U	2.1 U	2.7 U	3.1 U
ZoneB_April2012 (AMEC)	B024-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	8.0 U	4.5 U	2.0 U	2.5 U	2.1 U	2.7 U	3.2 U

Table O-2
Pasco Landfill Zone B Soil Sample Results
Herbicides

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	2,4,5-T	2,4,5-TP (Silvex)	2,4-D	2,4-DB	Bromoxynil	Dalapon	Dicamba	Dichlorprop	Dinoseb	MCPA	MCPP	Pentachlorophenol
				Draft Human Health Screening Level	35,000,000	28,000,000	35,000,000	28,000,000	70,000,000	105,000,000	105,000,000	-	3,500,000	1,750,000	3,500,000	328,000
				Draft Ecological Screening Level	-	109	27.2	-	3,160	-	-	7,590	21.8	9,270	9,270	4,500
					ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
ZoneB_April2012 (AMEC)	B025-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 UJ	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B026-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B027-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.8 U	4.4 U	2.0 U	2.4 U	2.1 U	2.6 U	3.1 U
ZoneB_April2012 (AMEC)	B028-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.1 U
ZoneB_April2012 (AMEC)	B029-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B030-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.8 U	4.4 U	2.0 U	2.4 U	2.1 U	2.7 U	3.1 U
ZoneB_April2012 (AMEC)	B031-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B032-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B033-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.1 U
ZoneB_April2012 (AMEC)	B034-0-3	4/10/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B035-0-3	4/10/2012	0	3	2.1 U	2.1 U	4.9 J	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	3.1 J	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B036-0-3	4/11/2012	0	3	**3.3 J**	4.1 J	6.7 J	2.1 U	-	7.8 U	4.4 U	6.9	6.2 J	4.6 J	4.5 J	3.1 U
ZoneB_April2012 (AMEC)	B037-0-3	4/11/2012	0	3	2.1 U	2.1 U	3.8 J	2.1 U	-	7.8 U	4.4 U	3.3 J	3.5 J	2.9 J	3.4 J	3.1 U
ZoneB_April2012 (AMEC)	B038-0-3	4/11/2012	0	3	1.3 U	1.3 U	1.3 U	1.3 U	-	4.7 U	2.7 U	1.6 J	1.4 U	1.5 J	1.6 U	1.9 U
ZoneB_April2012 (AMEC)	B039-0-3	4/11/2012	0	3	2.1 U	2.1 U	4.8 J	2.1 U	-	7.8 U	4.4 U	3.4 J	2.4 U	2.7 J	2.6 U	3.1 U
ZoneB_April2012 (AMEC)	B040-0-3	4/11/2012	0	3	2.1 U	2.1 U	3.5 J	2.1 U	-	7.9 U	4.5 U	3.4 J	2.4 U	2.1 U	2.7 U	3.1 U
ZoneB_April2012 (AMEC)	B040-0-3D	4/11/2012	0	3	2.1 U	2.1 U	3.8 J	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	2.9 J	2.7 U	3.1 U
ZoneB_April2012 (AMEC)	B041-0-3	4/11/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.8 U	4.4 U	2.0 U	2.4 U	2.1 U	2.7 U	3.1 U
ZoneB_April2012 (AMEC)	B042-0-3	4/11/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.8 U	4.4 U	2.0 U	2.4 U	2.1 U	2.7 U	3.1 U
ZoneB_April2012 (AMEC)	B043-0-3	4/11/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.1 U
ZoneB_April2012 (AMEC)	B044-0-3	4/11/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.1 U
ZoneB_April2012 (AMEC)	B045-0-3	4/11/2012	0	3	2.1 U	2.1 U	2.1 U	7.1	-	7.8 U	4.4 UJ	2.0 U	2.4 U	2.1 U	2.7 U	3.1 U
ZoneB_April2012 (AMEC)	B046-0-3	4/11/2012	0	3	2.1 U	2.1 U	2.3 J	6.3 J	-	7.9 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B047-0-3	4/11/2012	0	3	2.1 U	2.1 U	3.2 J	6.9 J	-	7.9 U	4.5 U	2.0 U	2.8 J	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B048-0-3	4/11/2012	0	3	2.1 U	2.1 U	2.1 U	6.6 J	-	8.0 U	4.6 U	2.0 U	4.1 J	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B049-0-3	4/11/2012	0	3	2.2 U	2.2 U	2.2 U	5.7 J	-	8.1 U	4.6 U	2.1 U	2.5 U	2.2 U	2.8 U	3.3 U
ZoneB_April2012 (AMEC)	B050-0-3	4/11/2012	0	3	2.2 U	2.2 U	2.2 U	7.0 J	-	8.3 U	4.7 U	2.1 U	2.5 U	2.2 U	2.8 U	3.3 U
ZoneB_April2012 (AMEC)	B051-0-3	4/11/2012	0	3	2.2 U	2.2 U	2.2 U	4.2 J	-	8.1 U	4.6 U	2.1 U	2.5 U	11	2.8 U	3.3 U
ZoneB_April2012 (AMEC)	B052-0-3	4/11/2012	0	3	2.2 U	2.2 U	2.7 J	6.6 J	-	8.1 U	4.6 U	2.0 U	2.5 U	2.2 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B053-0-3	4/11/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	8.0 U	4.6 U	2.0 U	2.5 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B054-0-3	4/11/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	8.1 U	4.6 U	2.0 U	2.5 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B055-0-3	4/11/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	8.0 U	4.5 U	2.0 U	2.5 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B056-0-3	4/11/2012	0	3	2.2 U	2.2 U	2.2 U	2.2 U	-	8.1 U	4.6 U	2.1 U	2.5 U	2.2 U	2.8 U	3.3 U
ZoneB_April2012 (AMEC)	B057-0-3	4/11/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	8.0 U	4.5 U	2.0 U	2.5 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B058-0-3	4/11/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.1 U
ZoneB_April2012 (AMEC)	B059-0-3	4/11/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.1 U
ZoneB_April2012 (AMEC)	B060-0-3	4/11/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.8 U	4.4 U	2.0 U	2.4 U	2.1 U	2.6 U	3.1 U
ZoneB_April2012 (AMEC)	B060-0-3D	4/11/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.8 U	4.4 U	2.0 U	2.4 U	2.1 U	2.7 U	3.1 U
ZoneB_April2012 (AMEC)	B061-0-3	4/11/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B062-0-3	4/11/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.8 U	4.4 U	2.0 U	2.4 U	2.1 U	2.7 U	3.1 U
ZoneB_April2012 (AMEC)	B063-0-3	4/11/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	2.2 J	2.7 U	3.1 U
ZoneB_April2012 (AMEC)	B064-0-3	4/11/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B065-0-3	4/11/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 UJ	2.0 U	2.4 U	2.1 U	2.7 U	3.1 U

Table O-2
Pasco Landfill Zone B Soil Sample Results
Herbicides

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	2,4,5-T	2,4,5-TP (Silvex)	2,4-D	2,4-DB	Bromoxynil	Dalapon	Dicamba	Dichlorprop	Dinoseb	MCPA	MCPP	Pentachlorophenol
Draft Human Health Screening Level					35,000,000	28,000,000	35,000,000	28,000,000	70,000,000	105,000,000	105,000,000	-	3,500,000	1,750,000	3,500,000	328,000
Draft Ecological Screening Level					-	109	27.2	-	3,160	-	-	7,590	21.8	9,270	9,270	4,500
					ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
ZoneB_April2012 (AMEC)	B066-0-3	4/11/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B067-0-3	4/11/2012	0	3	2.2 U	2.2 U	2.2 U	2.2 U	-	8.1 U	4.6 U	2.0 U	2.5 U	2.2 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B068-0-3	4/11/2012	0	3	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	-	8.1 UJ	4.6 UJ	2.0 UJ	2.5 UJ	10 J	2.7 UJ	3.2 UJ
ZoneB_April2012 (AMEC)	B069-0-3	4/11/2012	0	3	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	-	8.0 UJ	4.5 UJ	2.0 UJ	2.4 UJ	6.6 J	2.7 UJ	3.2 UJ
ZoneB_April2012 (AMEC)	B070-0-3	4/11/2012	0	3	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	-	7.9 UJ	4.5 UJ	2.0 UJ	2.4 UJ	2.1 UJ	2.7 UJ	3.2 UJ
ZoneB_April2012 (AMEC)	B071-0-3	4/11/2012	0	3	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	-	7.6 UJ	4.3 UJ	1.9 UJ	2.3 UJ	5.5 J	2.6 UJ	3.0 UJ
ZoneB_April2012 (AMEC)	B072-0-3	4/11/2012	0	3	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	-	8.1 UJ	4.6 UJ	2.0 UJ	2.5 UJ	2.1 UJ	2.7 UJ	3.2 UJ
ZoneB_April2012 (AMEC)	B073-0-3	4/11/2012	0	3	2.2 UJ	2.2 UJ	2.2 UJ	2.2 UJ	-	8.1 UJ	4.6 UJ	2.1 UJ	2.5 UJ	2.2 UJ	2.8 UJ	3.3 UJ
ZoneB_April2012 (AMEC)	B074-0-3	4/11/2012	0	3	2.2 UJ	2.2 UJ	2.2 UJ	2.2 UJ	-	8.3 UJ	4.7 UJ	2.1 UJ	2.5 UJ	2.2 UJ	2.8 UJ	3.3 UJ
ZoneB_April2012 (AMEC)	B075-0-3	4/11/2012	0	3	2.2 UJ	2.2 UJ	2.2 UJ	2.2 UJ	-	8.1 UJ	4.6 UJ	2.1 UJ	2.5 UJ	2.2 UJ	2.8 UJ	3.3 UJ
ZoneB_April2012 (AMEC)	B076-0-3	4/12/2012	0	3	2.2 UJ	2.2 UJ	2.2 UJ	2.2 UJ	-	8.2 UJ	4.6 UJ	2.1 UJ	2.5 UJ	2.2 UJ	2.8 UJ	3.3 UJ
ZoneB_April2012 (AMEC)	B077-0-3	4/12/2012	0	3	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	-	7.6 UJ	4.3 UJ	1.9 UJ	2.3 UJ	2.0 UJ	2.6 UJ	3.1 UJ
ZoneB_April2012 (AMEC)	B078-0-3	4/12/2012	0	3	2.3 UJ	2.3 UJ	2.3 UJ	2.3 UJ	-	8.8 UJ	5.0 UJ	2.2 UJ	2.7 UJ	2.3 UJ	3.0 UJ	3.5 UJ
ZoneB_April2012 (AMEC)	B079-0-3	4/12/2012	0	3	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	-	7.7 UJ	4.4 UJ	2.0 UJ	2.4 UJ	5.7 J	2.6 UJ	3.1 UJ
ZoneB_April2012 (AMEC)	B080-0-3	4/12/2012	0	3	2.7 UJ	2.7 UJ	2.7 UJ	2.7 UJ	-	10 UJ	5.8 UJ	2.6 UJ	3.1 UJ	3.8 J	3.5 UJ	4.1 UJ
ZoneB_April2012 (AMEC)	B080-0-3D	4/12/2012	0	3	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	-	7.9 UJ	4.5 UJ	2.0 UJ	2.4 UJ	6.9 J	2.7 UJ	3.2 UJ
ZoneB_April2012 (AMEC)	B081-0-3	4/12/2012	0	3	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	-	7.6 UJ	4.3 UJ	1.9 UJ	2.3 UJ	12 J	2.6 UJ	3.0 UJ
ZoneB_April2012 (AMEC)	B082-0-3	4/12/2012	0	3	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	-	7.8 UJ	4.4 UJ	2.0 UJ	2.4 UJ	2.1 UJ	2.7 UJ	3.1 UJ
ZoneB_April2012 (AMEC)	B083-0-3	4/12/2012	0	3	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	-	7.7 UJ	4.4 UJ	2.0 UJ	2.4 UJ	6.6 J	2.6 UJ	3.1 UJ
ZoneB_April2012 (AMEC)	B084-0-3	4/12/2012	0	3	2.2 UJ	2.2 UJ	2.2 UJ	2.2 UJ	-	8.4 UJ	4.8 UJ	2.1 UJ	2.6 UJ	10 J	2.9 UJ	3.4 UJ
ZoneB_April2012 (AMEC)	B085-0-3	4/12/2012	0	3	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	-	7.7 UJ	4.4 UJ	2.0 UJ	2.4 UJ	8.3 J	2.6 UJ	3.1 UJ
ZoneB_April2012 (AMEC)	B086-0-3	4/12/2012	0	3	2.2 UJ	2.2 UJ	2.2 UJ	2.2 UJ	-	8.1 UJ	4.6 UJ	2.0 UJ	2.5 UJ	4.9 J	2.7 UJ	3.2 UJ
ZoneB_April2012 (AMEC)	B087-0-3	4/12/2012	0	3	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	-	7.8 UJ	4.4 UJ	2.0 UJ	2.4 UJ	11 J	2.7 UJ	3.1 UJ
ZoneB_April2012 (AMEC)	B088-0-3	4/12/2012	0	3	2.0 UJ	2.0 UJ	2.0 UJ	2.0 UJ	-	7.5 UJ	4.3 UJ	1.9 UJ	2.3 UJ	8.4 J	2.6 UJ	3.0 UJ
ZoneB_April2012 (AMEC)	B089-0-3	4/12/2012	0	3	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	-	7.8 UJ	4.4 UJ	2.0 UJ	2.4 UJ	9.3 J	2.7 UJ	3.1 UJ
ZoneB_April2012 (AMEC)	B090-0-3	4/12/2012	0	3	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	-	7.9 UJ	4.5 UJ	2.0 UJ	2.4 UJ	7.2 J	2.7 UJ	3.2 UJ
ZoneB_April2012 (AMEC)	B091-0-3	4/12/2012	0	3	2.2 UJ	2.2 UJ	2.2 UJ	2.2 UJ	-	8.1 UJ	4.6 UJ	2.1 UJ	2.5 UJ	2.2 UJ	2.8 UJ	3.2 UJ
ZoneB_April2012 (AMEC)	B092-0-3	4/12/2012	0	3	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	-	7.7 UJ	4.4 UJ	2.0 UJ	2.4 UJ	8.7 J	2.6 UJ	3.1 UJ
ZoneB_April2012 (AMEC)	B093-0-3	4/12/2012	0	3	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	-	7.9 UJ	4.5 UJ	2.0 UJ	2.4 UJ	2.1 UJ	2.7 UJ	3.2 UJ
ZoneB_April2012 (AMEC)	B094-0-3	4/12/2012	0	3	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	-	7.9 UJ	4.5 UJ	2.0 UJ	2.4 UJ	2.1 UJ	2.7 UJ	3.2 UJ
ZoneB_April2012 (AMEC)	B095-0-3	4/12/2012	0	3	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	-	7.9 UJ	4.5 UJ	2.0 UJ	2.4 UJ	7.3 J	2.7 UJ	3.2 UJ
ZoneB_April2012 (AMEC)	B096-0-3	4/12/2012	0	3	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	-	8.0 UJ	4.6 UJ	2.0 UJ	2.5 UJ	2.1 UJ	2.7 UJ	3.2 UJ
ZoneB_April2012 (AMEC)	B097-0-3	4/12/2012	0	3	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ	-	8.1 UJ	4.6 UJ	2.0 UJ	2.5 UJ	2.1 UJ	2.7 UJ	3.2 UJ
ZoneB_April2012 (AMEC)	B098-0-3	4/12/2012	0	3	2.2 UJ	2.2 UJ	17 J	19 J	-	8.2 UJ	4.7 UJ	4.2 J	2.5 UJ	7.1 J	2.8 UJ	3.3 UJ
ZoneB_April2012 (AMEC)	B099-0-3	4/12/2012	0	3	2.1 UJ	2.1 UJ	2.1 UJ	18 J	-	7.9 UJ	4.5 UJ	2.0 UJ	2.4 UJ	6.8 J	2.7 UJ	3.2 UJ
ZoneB_April2012 (AMEC)	B100-0-3	4/12/2012	0	3	2.1 UJ	2.1 UJ	2.1 UJ	22 J	-	7.9 UJ	4.5 UJ	2.0 UJ	2.4 UJ	7.5 J	2.7 UJ	3.2 UJ
ZoneB_April2012 (AMEC)	B100-0-3D	4/12/2012	0	3	2.1 UJ	2.1 UJ	2.1 UJ	24	-	8.0 UJ	4.5 UJ	2.0 UJ	2.5 UJ	7.6	2.7 UJ	3.2 UJ
ZoneB_April2012 (AMEC)	B101-0-3	4/12/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.8 U	4.4 UJ	2.0 U	2.4 U	2.1 U	2.7 U	3.1 U
ZoneB_April2012 (AMEC)	B102-0-3	4/12/2012	0	3	2.2 U	2.2 U	2.2 U	2.2 U	-	8.1 U	4.6 UJ	2.0 U	2.5 U	2.2 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B103-0-3	4/12/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 UJ	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B104-0-3	4/12/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.7 U	4.4 UJ	2.0 U	2.4 U	2.1 U	2.6 U	3.1 U
ZoneB_April2012 (AMEC)	B105-0-3	4/12/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 UJ	4.5 UJ	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B106-0-3	4/12/2012	0	3	2.0 U	2.0 U	2.0 U	2.0 U	-	7.5 U	4.3 UJ	1.9 U	2.3 U	2.0 U	2.6 U	3.0 U

Table O-2
Pasco Landfill Zone B Soil Sample Results
Herbicides

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	2,4,5-T	2,4,5-TP (Silvex)	2,4-D	2,4-DB	Bromoxynil	Dalapon	Dicamba	Dichlorprop	Dinoseb	MCPA	MCPP	Pentachlorophenol
Draft Human Health Screening Level					35,000,000	28,000,000	35,000,000	28,000,000	70,000,000	105,000,000	105,000,000	-	3,500,000	1,750,000	3,500,000	328,000
Draft Ecological Screening Level					-	109	27.2	-	3,160	-	-	7,590	21.8	9,270	9,270	4,500
					ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
ZoneB_April2012 (AMEC)	B107-0-3	4/12/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	8.0 U	4.5 UJ	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B108-0-3	4/12/2012	0	3	2.0 U	2.0 U	2.0 U	2.0 U	-	7.6 U	4.3 UJ	1.9 U	2.3 U	2.0 U	2.6 U	3.0 U
ZoneB_April2012 (AMEC)	B109-0-3	4/12/2012	0	3	2.0 U	2.0 U	2.0 U	2.0 U	-	7.7 U	4.3 UJ	1.9 U	2.3 U	2.5 J	2.6 U	3.1 U
ZoneB_April2012 (AMEC)	B110-0-3	4/12/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	8.0 U	4.5 UJ	2.0 U	2.4 U	10	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B111-0-3	4/12/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.4 UJ	2.0 U	2.4 U	2.1 U	2.7 U	3.1 U
ZoneB_April2012 (AMEC)	B112-0-3	4/12/2012	0	3	2.0 U	2.0 U	2.0 U	2.0 U	-	7.4 U	4.2 UJ	1.9 U	2.3 U	2.0 U	2.5 U	3.0 U
ZoneB_April2012 (AMEC)	B113-0-3	4/12/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.8 U	4.4 UJ	2.0 U	2.4 U	2.1 U	2.7 U	3.1 U
ZoneB_April2012 (AMEC)	B114-0-3	4/12/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	8.0 U	4.5 UJ	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B115-0-3	4/13/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	8.0 U	4.5 UJ	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B116-0-3	4/13/2012	0	3	2.2 U	2.2 U	2.2 U	2.2 U	-	8.1 U	4.6 UJ	2.0 U	2.5 U	2.2 U	2.8 U	3.2 U
ZoneB_April2012 (AMEC)	B117-0-3	4/13/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	8.0 U	4.5 UJ	2.0 U	2.4 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B118-0-3	4/13/2012	0	3	2.2 U	2.2 U	2.2 U	2.2 U	-	8.2 U	4.6 UJ	2.1 U	2.5 U	2.2 U	2.8 U	3.3 U
ZoneB_April2012 (AMEC)	B119-0-3	4/13/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	8.1 U	4.6 UJ	2.0 U	2.5 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B120-0-3	4/13/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	8.0 U	4.6 UJ	2.0 U	2.5 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B120-0-3D	4/13/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	8.0 U	4.5 U	2.0 U	2.5 U	9.2	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B121-0-3	4/13/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 U	2.0 U	2.4 U	8.3	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B122-0-3	4/13/2012	0	3	2.2 U	2.2 U	2.2 U	2.2 U	-	8.2 U	4.7 U	2.1 U	2.5 U	2.2 U	2.8 U	3.3 U
ZoneB_April2012 (AMEC)	B123-0-3	4/13/2012	0	3	2.2 U	2.2 U	2.2 U	2.2 U	-	8.1 U	4.6 U	2.1 U	2.5 U	8.4	2.8 U	3.2 U
ZoneB_April2012 (AMEC)	B124-0-3	4/13/2012	0	3	2.1 U	2.1 U	2.1 U	3.0 U	-	7.8 U	4.4 U	2.0 U	2.4 U	2.1 U	5.4 J	3.1 U
ZoneB_April2012 (AMEC)	B125-0-3	4/13/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	8.0 U	4.5 U	2.0 U	2.4 U	11	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B126-0-3	4/13/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	8.0 U	4.5 U	2.0 U	2.5 U	8.8	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B127-0-3	4/13/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.9 U	4.5 U	7.0	2.4 U	2.1 U	2.7 U	3.1 UJ
ZoneB_April2012 (AMEC)	B128-0-3	4/13/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	7.8 U	4.4 U	2.0 U	2.4 U	7.1	2.7 U	3.1 U
ZoneB_April2012 (AMEC)	B129-0-3	4/13/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	8.0 U	4.6 U	2.0 U	2.5 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B130-0-3	4/13/2012	0	3	2.1 U	2.1 U	2.1 U	2.1 U	-	8.0 U	4.6 U	2.0 U	2.5 U	2.1 U	2.7 U	3.2 U
ZoneB_April2012 (AMEC)	B130-0-3D	4/13/2012	0	3	2.2 U	2.2 U	2.2 U	2.2 U	-	8.1 U	4.6 U	2.0 U	2.5 U	2.2 U	2.7 U	3.2 U

Notes:

ug/kg = micrograms per kilogram

Bold indicates detetected concentration.

- = not tested

Blue highlight indicates that detected concentration exceeds associated screening level

Sample depths are at time of sampling, and do not represent current depths

AMEC = AMEC Earth & Environmental, Inc. (now Amec Foster Wheeler Environment & Infrastructure, Inc.)

Philip Env. Serv. Corp. = Philip Environmental Services Corporation

U = Analyte was not detected above the reported sample quantitation limit.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Table O-3
Pasco Landfill Zone B Soil Sample Results
Metals

				Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Zinc
Draft Human Health Screening Level				-	-	-	-	-	-	-	-	-	-	-	-	-
Draft Ecological Screening Level				-	-	-	-	-	-	-	-	-	-	-	-	-
Method C, Carcinogen, Direct Contact (ingestion only), industrial land use				87.5	-	-	-	-	-	-	-	-	-	-	-	-
Method C, Non-carcinogen, Direct Contact (ingestion only), industrial land use				1,050	7,000	-	-	140,000	-	-	70,000	-	-	-	-	1,050,000
Event	**Sample ID**	**Date Sampled**	**Depth (ft)**	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	11.0	10.7 U	0.0100 U	**2.30 B**	**7.00 B**	**16.5 B**	**13.0**	0.500 U	**12.1**	16.0 U	**1.50 B**	16.0 U	6.40 U	**47.4 B**
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	21.0	8.20 U	0.0100 U	**3.00 B**	**7.30 B**	**12.5 B**	**9.30**	0.400 U	**12.7**	12.4 U	**0.770 B**	12.4 U	4.90 U	**42.1 B**
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	31.0	9.30 U	0.0100 U	**3.10 B**	**3.60 B**	**12.3 B**	**8.40**	0.400 U	**8.80**	14.0 U	**1.40 B**	14.0 U	5.60 U	**34.1 B**
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	41.0	9.80 U	0.0100 U	**2.30 B**	**1.80 B**	**11.1 B**	4.90 U	0.400 U	**7.50**	14.7 U	**1.70 B**	14.7 U	5.90 U	**25.1 B**
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	11.0	10.0 U	0.0100 U	**2.90 B**	**9.60 B**	**16.5 B**	**10.5**	0.400 U	**15.1**	15.0 U	**0.990 B**	15.0 U	6.00 U	**48.2 B**
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	21.0	**10.1**	0.0100 U	**3.10 B**	**8.00 B**	**17.1 B**	**13.2**	0.400 U	**14.0**	14.0 U	**1.00 B**	14.0 U	5.60 U	**48.6 B**
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	31.0	9.40 U	0.0100 U	**2.50 B**	**2.40 B**	**11.3 B**	**6.00**	0.400 U	**8.00**	14.1 U	**1.00 B**	14.1 U	5.60 U	**33.2 B**
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	46.0	9.70 U	0.0100 U	**2.20 B**	**3.60 B**	**10.4 B**	**7.20**	0.400 U	**8.30**	11.8 U	**0.970 B**	11.8 U	4.70 U	**33.2 B**

Notes:

mg/kg = milligrams per kilogram

Bold indicates detetected concentration.

- = not tested

Sample depths are at time of sampling, and do not represent current depths

B = Analyte was detected in an associated blank QC sample. The detected sample result is less than five times the concentration detected in the blank or ten times the concentration for common laboratory contaminants.

U = Analyte was not detected above the reported sample quantitation limit.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Table O-4
Pasco Landfill Zone B Soil Sample Results
Semi-Volatile Organic Compounds

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1-Methylnaphthalene	2,3,4,6-Tetrachlorophenol	2,3,5,6-Tetrachlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dichlorophenol	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylphenol	2-Nitroaniline	2-Nitrophenol	3 & 4-Chlorophenol	3,3'-Dichlorobenzidine	3-,4-Methylphenol	3-Nitroaniline	4,6-Dinitro-2-methylphenol
Draft Human Health Screening Level					-	-	-	-	-	-	-	350,000,000	3,500,000	10,500,000	-	-	-	10,500,000	-	-	17,500,000	-	-	-	-	-	-	-	-
Draft Ecological Screening Level					-	-	-	-	-	-	-	14,100	9,940	87,500	-	-	-	1,170	-	-	243	-	-	-	-	-	-	-	-
Method C, Carcinogen, Direct Contact (ingestion only), industrial land use					4,530,000	-	-	-	-	-	-				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Method C, Non-carcinogen, Direct Contact (ingestion only), industrial land use					35,000,000	315,000,000	-	-	-	-	-				70,000,000	7,000,000	7,000,000	-	3,500,000	-		-	35,000,000	-	-	-	-	-	-
					ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	11.0	11.0	360 U	360 U	360 U	360 U	-	-	-	360 U	360 U	360 U	360 U	1,800 U	360 U	-	360 U	360 U	360 U	360 U	1,800 U	360 U	-	720 U	-	1,800 U	1,800 U
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	21.0	21.0	360 U	360 U	360 U	360 U	-	-	-	360 U	360 U	360 U	360 U	1,800 U	360 U	-	360 U	360 U	360 U	360 U	1,800 U	360 U	-	720 U	-	1,800 U	1,800 U
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	31.0	31.0	350 U	350 U	350 U	350 U	-	-	-	350 U	350 U	350 U	350 U	1,800 U	350 U	-	350 U	350 U	350 U	350 U	1,800 U	350 U	-	700 U	-	1,800 U	1,800 U
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	41.0	41.0	350 U	350 U	350 U	350 U	-	-	-	350 U	350 U	350 U	350 U	1,700 U	350 U	-	350 U	350 U	350 U	350 U	1,700 U	350 U	-	690 U	-	1,700 U	1,700 U
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	11.0	11.0	360 U	360 U	360 U	360 U	-	-	-	360 U	360 U	360 U	360 U	1,800 U	360 U	-	360 U	360 U	360 U	360 U	1,800 U	360 U	-	710 U	-	1,800 U	1,800 U
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	21.0	21.0	360 U	360 U	360 U	360 U	-	-	-	360 U	360 U	360 U	360 U	1,800 U	360 U	-	360 U	360 U	360 U	360 U	1,800 U	360 U	-	720 U	-	1,800 U	1,800 U
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	31.0	31.0	340 U	340 U	340 U	340 U	-	-	-	340 U	340 U	340 U	340 U	1,700 U	340 U	-	340 U	340 U	340 U	340 U	1,700 U	340 U	-	680 U	-	1,700 U	1,700 U
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	46.0	46.0	350 U	350 U	350 U	350 U	-	-	-	350 U	350 U	350 U	350 U	1,700 U	350 U	-	350 U	350 U	350 U	350 U	1,700 U	350 U	-	690 U	-	1,700 U	1,700 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-01-302	03/13/02	0.0	0.5	1,630,000 U	1,630,000 U	1,630,000 U	1,630,000 U	-	-	-	1,630,000 U	**40,800,000**	**8,060,000**	1,630,000 U	2,470,000 U	2,470,000 U	2,470,000 U	-	1,630,000 U	1,630,000 U	1,630,000 U	2,470,000 U	1,630,000 U	-	24,700,000 U	1,630,000 U	2,470,000 U	2,470,000 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-02-302	03/13/02	0.0	0.5	16,400 U	16,400 U	16,400 U	16,400 U	-	-	-	**191,000**	**1,210,000**	**2,440,000**	16,400 U	24,900 U	24,900 U	24,900 U	-	16,400 U	**79,600**	**313,000**	24,900 U	16,400 U	-	249,000 U	16,400 U	24,900 U	24,900 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-03-302	03/13/02	0.0	0.5	3,300 U	3,300 U	3,300 U	3,300 U	-	-	-	3,300 U	**17,100**	**8,030**	3,300 U	5,000 U	5,000 U	5,000 U	-	3,300 U	3,300 U	3,300 U	5,000 U	3,300 U	-	50,000 U	3,300 U	5,000 U	5,000 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-04-302	03/13/02	0.0	0.5	6,600 U	6,600 U	6,600 U	6,600 U	-	-	-	**75,300**	**2,060,000**	**856,000**	6,600 U	10,000 U	10,000 U	10,000 U	-	6,600 U	6,600 U	**18,500**	10,000 U	6,600 U	-	100,000 U	6,600 U	10,000 U	10,000 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-05-302	03/13/02	0.0	0.5	6,600 U	6,600 U	6,600 U	6,600 U	-	-	-	**195,000**	**927,000**	**639,000**	6,600 U	10,000 U	10,000 U	10,000 U	-	6,600 U	**44,900**	6,600 U	10,000 U	6,600 U	-	100,000 U	6,600 U	10,000 U	10,000 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-06-302	03/13/02	0.0	0.5	16,300 U	16,300 U	16,300 U	16,300 U	-	-	-	**228,000**	**13,600,000**	407,000 U	**10,500,000**	24,700 U	24,700 U	24,700 U	-	16,300 U	**55,400**	**41,200**	24,700 U	16,300 U	-	247,000 U	16,300 U	24,700 U	24,700 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-07-302	03/13/02	0.0	0.5	82,200 U	82,200 U	82,200 U	82,200 U	-	-	-	**216,000**	**9,400,000**	**5,880,000**	82,200 U	125,000 U	125,000 U	125,000 U	-	82,200 U	82,200 U	82,200 U	125,000 U	82,200 U	-	1,250,000 U	82,200 U	125,000 U	125,000 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-96-302	03/13/02	0.0	0.5	16,400 U	16,400 U	16,400 U	16,400 U	-	-	-	**388,000**	**16,700,000**	**9,720,000**	16,400 U	24,800 U	24,800 U	24,800 U	-	16,400 U	**69,800**	**45,800**	24,800 U	16,400 U	-	248,000 U	16,400 U	24,800 U	24,800 U
Confirmation Post-Drum Removal (AMEC)	PZB0101	02/28/05	0.0	0.5	140 U	1,000 U	1,000 U	1,000 U	140 U	-	-	140 U	140 U	140 U	1,000 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	-	1,000 U	140 U	1,000 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB0201	02/28/05	0.0	0.5	140 U	1,000 U	1,000 U	1,000 U	140 U	-	-	140 U	140 U	140 U	1,000 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	-	1,000 U	140 U	1,000 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB0301	02/28/05	0.0	0.5	140 U	1,000 U	1,000 U	1,000 U	140 U	-	-	140 U	140 U	140 U	1,000 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	-	1,000 U	140 U	1,000 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB0401	02/28/05	0.0	0.5	140 U	1,000 U	1,000 U	1,000 U	140 U	-	-	140 U	140 U	140 U	1,000 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	-	1,000 U	140 U	1,000 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB0501	02/28/05	0.0	0.5	140 U	1,000 U	1,000 U	1,000 U	140 U	-	-	140 U	140 U	140 U	1,000 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	-	1,000 U	140 U	1,000 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB0601	02/28/05	0.0	0.5	140 U	1,000 U	1,000 U	1,000 U	140 U	-	-	140 U	140 U	140 U	1,000 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	-	1,000 U	140 U	1,000 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB0701	02/28/05	0.0	0.5	140 U	1,000 U	1,000 U	1,000 U	140 U	-	-	140 U	140 U	140 U	1,000 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	-	1,000 U	140 U	1,000 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB0801	02/28/05	0.0	0.5	140 U	1,000 U	1,000 U	1,000 U	140 U	-	-	140 U	140 U	140 U	1,000 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	-	1,000 U	140 U	1,000 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB0901	02/28/05	0.0	0.5	140 U	1,000 U	1,000 U	1,000 U	140 U	-	-	140 U	140 U	140 U	1,000 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	-	1,000 U	140 U	1,000 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB1001	02/28/05	0.0	0.5	140 U	1,000 U	1,000 U	1,000 U	140 U	-	-	140 U	140 U	140 U	1,000 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	-	1,000 U	140 U	1,000 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB1101	02/28/05	0.0	0.5	140 U	1,000 U	1,000 U	1,000 U	140 U	-	-	140 U	140 U	140 U	1,000 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	-	1,000 U	140 U	1,000 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB1102	02/28/05	0.0	0.5	140 U	1,000 U	1,000 U	1,000 U	140 U	-	-	140 U	140 U	140 U	1,000 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	-	1,000 U	140 U	1,000 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB1201	02/28/05	0.0	0.5	140 U	1,000 U	1,000 U	1,000 U	140 U	-	-	140 U	140 U	140 U	1,000 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	-	1,000 U	140 U	1,000 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB1301	02/28/05	0.0	0.5	140 U	1,000 U	1,000 U	1,000 U	140 U	-	-	140 U	140 U	140 U	1,000 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	-	1,000 U	140 U	1,000 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB1401	02/28/05	0.0	0.5	140 U	1,000 U	1,000 U	1,000 U	140 U	-	-	140 U	140 U	140 U	1,000 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	-	1,000 U	140 U	1,000 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB1501	02/28/05	0.0	0.5	140 U	1,000 U	1,000 U	1,000 U	140 U	-	-	140 U	140 U	140 U	1,000 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	-	1,000 U	140 U	1,000 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB1601	02/28/05	0.0	0.5	140 U	1,000 U	1,000 U	1,000 U	140 U	-	-	140 U	140 U	140 U	1,000 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	-	1,000 U	140 U	1,000 U	1,000 U
Pre-Excavation for Cap Installation (AMEC)	OZB-07_0-6	07/16/09	0.0	0.5	-	-	-	-	0.391 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-Excavation for Cap Installation (AMEC)	OZB-08_0-6	07/16/09	0.0	0.5	-	-	-	-	0.386 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-Excavation for Cap Installation (AMEC)	OZB-09_0-6	07/16/09	0.0	0.5	-	-	-	-	0.391 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-Excavation for Cap Installation (AMEC)	PZB-05_6-12	07/16/09	0.5	1.0	-	--	--	--	0.377 U	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-Excavation for Cap Installation (AMEC)	PZB-05_6-12Dup	07/16/09	0.5	1.0	-	-	-	-	0.372 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Post-Excavation for Cap Installation (AMEC)	PZB-05A	12/20/10	0.0	0.5	-	-	-	-	**2.27 J**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Post-Excavation for Cap Installation (AMEC)	PZB-05A Dup	12/20/10	0.0	0.5	-	-	-	-	2.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Post-Excavation for Cap Installation (AMEC)	PZB-05B	12/20/10	0.0	0.5	-	-	-	-	1.80 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Post-Excavation for Cap Installation (AMEC)	PZB-05C	12/20/10	0.0	0.5	-	-	-	-	1.92 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Post-Excavation for Cap Installation (AMEC)	PZB-05D	12/20/10	0.0	0.5	-	-	-	-	1.80 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B001-0-3	04/10/12	0	3	-	-	-	-	-	20.9 UJ	20.9 UJ	20.9 UJ	20.9 UJ	20.9 U	-	-	-	20.9 U	-	-	20.9 U	-	-	-	41.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B002-0-3	04/10/12	0	3	-	-	-	-	-	20.1 U	20.1 U	20.1 U	20.1 U	20.1 U	-	-	-	20.1 U	-	-	20.1 U	-	-	-	40.2 U	-	-	-	-
ZoneB_April2012 (AMEC)	B003-0-3	04/10/12	0	3	-	-	-	-	-	20.7 U	20.7 U	20.7 U	20.7 U	20.7 U	-	-	-	20.7 U	-	-	20.7 U	-	-	-	41.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B004-0-3	04/10/12	0	3	-	-	-	-	-	20.3 U	20.3 U	20.3 U	20.3 U	20.3 U	-	-	-	20.3 U	-	-	20.3 U	-	-	-	40.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B005-0-3	04/10/12	0	3	-	-	-	-	-	19.7 U	19.7 U	19.7 U	19.7 U	19.7 U	-	-	-	19.7 U	-	-	19.7 U	-	-	-	39.3 U	-	-	-	-

Table O-4
Pasco Landfill Zone B Soil Sample Results
Semi-Volatile Organic Compounds

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	4-Bromophenyl phenyl ether	4-Chloro-3-methylphenol	4-Chloro-o-cresol	4-Chloroaniline	4-Chlorophenyl phenyl ether	4-Methylphenol	4-Nitroaniline	4-Nitrophenol	Acenaphthene	Acenaphthylene	Aniline	A`-hracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Benzoic Acid	Benzyl alcohol	Bis(2-chloroethoxy)methane	Bis(2-chloroethyl) ether	Bis(2-chloroisopropyl) ether	Bis(2-ethylhexyl)phthalate	Butyl benzyl phthalate	Carbazole
Draft Human Health Screening Level					-	62,000,000	-	-	-	-	-	-	210,000,000	-	-	1,050,000,000	180,000	18,000	180,000	-	1,800,000	-	-	-	-	-	-	-	-
Draft Ecological Screening Level					-	7,000	-	-	-	-	-	-	100,000	100,000	-	100,000	1,100	12,000	1,100	1,100	1,100	-	-	-	-	-	-	-	-
Method C, Carcinogen, Direct Contact (ingestion only), industrial land use					-	-	-	656,000	-	-	-	-	-	-	23,026,316	-				-		-	-	-	119,318	-	9,375,000	69,100,000	-
Method C, Non-carcinogen, Direct Contact (ingestion only), industrial land use					-	-	-	14,000,000	-	-	-	-		-	24,500,000		-	-	-	-	-	14,000,000,000	350,000,000	-	-	-	70,000,000	700,000,000	-
					ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	11.0	11.0	360 U	720 U	-	720 U	360 U	360 U	1,800 U	1,800 U	360 U	360 U	-	360 U	360 U	360 U	360 U	360 U	360 U	1,800 U	720 U	360 U	360 U	360 U	360 U	360 U	-
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	21.0	21.0	360 U	720 U	-	720 U	360 U	360 U	1,800 U	1,800 U	360 U	360 U	-	360 U	360 U	360 U	360 U	360 U	360 U	1,800 U	720 U	360 U	360 U	360 U	360 U	360 U	-
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	31.0	31.0	350 U	700 U	-	700 U	350 U	350 U	1,800 U	1,800 U	350 U	350 U	-	350 U	350 U	350 U	350 U	350 U	350 U	1,800 U	700 U	350 U	350 U	350 U	350 U	350 U	-
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	41.0	41.0	350 U	690 U	-	690 U	350 U	350 U	1,700 U	1,700 U	350 U	350 U	-	350 U	350 U	350 U	350 U	350 U	350 U	1,700 U	690 U	350 U	350 U	350 U	350 U	350 U	-
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	11.0	11.0	360 U	710 U	-	710 U	360 U	360 U	1,800 U	1,800 U	360 U	360 U	-	360 U	360 U	360 U	360 U	360 U	360 U	1,800 U	710 U	360 U	360 U	360 U	**88.0 JB**	360 U	-
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	21.0	21.0	360 U	720 U	-	720 U	360 U	360 U	1,800 U	1,800 U	360 U	360 U	-	360 U	360 U	360 U	360 U	360 U	360 U	1,800 U	720 U	360 U	360 U	360 U	**150 JB**	360 U	-
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	31.0	31.0	340 U	680 U	-	680 U	340 U	340 U	1,700 U	1,700 U	340 U	340 U	-	340 U	340 U	340 U	340 U	340 U	340 U	1,700 U	680 U	340 U	340 U	340 U	**81.0 JB**	340 U	-
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	46.0	46.0	350 U	690 U	-	690 U	350 U	350 U	1,700 U	1,700 U	350 U	350 U	-	350 U	350 U	350 U	350 U	350 U	350 U	1,700 U	690 U	350 U	350 U	350 U	**80.0 JB**	350 U	-
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-01-302	03/13/02	0.0	0.5	1,630,000 U	1,630,000 U	-	2,470,000 U	1,630,000 U	-	2,470,000 U	2,470,000 U	1,630,000 U	1,630,000 U	1,630,000 U	1,630,000 U	1,630,000 U	1,630,000 U	1,630,000 U	1,630,000 U	1,630,000 U	4,930,000 U	1,630,000 U	1,630,000 U	1,630,000 U	1,630,000 U	1,630,000 U	1,630,000 U	1,630,000 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-02-302	03/13/02	0.0	0.5	16,400 U	16,400 U	-	24,900 U	16,400 U	-	24,900 U	24,900 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	49,800 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-03-302	03/13/02	0.0	0.5	3,300 U	3,300 U	-	5,000 U	3,300 U	-	5,000 U	5,000 U	3,300 U	3,300 U	3,300 U	3,300 U	3,300 U	3,300 U	3,300 U	3,300 U	3,300 U	10,000 U	3,300 U	3,300 U	3,300 U	3,300 U	3,300 U	3,300 U	3,300 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-04-302	03/13/02	0.0	0.5	6,600 U	**15,000**	-	10,000 U	6,600 U	-	10,000 U	10,000 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	20,000 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-05-302	03/13/02	0.0	0.5	6,600 U	6,600 U	-	10,000 U	6,600 U	-	10,000 U	10,000 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	20,000 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-06-302	03/13/02	0.0	0.5	16,300 U	**106,000**	-	24,700 U	16,300 U	-	24,700 U	24,700 U	16,300 U	16,300 U	16,300 U	16,300 U	16,300 U	16,300 U	16,300 U	16,300 U	16,300 U	49,300 U	16,300 U	16,300 U	16,300 U	16,300 U	16,300 U	16,300 U	16,300 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-07-302	03/13/02	0.0	0.5	82,200 U	82,200 U	-	125,000 U	82,200 U	-	125,000 U	125,000 U	82,200 U	82,200 U	82,200 U	82,200 U	82,200 U	82,200 U	82,200 U	82,200 U	82,200 U	249,000 U	82,200 U	82,200 U	82,200 U	82,200 U	82,200 U	82,200 U	82,200 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-96-302	03/13/02	0.0	0.5	16,400 U	**132,000**	-	24,800 U	16,400 U	-	24,900 U	24,800 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	49,700 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U
Confirmation Post-Drum Removal (AMEC)	PZB0101	02/28/05	0.0	0.5	140 U	140 U	-	1,000 U	140 U	-	140 U	1,000 U	140 U	140 U	-	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	140 U	4,000 U	140 U	-
Confirmation Post-Drum Removal (AMEC)	PZB0201	02/28/05	0.0	0.5	140 U	140 U	-	1,000 U	140 U	-	140 U	1,000 U	140 U	140 U	-	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	140 U	4,000 U	140 U	-
Confirmation Post-Drum Removal (AMEC)	PZB0301	02/28/05	0.0	0.5	140 U	140 U	-	1,000 U	140 U	-	140 U	1,000 U	140 U	140 U	-	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	140 U	4,000 U	140 U	-
Confirmation Post-Drum Removal (AMEC)	PZB0401	02/28/05	0.0	0.5	140 U	140 U	-	1,000 U	140 U	-	140 U	1,000 U	140 U	140 U	-	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	140 U	4,000 U	140 U	-
Confirmation Post-Drum Removal (AMEC)	PZB0501	02/28/05	0.0	0.5	140 U	140 U	-	1,000 U	140 U	-	140 U	1,000 U	140 U	140 U	-	140 U	**228 J**	**184 J**	**178 J**	140 U	**159 J**	1,000 U	140 U	140 U	140 U	140 U	4,000 U	140 U	-
Confirmation Post-Drum Removal (AMEC)	PZB0601	02/28/05	0.0	0.5	140 U	140 U	-	1,000 U	140 U	-	140 U	1,000 U	140 U	140 U	-	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	140 U	4,000 U	140 U	-
Confirmation Post-Drum Removal (AMEC)	PZB0701	02/28/05	0.0	0.5	140 U	140 U	-	1,000 U	140 U	-	140 U	1,000 U	140 U	140 U	-	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	140 U	4,000 U	140 U	-
Confirmation Post-Drum Removal (AMEC)	PZB0801	02/28/05	0.0	0.5	140 U	140 U	-	1,000 U	140 U	-	140 U	1,000 U	140 U	140 U	-	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	140 U	4,000 U	140 U	-
Confirmation Post-Drum Removal (AMEC)	PZB0901	02/28/05	0.0	0.5	140 U	140 U	-	1,000 U	140 U	-	140 U	1,000 U	140 U	140 U	-	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	140 U	4,000 U	140 U	-
Confirmation Post-Drum Removal (AMEC)	PZB1001	02/28/05	0.0	0.5	140 U	140 U	-	1,000 U	140 U	-	140 U	1,000 U	140 U	140 U	-	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	140 U	4,000 U	140 U	-
Confirmation Post-Drum Removal (AMEC)	PZB1101	02/28/05	0.0	0.5	140 U	140 U	-	1,000 U	140 U	-	140 U	1,000 U	140 U	140 U	-	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	140 U	4,000 U	140 U	-
Confirmation Post-Drum Removal (AMEC)	PZB1102	02/28/05	0.0	0.5	140 U	140 U	-	1,000 U	140 U	-	140 U	1,000 U	140 U	140 U	-	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	140 U	4,000 U	140 U	-
Confirmation Post-Drum Removal (AMEC)	PZB1201	02/28/05	0.0	0.5	140 U	140 U	-	1,000 U	140 U	-	140 U	1,000 U	140 U	140 U	-	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	140 U	4,000 U	140 U	-
Confirmation Post-Drum Removal (AMEC)	PZB1301	02/28/05	0.0	0.5	140 U	140 U	-	1,000 U	140 U	-	140 U	1,000 U	140 U	140 U	-	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	140 U	4,000 U	140 U	-
Confirmation Post-Drum Removal (AMEC)	PZB1401	02/28/05	0.0	0.5	140 U	140 U	-	1,000 U	140 U	-	140 U	1,000 U	140 U	140 U	-	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	140 U	4,000 U	140 U	-
Confirmation Post-Drum Removal (AMEC)	PZB1501	02/28/05	0.0	0.5	140 U	140 U	-	1,000 U	140 U	-	140 U	1,000 U	140 U	140 U	-	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	140 U	4,000 U	140 U	-
Confirmation Post-Drum Removal (AMEC)	PZB1601	02/28/05	0.0	0.5	140 U	140 U	-	1,000 U	140 U	-	140 U	1,000 U	140 U	140 U	-	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	140 U	4,000 U	140 U	-
Pre-Excavation for Cap Installation (AMEC)	OZB-07_0-6	07/16/09	0.0	0.5	-	-	-	-	-	-	-	-	0.461 U	0.316 U	-	0.448 U	0.843 U	0.297 U	0.360 U	0.325 U	0.398 U	-	-	-	-	-	-	-	-
Pre-Excavation for Cap Installation (AMEC)	OZB-08_0-6	07/16/09	0.0	0.5	-	-	-	-	-	-	-	-	0.454 U	0.311 U	-	0.442 U	0.831 U	0.293 U	0.355 U	0.321 U	0.392 U	-	-	-	-	-	-	-	-
Pre-Excavation for Cap Installation (AMEC)	OZB-09_0-6	07/16/09	0.0	0.5	-	-	-	-	-	-	-	-	0.460 U	0.315 U	-	0.447 U	0.841 U	0.296 U	0.359 U	0.324 U	0.397 U	-	-	-	-	-	-	-	-
Pre-Excavation for Cap Installation (AMEC)	PZB-05_6-12	07/16/09	0.5	1.0	-	-	-	-	-	-	-	-	0.444 U	0.304 U	-	0.432 U	0.812 U	0.286 U	0.347 U	0.313 U	0.383 U	-	-	-	-	-	-	-	-
Pre-Excavation for Cap Installation (AMEC)	PZB-05_6-12Dup	07/16/09	0.5	1.0	-	-	-	-	-	-	-	-	0.438 U	0.300 U	-	0.426 U	0.800 U	0.282 U	0.342 U	0.309 U	0.378 U	-	-	-	-	-	-	-	-
Post-Excavation for Cap Installation (AMEC)	PZB-05A	12/20/10	0.0	0.5	-	-	-	-	-	-	-	-	1.75 U	1.70 U	-	1.06 U	1.12 U	**2.63 J**	0.754 U	**3.56 J**	1.55 U	-	-	-	-	-	-	-	-
Post-Excavation for Cap Installation (AMEC)	PZB-05A Dup	12/20/10	0.0	0.5	-	-	-	-	-	-	-	-	1.81 U	1.77 U	-	1.10 U	**2.88 J**	**2.40 J**	0.783 U	**2.91 J**	1.61 U	-	-	-	-	-	-	-	-
Post-Excavation for Cap Installation (AMEC)	PZB-05B	12/20/10	0.0	0.5	-	-	-	-	-	-	-	-	1.61 U	1.57 U	-	0.980 U	1.03 U	0.707 U	0.697 U	0.965 U	1.43 U	-	-	-	-	-	-	-	-
Post-Excavation for Cap Installation (AMEC)	PZB-05C	12/20/10	0.0	0.5	-	-	-	-	-	-	-	-	1.73 U	1.68 U	-	1.05 U	1.10 U	0.756 U	0.745 U	**2.32 J**	1.53 U	-	-	-	-	-	-	-	-
Post-Excavation for Cap Installation (AMEC)	PZB-05D	12/20/10	0.0	0.5	-	-	-	-	-	-	-	-	1.61 U	1.57 U	-	0.980 U	1.03 U	0.707 U	0.697 U	0.964 U	1.43 U	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B001-0-3	04/10/12	0	3	-	41.7 UJ	41.7 UJ	-	-	-	-	2.2 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B002-0-3	04/10/12	0	3	-	40.2 U	40.2 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B003-0-3	04/10/12	0	3	-	41.4 U	41.4 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B004-0-3	04/10/12	0	3	-	40.6 U	40.6 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B005-0-3	04/10/12	0	3	-	39.3 U	39.3 U	-	-	-	-	2.0 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table O-4
Pasco Landfill Zone B Soil Sample Results
Semi-Volatile Organic Compounds

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	Chrysene	Dibenzo(a,h)anthracene	Dibenzofuran	Diethyl phthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	Dinoseb	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Indeno(1,2,3-cd)pyrene	Isophorone	Naphthalene	Nitrobenzene	N-Nitrosodi-n-propylamine	N-Nitrosodiphenylamine	Pentachlorophenol	Phenanthrene	Phenol	Pyrene	Tetrachlorophenols (2)
Draft Human Health Screening Level					18,000,000	18,000	3,500,000	-	-	-	-	-	140,000,000	140,000,000	-	-	-	-	180,000	-	70,000,000	-	-	-	328,000	-	-	105,000,000	-
Draft Ecological Screening Level					1,100	1,100	-	-	-	-	-	-	1,100	30,000	-	-	-	-	1,100	-	100,000	-	-	-	4,500	100,000	-	1,100	-
Method C, Carcinogen, Direct Contact (ingestion only), industrial land use							-	-	-	-	-	-	-	-	82,031	1,682,692	-	9,375,000		138,157,895	-	-	18,750	26,785,714		-	-	-	-
Method C, Non-carcinogen, Direct Contact (ingestion only), industrial land use					-	-		-	-	-	-	-			2,800,000	3,500,000	21,000,000	3,500,000	-	700,000,000		7,000,000	-	-		-	1,050,000,000		-
Event	**Sample ID**	**Date Sampled**	**Start Depth (ft)**	**End Depth (ft)**	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	11.0	11.0	360 U	360 U	360 U	360 U	360 U	**1,800 B**	360 U	-	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U	1,800 U	360 U	360 U	360 U	-
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	21.0	21.0	360 U	360 U	360 U	360 U	360 U	**2,000 B**	360 U	-	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U	1,800 U	360 U	360 U	360 U	-
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	31.0	31.0	350 U	350 U	350 U	350 U	350 U	**2,300 B**	350 U	-	350 U	350 U	350 U	350 U	350 U	350 U	350 U	350 U	350 U	350 U	350 U	350 U	1,800 U	350 U	350 U	350 U	-
RI Phase I (Burlington Environmental Inc.)	B-05	02/04/93	41.0	41.0	350 U	350 U	350 U	350 U	350 U	**2,300 B**	350 U	-	350 U	350 U	350 U	350 U	350 U	350 U	350 U	350 U	350 U	350 U	350 U	350 U	1,700 U	350 U	350 U	350 U	-
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	11.0	11.0	360 U	360 U	360 U	360 U	360 U	**220 JB**	360 U	-	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U	1,800 U	360 U	360 U	360 U	-
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	21.0	21.0	360 U	360 U	360 U	360 U	360 U	**240 JB**	**110 J**	-	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U	360 U	1,800 U	360 U	360 U	360 U	-
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	31.0	31.0	340 U	340 U	340 U	340 U	340 U	**120 JB**	340 U	-	340 U	340 U	340 U	340 U	340 U	340 U	340 U	340 U	340 U	340 U	340 U	340 U	1,700 U	340 U	340 U	340 U	-
RI Phase I (Burlington Environmental Inc.)	B-06	02/04/93	46.0	46.0	350 U	350 U	350 U	350 U	350 U	350 U	350 U	-	350 U	350 U	350 U	350 U	350 U	350 U	350 U	350 U	350 U	350 U	350 U	350 U	1,700 U	350 U	350 U	350 U	-
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-01-302	03/13/02	0.0	0.5	1,630,000 U	1,630,000 U	1,630,000 U	1,630,000 U	1,630,000 U	1,630,000 U	1,630,000 U	-	1,630,000 U	1,630,000 U	1,630,000 U	1,630,000 U	2,470,000 U	1,630,000 U	1,630,000 U	1,630,000 U	1,630,000 U	1,630,000 U	1,630,000 U	1,630,000 U	2,470,000 U	1,630,000 U	1,630,000 U	1,630,000 U	-
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-02-302	03/13/02	0.0	0.5	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	-	16,400 U	16,400 U	16,400 U	16,400 U	24,900 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	24,900 U	16,400 U	**127,000**	16,400 U	-
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-03-302	03/13/02	0.0	0.5	3,300 U	3,300 U	3,300 U	3,300 U	3,300 U	3,300 U	3,300 U	-	3,300 U	3,300 U	3,300 U	3,300 U	5,000 U	3,300 U	3,300 U	3,300 U	3,300 U	3,300 U	3,300 U	3,300 U	**1,990,000**	3,300 U	3,300 U	3,300 U	-
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-04-302	03/13/02	0.0	0.5	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	-	6,600 U	6,600 U	6,600 U	6,600 U	10,000 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	10,000 U	6,600 U	6,600 U	6,600 U	-
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-05-302	03/13/02	0.0	0.5	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	-	6,600 U	6,600 U	6,600 U	6,600 U	10,000 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	6,600 U	10,000 U	6,600 U	**305,000**	6,600 U	-
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-06-302	03/13/02	0.0	0.5	16,300 U	16,300 U	16,300 U	16,300 U	16,300 U	16,300 U	16,300 U	-	16,300 U	16,300 U	16,300 U	16,300 U	24,700 U	16,300 U	16,300 U	16,300 U	16,300 U	16,300 U	16,300 U	16,300 U	24,700 U	16,300 U	**68,100**	16,300 U	-
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-07-302	03/13/02	0.0	0.5	82,200 U	82,200 U	82,200 U	82,200 U	82,200 U	82,200 U	82,200 U	-	82,200 U	82,200 U	82,200 U	82,200 U	125,000 U	82,200 U	82,200 U	82,200 U	82,200 U	82,200 U	82,200 U	82,200 U	125,000 U	82,200 U	**315,000**	82,200 U	-
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-96-302	03/13/02	0.0	0.5	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	-	16,400 U	16,400 U	16,400 U	16,400 U	24,800 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	16,400 U	24,800 U	16,400 U	**69,600**	16,400 U	-
Confirmation Post-Drum Removal (AMEC)	PZB0101	02/28/05	0.0	0.5	140 U	120 U	140 U	140 U	140 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U	1,000 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB0201	02/28/05	0.0	0.5	140 U	120 U	140 U	140 U	140 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U	1,000 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB0301	02/28/05	0.0	0.5	140 U	120 U	140 U	140 U	140 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U	1,000 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB0401	02/28/05	0.0	0.5	140 U	120 U	140 U	140 U	140 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U	1,000 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB0501	02/28/05	0.0	0.5	**267 J**	120 U	140 U	140 U	140 U	1,000 U	140 U	1,000 U	**493 J**	140 U	140 U	1,000 U	1,000 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	**439 J**	140 U	**357 J**	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB0601	02/28/05	0.0	0.5	140 U	120 U	140 U	140 U	140 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U	1,000 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB0701	02/28/05	0.0	0.5	140 U	120 U	140 U	140 U	140 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U	1,000 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB0801	02/28/05	0.0	0.5	140 U	120 U	140 U	140 U	140 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U	1,000 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB0901	02/28/05	0.0	0.5	140 U	120 U	140 U	140 U	140 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U	1,000 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB1001	02/28/05	0.0	0.5	140 U	120 U	140 U	140 U	140 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U	1,000 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB1101	02/28/05	0.0	0.5	140 U	120 U	140 U	140 U	140 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U	1,000 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB1102	02/28/05	0.0	0.5	140 U	120 U	140 U	140 U	140 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U	1,000 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB1201	02/28/05	0.0	0.5	140 U	120 U	140 U	140 U	140 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U	1,000 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB1301	02/28/05	0.0	0.5	140 U	120 U	140 U	140 U	140 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U	1,000 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB1401	02/28/05	0.0	0.5	140 U	120 U	140 U	140 U	140 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U	1,000 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB1501	02/28/05	0.0	0.5	140 U	120 U	140 U	140 U	140 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U	1,000 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U
Confirmation Post-Drum Removal (AMEC)	PZB1601	02/28/05	0.0	0.5	140 U	120 U	140 U	140 U	140 U	1,000 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U	1,000 U	1,000 U	140 U	140 U	140 U	140 U	140 U	140 U	1,000 U	140 U	140 U	140 U	1,000 U
Pre-Excavation for Cap Installation (AMEC)	OZB-07_0-6	07/16/09	0.0	0.5	0.331 U	1.18 U	-	-	-	-	-	-	0.644 U	0.458 U	-	-	-	-	1.51 U	-	0.385 U	-	-	-	-	0.344 U	-	0.716 U	-
Pre-Excavation for Cap Installation (AMEC)	OZB-08_0-6	07/16/09	0.0	0.5	0.327 U	1.16 U	-	-	-	-	-	-	0.635 U	0.451 U	-	-	-	-	1.48 U	-	0.380 U	-	-	-	-	0.339 U	-	0.707 U	-
Pre-Excavation for Cap Installation (AMEC)	OZB-09_0-6	07/16/09	0.0	0.5	0.331 U	1.18 U	-	-	-	-	-	-	0.643 U	0.457 U	-	-	-	-	1.50 U	-	0.384 U	-	-	-	-	0.343 U	-	0.715 U	-
Pre-Excavation for Cap Installation (AMEC)	PZB-05_6-12	07/16/09	0.5	1.0	0.319 U	1.14 U	-	-	-	-	-	-	0.620 U	0.441 U	-	-	-	-	1.45 U	-	0.371 U	-	-	-	-	0.331 U	-	0.690 U	-
Pre-Excavation for Cap Installation (AMEC)	PZB-05_6-12Dup	07/16/09	0.5	1.0	0.315 U	1.12 U	-	-	-	-	-	-	0.611 U	0.435 U	-	-	-	-	1.43 U	-	0.366 U	-	-	-	-	0.327 U	-	0.680 U	-
Post-Excavation for Cap Installation (AMEC)	PZB-05A	12/20/10	0.0	0.5	**11.0**	1.09 U	-	-	-	-	-	-	**3.22 J**	1.48 U	-	-	-	-	1.16 U	-	**4.48 J**	-	-	-	-	**5.20 J**	-	**5.16 J**	-
Post-Excavation for Cap Installation (AMEC)	PZB-05A Dup	12/20/10	0.0	0.5	**6.07 J**	1.13 U	-	-	-	-	-	-	**2.99 J**	1.54 U	-	-	-	-	1.20 U	-	**4.53 J**	-	-	-	-	**3.30 J**	-	**3.17 J**	-
Post-Excavation for Cap Installation (AMEC)	PZB-05B	12/20/10	0.0	0.5	0.886 U	1.01 U	-	-	-	-	-	-	1.24 U	1.37 U	-	-	-	-	1.07 U	-	1.95 U	-	-	-	-	1.20 U	-	1.30 U	-
Post-Excavation for Cap Installation (AMEC)	PZB-05C	12/20/10	0.0	0.5	0.947 U	1.08 U	-	-	-	-	-	-	1.32 U	1.46 U	-	-	-	-	1.15 U	-	**2.10 J**	-	-	-	-	**2.39 J**	-	**4.95 J**	-
Post-Excavation for Cap Installation (AMEC)	PZB-05D	12/20/10	0.0	0.5	0.886 U	1.01 U	-	-	-	-	-	-	1.24 U	1.37 U	-	-	-	-	1.07 U	-	1.95 U	-	-	-	-	1.20 U	-	1.30 U	-
ZoneB_April2012 (AMEC)	B001-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83.5 UJ	-	-	-	-
ZoneB_April2012 (AMEC)	B002-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B003-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B004-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.2 U	-	-	-	-
ZoneB_April2012 (AMEC)	B005-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78.7 UJ	-	-	-	-

Table O-4
Pasco Landfill Zone B Soil Sample Results
Semi-Volatile Organic Compounds

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1-Methylnaphthalene	2,3,4,6-Tetrachlorophenol	2,3,5,6-Tetrachlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dichlorophenol	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylphenol	2-Nitroaniline	2-Nitrophenol	3 & 4-Chlorophenol	3,3'-Dichlorobenzidine	3-,4-Methylphenol	3-Nitroaniline	4,6-Dinitro-2-methylphenol
Draft Human Health Screening Level					-	-	-	-	-	-	-	350,000,000	3,500,000	10,500,000	-	-	-	10,500,000	-	-	17,500,000	-	-	-	-	-	-	-	-
Draft Ecological Screening Level					-	-	-	-	-	-	-	14,100	9,940	87,500	-	-	-	1,170	-	-	243	-	-	-	-	-	-	-	-
Method C, Carcinogen, Direct Contact (ingestion only), industrial land use					4,530,000	-	-	-	-	-	-				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Method C, Non-carcinogen, Direct Contact (ingestion only), industrial land use					35,000,000	315,000,000	-	-	-	-	-				70,000,000	7,000,000	7,000,000	-	3,500,000	-		-	35,000,000	-	-	-	-	-	-
					ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
ZoneB_April2012 (AMEC)	B006-0-3	04/10/12	0	3	-	-	-	-	-	20.8 U	20.8 U	20.8 U	20.8 U	20.8 U	-	-	-	20.8 U	-	-	20.8 U	-	-	-	41.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B007-0-3	04/10/12	0	3	-	-	-	-	-	20.4 U	20.4 U	20.4 U	20.4 U	20.4 U	-	-	-	20.4 U	-	-	20.4 U	-	-	-	40.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B008-0-3	04/10/12	0	3	-	-	-	-	-	20.7 U	20.7 U	20.7 U	20.7 U	20.7 U	-	-	-	20.7 U	-	-	20.7 U	-	-	-	41.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B009-0-3	04/10/12	0	3	-	-	-	-	-	20.2 U	20.2 U	20.2 U	20.2 U	20.2 U	-	-	-	20.2 U	-	-	20.2 U	-	-	-	40.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B010-0-3	04/10/12	0	3	-	-	-	-	-	20.3 U	20.3 U	20.3 U	20.3 U	20.3 U	-	-	-	20.3 U	-	-	20.3 U	-	-	-	40.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B011-0-3	04/10/12	0	3	-	-	-	-	-	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	-	-	-	20.0 U	-	-	20.0 U	-	-	-	40.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B012-0-3	04/10/12	0	3	-	-	-	-	-	20.2 U	20.2 U	20.2 U	20.2 U	20.2 U	-	-	-	20.2 U	-	-	20.2 U	-	-	-	40.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B013-0-3	04/10/12	0	3	-	-	-	-	-	20.5 U	20.5 U	20.5 U	20.5 U	20.5 U	-	-	-	20.5 U	-	-	20.5 U	-	-	-	40.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B014-0-3	04/10/12	0	3	-	-	-	-	-	20.4 U	20.4 U	20.4 U	20.4 U	20.4 U	-	-	-	20.4 U	-	-	20.4 U	-	-	-	40.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B015-0-3	04/10/12	0	3	-	-	-	-	-	20.5 U	20.5 U	20.5 U	20.5 U	20.5 U	-	-	-	20.5 U	-	-	20.5 U	-	-	-	41.0 U	-	-	-	-
ZoneB_April2012 (AMEC)	B016-0-3	04/10/12	0	3	-	-	-	-	-	20.3 U	20.3 U	20.3 U	20.3 U	20.3 U	-	-	-	20.3 U	-	-	20.3 U	-	-	-	40.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B017-0-3	04/10/12	0	3	-	-	-	-	-	19.7 UJ	19.7 UJ	19.7 UJ	19.7 UJ	19.7 UJ	-	-	-	19.7 UJ	-	-	19.7 UJ	-	-	-	39.4 UJ	-	-	-	-
ZoneB_April2012 (AMEC)	B018-0-3	04/10/12	0	3	-	-	-	-	-	20.6 U	20.6 U	20.6 U	20.6 U	20.6 U	-	-	-	20.6 U	-	-	20.6 U	-	-	-	41.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B019-0-3	04/10/12	0	3	-	-	-	-	-	20.3 U	20.3 U	20.3 U	20.3 U	20.3 U	-	-	-	20.3 U	-	-	20.3 U	-	-	-	40.5 U	-	-	-	-
ZoneB_April2012 (AMEC)	B020-0-3	04/10/12	0	3	-	-	-	-	-	20.4 UJ	20.4 UJ	20.4 UJ	20.4 UJ	20.4 UJ	-	-	-	20.4 UJ	-	-	20.4 UJ	-	-	-	40.8 UJ	-	-	-	-
ZoneB_April2012 (AMEC)	B020-0-3D	04/10/12	0	3	-	-	-	-	-	22.9 U	22.9 U	22.9 U	22.9 U	22.9 U	-	-	-	22.9 U	-	-	22.9 U	-	-	-	45.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B021-0-3	04/10/12	0	3	-	-	-	-	-	23.9 U	23.9 U	23.9 U	23.9 U	23.9 U	-	-	-	23.9 U	-	-	23.9 U	-	-	-	47.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B022-0-3	04/10/12	0	3	-	-	-	-	-	22.1 U	22.1 U	22.1 U	22.1 U	22.1 U	-	-	-	22.1 U	-	-	22.1 U	-	-	-	44.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B023-0-3	04/10/12	0	3	-	-	-	-	-	23.6 U	23.6 U	23.6 U	23.6 U	23.6 U	-	-	-	23.6 U	-	-	23.6 U	-	-	-	47.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B024-0-3	04/10/12	0	3	-	-	-	-	-	21.8 U	21.8 U	21.8 U	21.8 U	21.8 U	-	-	-	21.8 U	-	-	21.8 U	-	-	-	43.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B025-0-3	04/10/12	0	3	-	-	-	-	-	22.3 U	22.3 U	22.3 U	22.3 U	22.3 U	-	-	-	22.3 U	-	-	22.3 U	-	-	-	44.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B026-0-3	04/10/12	0	3	-	-	-	-	-	23.0 U	23.0 U	23.0 U	23.0 U	23.0 U	-	-	-	23.0 U	-	-	23.0 U	-	-	-	45.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B027-0-3	04/10/12	0	3	-	-	-	-	-	24.2 U	24.2 U	24.2 U	24.2 U	24.2 U	-	-	-	24.2 U	-	-	24.2 U	-	-	-	48.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B028-0-3	04/10/12	0	3	-	-	-	-	-	23.1 U	23.1 U	23.1 U	23.1 U	23.1 U	-	-	-	23.1 U	-	-	23.1 U	-	-	-	46.2 U	-	-	-	-
ZoneB_April2012 (AMEC)	B029-0-3	04/10/12	0	3	-	-	-	-	-	21.7 U	21.7 U	21.7 U	21.7 U	21.7 U	-	-	-	21.7 U	-	-	21.7 U	-	-	-	43.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B030-0-3	04/10/12	0	3	-	-	-	-	-	21.1 U	21.1 U	21.1 U	21.1 U	21.1 U	-	-	-	21.1 U	-	-	21.1 U	-	-	-	42.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B031-0-3	04/10/12	0	3	-	-	-	-	-	21.5 U	21.5 U	21.5 U	21.5 U	21.5 U	-	-	-	21.5 U	-	-	21.5 U	-	-	-	43.0 U	-	-	-	-
ZoneB_April2012 (AMEC)	B032-0-3	04/10/12	0	3	-	-	-	-	-	22.5 U	22.5 U	22.5 U	22.5 U	22.5 U	-	-	-	22.5 U	-	-	22.5 U	-	-	-	45.0 U	-	-	-	-
ZoneB_April2012 (AMEC)	B033-0-3	04/10/12	0	3	-	-	-	-	-	22.2 U	22.2 U	22.2 U	22.2 U	22.2 U	-	-	-	22.2 U	-	-	22.2 U	-	-	-	44.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B034-0-3	04/10/12	0	3	-	-	-	-	-	21.2 U	21.2 U	21.2 U	21.2 U	21.2 U	-	-	-	21.2 U	-	-	21.2 U	-	-	-	42.5 U	-	-	-	-
ZoneB_April2012 (AMEC)	B035-0-3	04/10/12	0	3	-	-	-	-	-	22.9 U	22.9 U	22.9 U	22.9 U	22.9 U	-	-	-	22.9 U	-	-	22.9 U	-	-	-	45.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B036-0-3	04/11/12	0	3	-	-	-	-	-	21.0 U	21.0 U	21.0 U	21.0 U	21.0 U	-	-	-	21.0 U	-	-	21.0 U	-	-	-	41.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B037-0-3	04/11/12	0	3	-	-	-	-	-	20.4 U	20.4 U	20.4 U	20.4 U	20.4 U	-	-	-	20.4 U	-	-	20.4 U	-	-	-	40.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B038-0-3	04/11/12	0	3	-	-	-	-	-	20.3 U	20.3 U	20.3 U	20.3 U	20.3 U	-	-	-	20.3 U	-	-	20.3 U	-	-	-	40.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B039-0-3	04/11/12	0	3	-	-	-	-	-	20.3 U	20.3 U	20.3 U	20.3 U	20.3 U	-	-	-	20.3 U	-	-	20.3 U	-	-	-	40.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B040-0-3	04/11/12	0	3	-	-	-	-	-	20.5 U	20.5 U	20.5 U	20.5 U	20.5 U	-	-	-	20.5 U	-	-	20.5 U	-	-	-	41.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B040-0-3D	04/11/12	0	3	-	-	-	-	-	20.2 U	20.2 U	20.2 U	20.2 U	20.2 U	-	-	-	20.2 U	-	-	20.2 U	-	-	-	40.5 U	-	-	-	-
ZoneB_April2012 (AMEC)	B041-0-3	04/11/12	0	3	-	-	-	-	-	20.3 U	20.3 U	20.3 U	20.3 U	20.3 U	-	-	-	20.3 U	-	-	20.3 U	-	-	-	40.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B042-0-3	04/11/12	0	3	-	-	-	-	-	20.1 U	20.1 U	20.1 U	20.1 U	20.1 U	-	-	-	20.1 U	-	-	20.1 U	-	-	-	40.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B043-0-3	04/11/12	0	3	-	-	-	-	-	20.4 U	20.4 U	20.4 U	20.4 U	20.4 U	-	-	-	20.4 U	-	-	20.4 U	-	-	-	40.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B044-0-3	04/11/12	0	3	-	-	-	-	-	20.3 U	20.3 U	20.3 U	20.3 U	20.3 U	-	-	-	20.3 U	-	-	20.3 U	-	-	-	40.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B045-0-3	04/11/12	0	3	-	-	-	-	-	20.7 U	20.7 U	20.7 U	20.7 U	20.7 U	-	-	-	20.7 U	-	-	20.7 U	-	-	-	41.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B046-0-3	04/11/12	0	3	-	-	-	-	-	20.6 U	20.6 U	20.6 U	20.6 U	20.6 U	-	-	-	20.6 U	-	-	20.6 U	-	-	-	41.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B047-0-3	04/11/12	0	3	-	-	-	-	-	20.2 U	20.2 U	20.2 U	20.2 U	20.2 U	-	-	-	20.2 U	-	-	20.2 U	-	-	-	40.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B048-0-3	04/11/12	0	3	-	-	-	-	-	20.9 U	20.9 U	20.9 U	20.9 U	20.9 U	-	-	-	20.9 U	-	-	20.9 U	-	-	-	41.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B049-0-3	04/11/12	0	3	-	-	-	-	-	20.7 U	20.7 U	20.7 U	20.7 U	20.7 U	-	-	-	20.7 U	-	-	20.7 U	-	-	-	41.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B050-0-3	04/11/12	0	3	-	-	-	-	-	21.3 U	21.3 U	21.3 U	21.3 U	21.3 U	-	-	-	21.3 U	-	-	21.3 U	-	-	-	42.5 U	-	-	-	-
ZoneB_April2012 (AMEC)	B051-0-3	04/11/12	0	3	-	-	-	-	-	21.0 U	21.0 U	21.0 U	**35.3 J**	21.0 U	-	-	-	21.0 U	-	-	21.0 U	-	-	-	41.9 U	-	-	-	-

Table O-4
Pasco Landfill Zone B Soil Sample Results
Semi-Volatile Organic Compounds

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	4-Bromophenyl phenyl ether	4-Chloro-3-methylphenol	4-Chloro-o-cresol	4-Chloroaniline	4-Chlorophenyl phenyl ether	4-Methylphenol	4-Nitroaniline	4-Nitrophenol	Acenaphthene	Acenaphthylene	Aniline	A'-hracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Benzoic Acid	Benzyl alcohol	Bis(2-chloroethoxy)methane	Bis(2-chloroethyl) ether	Bis(2-chloroisopropyl) ether	Bis(2-ethylhexyl)phthalate	Butyl benzyl phthalate	Carbazole
Draft Human Health Screening Level					-	62,000,000	-	-	-	-	-	-	210,000,000	-	-	1,050,000,000	180,000	18,000	180,000	-	1,800,000	-	-	-	-	-	-	-	-
Draft Ecological Screening Level					-	7,000	-	-	-	-	-	-	100,000	100,000	-	100,000	1,100	12,000	1,100	1,100	1,100	-	-	-	-	-	-	-	-
Method C, Carcinogen, Direct Contact (ingestion only), industrial land use					-	-	-	656,000	-	-	-	-	-	-	23,026,316	-				-		-	-	-	119,318	-	9,375,000	69,100,000	-
Method C, Non-carcinogen, Direct Contact (ingestion only), industrial land use					-	-	-	14,000,000	-	-	-	-		-	24,500,000		-	-	-	-	-	14,000,000,000	350,000,000	-	-	-	70,000,000	700,000,000	-
					ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
ZoneB_April2012 (AMEC)	B006-0-3	04/10/12	0	3	-	41.7 U	41.7 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B007-0-3	04/10/12	0	3	-	40.8 U	40.8 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B008-0-3	04/10/12	0	3	-	41.4 U	41.4 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B009-0-3	04/10/12	0	3	-	40.4 U	40.4 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B010-0-3	04/10/12	0	3	-	40.6 U	40.6 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B011-0-3	04/10/12	0	3	-	40.1 U	40.1 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B012-0-3	04/10/12	0	3	-	40.4 U	40.4 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B013-0-3	04/10/12	0	3	-	40.9 U	40.9 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B014-0-3	04/10/12	0	3	-	40.8 U	40.8 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B015-0-3	04/10/12	0	3	-	41.0 U	41.0 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B016-0-3	04/10/12	0	3	-	40.7 U	40.7 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B017-0-3	04/10/12	0	3	-	39.4 UJ	39.4 UJ	-	-	-	-	2.0 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B018-0-3	04/10/12	0	3	-	41.1 U	41.1 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B019-0-3	04/10/12	0	3	-	40.5 U	40.5 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B020-0-3	04/10/12	0	3	-	40.8 UJ	40.8 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B020-0-3D	04/10/12	0	3	-	45.8 U	45.8 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B021-0-3	04/10/12	0	3	-	47.8 U	47.8 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B022-0-3	04/10/12	0	3	-	44.1 U	44.1 U	-	-	-	-	2.0 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B023-0-3	04/10/12	0	3	-	47.1 U	47.1 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B024-0-3	04/10/12	0	3	-	43.7 U	43.7 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B025-0-3	04/10/12	0	3	-	44.6 U	44.6 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B026-0-3	04/10/12	0	3	-	45.9 U	45.9 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B027-0-3	04/10/12	0	3	-	48.4 U	48.4 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B028-0-3	04/10/12	0	3	-	46.2 U	46.2 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B029-0-3	04/10/12	0	3	-	43.3 U	43.3 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B030-0-3	04/10/12	0	3	-	42.3 U	42.3 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B031-0-3	04/10/12	0	3	-	43.0 U	43.0 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B032-0-3	04/10/12	0	3	-	45.0 U	45.0 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B033-0-3	04/10/12	0	3	-	44.3 U	44.3 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B034-0-3	04/10/12	0	3	-	42.5 U	42.5 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B035-0-3	04/10/12	0	3	-	45.7 U	45.7 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B036-0-3	04/11/12	0	3	-	41.9 U	41.9 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B037-0-3	04/11/12	0	3	-	40.8 U	40.8 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B038-0-3	04/11/12	0	3	-	40.7 U	40.7 U	-	-	-	-	1.3 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B039-0-3	04/11/12	0	3	-	40.6 U	40.6 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B040-0-3	04/11/12	0	3	-	41.1 U	41.1 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B040-0-3D	04/11/12	0	3	-	40.5 U	40.5 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B041-0-3	04/11/12	0	3	-	40.7 U	40.7 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B042-0-3	04/11/12	0	3	-	40.3 U	40.3 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B043-0-3	04/11/12	0	3	-	40.8 U	40.8 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B044-0-3	04/11/12	0	3	-	40.7 U	40.7 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B045-0-3	04/11/12	0	3	-	41.4 U	41.4 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B046-0-3	04/11/12	0	3	-	41.1 U	41.1 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B047-0-3	04/11/12	0	3	-	40.4 U	40.4 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B048-0-3	04/11/12	0	3	-	41.7 U	41.7 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B049-0-3	04/11/12	0	3	-	41.3 U	41.3 U	-	-	-	-	2.2 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B050-0-3	04/11/12	0	3	-	42.5 U	42.5 U	-	-	-	-	2.2 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B051-0-3	04/11/12	0	3	-	41.9 U	41.9 U	-	-	-	-	2.2 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table O-4
Pasco Landfill Zone B Soil Sample Results
Semi-Volatile Organic Compounds

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	Chrysene	Dibenzo(a,h)anthracene	Dibenzofuran	Diethyl phthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	Dinoseb	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Indeno(1,2,3-cd)pyrene	Isophorone	Naphthalene	Nitrobenzene	N-Nitrosodi-n-propylamine	N-Nitrosodiphenylamine	Pentachlorophenol	Phenanthrene	Phenol	Pyrene	Tetrachlorophenols (2)
Draft Human Health Screening Level					18,000,000	18,000	3,500,000	-	-	-	-	-	140,000,000	140,000,000	-	-	-	-	180,000	-	70,000,000	-	-	-	328,000	-	-	105,000,000	-
Draft Ecological Screening Level					1,100	1,100	-	-	-	-	-	-	1,100	30,000	-	-	-	-	1,100	-	100,000	-	-	-	4,500	100,000	-	1,100	-
Method C, Carcinogen, Direct Contact (ingestion only), industrial land use							-	-	-	-	-	-	-	-	82,031	1,682,692	-	9,375,000		138,157,895	-	-	18,750	26,785,714		-	-	-	-
Method C, Non-carcinogen, Direct Contact (ingestion only), industrial land use					-	-		-	-	-	-	-			2,800,000	3,500,000	21,000,000	3,500,000	-	700,000,000		7,000,000	-	-		-	1,050,000,000		-
					ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
ZoneB_April2012 (AMEC)	B006-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B007-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B008-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B009-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B010-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B011-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80.2 U	-	-	-	-
ZoneB_April2012 (AMEC)	B012-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B013-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B014-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.5 U	-	-	-	-
ZoneB_April2012 (AMEC)	B015-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B016-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B017-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78.8 UJ	-	-	-	-
ZoneB_April2012 (AMEC)	B018-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B019-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B020-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.6 UJ	-	-	-	-
ZoneB_April2012 (AMEC)	B020-0-3D	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B021-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	95.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B022-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	88.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B023-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	94.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B024-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	87.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B025-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	89.2 U	-	-	-	-
ZoneB_April2012 (AMEC)	B026-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B027-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	96.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B028-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	92.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B029-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B030-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B031-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86.0 U	-	-	-	-
ZoneB_April2012 (AMEC)	B032-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B033-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	88.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B034-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B035-0-3	04/10/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B036-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B037-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B038-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B039-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.2 U	-	-	-	-
ZoneB_April2012 (AMEC)	B040-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B040-0-3D	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B041-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B042-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80.5 U	-	-	-	-
ZoneB_April2012 (AMEC)	B043-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B044-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B045-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B046-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B047-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B048-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B049-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B050-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B051-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83.8 U	-	-	-	-

Table O-4
Pasco Landfill Zone B Soil Sample Results
Semi-Volatile Organic Compounds

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1-Methylnaphthalene	2,3,4,6-Tetrachlorophenol	2,3,5,6-Tetrachlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dichlorophenol	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylphenol	2-Nitroaniline	2-Nitrophenol	3 & 4-Chlorophenol	3,3'-Dichlorobenzidine	3-,4-Methylphenol	3-Nitroaniline	4,6-Dinitro-2-methylphenol
Draft Human Health Screening Level					-	-	-	-	-	-	-	350,000,000	3,500,000	10,500,000	-	-	-	10,500,000	-	-	17,500,000	-	-	-	-	-	-	-	-
Draft Ecological Screening Level					-	-	-	-	-	-	-	14,100	9,940	87,500	-	-	-	1,170	-	-	243	-	-	-	-	-	-	-	-
Method C, Carcinogen, Direct Contact (ingestion only), industrial land use					4,530,000	-	-	-	-	-	-				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Method C, Non-carcinogen, Direct Contact (ingestion only), industrial land use					35,000,000	315,000,000	-	-	-	-	-				70,000,000	7,000,000	7,000,000	-	3,500,000	-		-	35,000,000	-	-	-	-	-	-
					ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
ZoneB_April2012 (AMEC)	B052-0-3	04/11/12	0	3	-	-	-	-	-	21.0 U	21.0 U	21.0 U	21.0 U	21.0 U	-	-	-	21.0 U	-	-	21.0 U	-	-	-	42.0 U	-	-	-	-
ZoneB_April2012 (AMEC)	B053-0-3	04/11/12	0	3	-	-	-	-	-	20.7 U	20.7 U	20.7 U	20.7 U	20.7 U	-	-	-	20.7 U	-	-	20.7 U	-	-	-	41.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B054-0-3	04/11/12	0	3	-	-	-	-	-	20.9 U	20.9 U	20.9 U	20.9 U	20.9 U	-	-	-	20.9 U	-	-	20.9 U	-	-	-	41.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B055-0-3	04/11/12	0	3	-	-	-	-	-	20.6 U	20.6 U	20.6 U	20.6 U	20.6 U	-	-	-	20.6 U	-	-	20.6 U	-	-	-	41.2 U	-	-	-	-
ZoneB_April2012 (AMEC)	B056-0-3	04/11/12	0	3	-	-	-	-	-	20.9 U	20.9 U	20.9 U	20.9 U	20.9 U	-	-	-	20.9 U	-	-	20.9 U	-	-	-	41.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B057-0-3	04/11/12	0	3	-	-	-	-	-	20.7 U	20.7 U	20.7 U	20.7 U	20.7 U	-	-	-	20.7 U	-	-	20.7 U	-	-	-	41.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B058-0-3	04/11/12	0	3	-	-	-	-	-	20.5 U	20.5 U	20.5 U	20.5 U	20.5 U	-	-	-	20.5 U	-	-	20.5 U	-	-	-	41.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B059-0-3	04/11/12	0	3	-	-	-	-	-	20.8 U	20.8 U	20.8 U	20.8 U	20.8 U	-	-	-	20.8 U	-	-	20.8 U	-	-	-	41.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B060-0-3	04/11/12	0	3	-	-	-	-	-	20.4 U	20.4 U	20.4 U	20.4 U	20.4 U	-	-	-	20.4 U	-	-	20.4 U	-	-	-	40.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B060-0-3D	04/11/12	0	3	-	-	-	-	-	20.4 U	20.4 U	20.4 U	20.4 U	20.4 U	-	-	-	20.4 U	-	-	20.4 U	-	-	-	40.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B061-0-3	04/11/12	0	3	-	-	-	-	-	20.6 U	20.6 U	20.6 U	20.6 U	20.6 U	-	-	-	20.6 U	-	-	20.6 U	-	-	-	41.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B062-0-3	04/11/12	0	3	-	-	-	-	-	19.9 U	19.9 U	19.9 U	19.9 U	19.9 U	-	-	-	19.9 U	-	-	19.9 U	-	-	-	39.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B063-0-3	04/11/12	0	3	-	-	-	-	-	20.3 U	20.3 U	20.3 U	20.3 U	20.3 U	-	-	-	20.3 U	-	-	20.3 U	-	-	-	40.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B064-0-3	04/11/12	0	3	-	-	-	-	-	20.4 U	20.4 U	20.4 U	20.4 U	20.4 U	-	-	-	20.4 U	-	-	20.4 U	-	-	-	40.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B065-0-3	04/11/12	0	3	-	-	-	-	-	20.3 U	20.3 U	20.3 U	20.3 U	20.3 U	-	-	-	20.3 U	-	-	20.3 U	-	-	-	40.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B066-0-3	04/11/12	0	3	-	-	-	-	-	20.1 U	20.1 U	20.1 U	20.1 U	20.1 U	-	-	-	20.1 U	-	-	20.1 U	-	-	-	40.2 U	-	-	-	-
ZoneB_April2012 (AMEC)	B067-0-3	04/11/12	0	3	-	-	-	-	-	20.5 U	20.5 U	20.5 U	20.5 U	20.5 U	-	-	-	20.5 U	-	-	20.5 U	-	-	-	41.0 U	-	-	-	-
ZoneB_April2012 (AMEC)	B068-0-3	04/11/12	0	3	-	-	-	-	-	20.9 U	20.9 U	20.9 U	20.9 U	20.9 U	-	-	-	20.9 U	-	-	20.9 U	-	-	-	41.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B069-0-3	04/11/12	0	3	-	-	-	-	-	20.5 U	20.5 U	20.5 U	20.5 U	20.5 U	-	-	-	20.5 U	-	-	20.5 U	-	-	-	41.0 U	-	-	-	-
ZoneB_April2012 (AMEC)	B070-0-3	04/11/12	0	3	-	-	-	-	-	20.3 U	20.3 U	20.3 U	20.3 U	20.3 U	-	-	-	20.3 U	-	-	20.3 U	-	-	-	40.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B071-0-3	04/11/12	0	3	-	-	-	-	-	22.0 U	22.0 U	22.0 U	22.0 U	22.0 U	-	-	-	22.0 U	-	-	22.0 U	-	-	-	44.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B072-0-3	04/11/12	0	3	-	-	-	-	-	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	-	-	-	20.0 U	-	-	20.0 U	-	-	-	40.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B073-0-3	04/11/12	0	3	-	-	-	-	-	21.4 UJ	21.4 UJ	21.4 UJ	21.4 UJ	21.4 UJ	-	-	-	21.4 UJ	-	-	21.4 UJ	-	-	-	42.8 UJ	-	-	-	-
ZoneB_April2012 (AMEC)	B074-0-3	04/11/12	0	3	-	-	-	-	-	21.2 U	21.2 U	21.2 U	21.2 U	21.2 U	-	-	-	21.2 U	-	-	21.2 U	-	-	-	42.5 U	-	-	-	-
ZoneB_April2012 (AMEC)	B075-0-3	04/11/12	0	3	-	-	-	-	-	21.0 U	21.0 U	21.0 U	21.0 U	21.0 U	-	-	-	21.0 U	-	-	21.0 U	-	-	-	42.0 U	-	-	-	-
ZoneB_April2012 (AMEC)	B076-0-3	04/12/12	0	3	-	-	-	-	-	21.1 U	21.1 U	21.1 U	21.1 U	21.1 U	-	-	-	21.1 U	-	-	21.1 U	-	-	-	42.2 U	-	-	-	-
ZoneB_April2012 (AMEC)	B077-0-3	04/12/12	0	3	-	-	-	-	-	19.7 UJ	19.7 UJ	19.7 UJ	19.7 UJ	19.7 UJ	-	-	-	19.7 UJ	-	-	19.7 UJ	-	-	-	39.3 UJ	-	-	-	-
ZoneB_April2012 (AMEC)	B078-0-3	04/12/12	0	3	-	-	-	-	-	20.7 U	20.7 U	20.7 U	20.7 U	20.7 U	-	-	-	20.7 U	-	-	20.7 U	-	-	-	41.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B079-0-3	04/12/12	0	3	-	-	-	-	-	19.9 U	19.9 U	19.9 U	19.9 U	19.9 U	-	-	-	19.9 U	-	-	19.9 U	-	-	-	39.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B080-0-3	04/12/12	0	3	-	-	-	-	-	20.5 U	20.5 U	20.5 U	20.5 U	20.5 U	-	-	-	20.5 U	-	-	20.5 U	-	-	-	40.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B080-0-3D	04/12/12	0	3	-	-	-	-	-	20.5 U	20.5 U	20.5 U	20.5 U	20.5 U	-	-	-	20.5 U	-	-	20.5 U	-	-	-	40.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B081-0-3	04/12/12	0	3	-	-	-	-	-	19.9 U	19.9 U	19.9 U	19.9 U	19.9 U	-	-	-	19.9 U	-	-	19.9 U	-	-	-	39.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B082-0-3	04/12/12	0	3	-	-	-	-	-	20.2 U	20.2 U	20.2 U	20.2 U	20.2 U	-	-	-	20.2 U	-	-	20.2 U	-	-	-	40.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B083-0-3	04/12/12	0	3	-	-	-	-	-	19.6 U	19.6 U	19.6 U	19.6 U	19.6 U	-	-	-	19.6 U	-	-	19.6 U	-	-	-	39.2 U	-	-	-	-
ZoneB_April2012 (AMEC)	B084-0-3	04/12/12	0	3	-	-	-	-	-	21.1 U	21.1 U	21.1 U	21.1 U	21.1 U	-	-	-	21.1 U	-	-	21.1 U	-	-	-	42.2 U	-	-	-	-
ZoneB_April2012 (AMEC)	B085-0-3	04/12/12	0	3	-	-	-	-	-	19.5 U	19.5 U	19.5 U	19.5 U	19.5 U	-	-	-	19.5 U	-	-	19.5 U	-	-	-	39.0 U	-	-	-	-
ZoneB_April2012 (AMEC)	B086-0-3	04/12/12	0	3	-	-	-	-	-	20.2 U	20.2 U	20.2 U	20.2 U	20.2 U	-	-	-	20.2 U	-	-	20.2 U	-	-	-	40.5 U	-	-	-	-
ZoneB_April2012 (AMEC)	B087-0-3	04/12/12	0	3	-	-	-	-	-	20.0 UJ	20.0 UJ	20.0 UJ	20.0 UJ	20.0 U	-	-	-	20.0 U	-	-	20.0 U	-	-	-	40.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B088-0-3	04/12/12	0	3	-	-	-	-	-	19.6 UJ	19.6 UJ	19.6 UJ	19.6 UJ	19.6 UJ	-	-	-	19.6 UJ	-	-	19.6 UJ	-	-	-	39.2 UJ	-	-	-	-
ZoneB_April2012 (AMEC)	B089-0-3	04/12/12	0	3	-	-	-	-	-	20.5 U	20.5 U	20.5 U	20.5 U	20.5 U	-	-	-	20.5 U	-	-	20.5 U	-	-	-	41.0 U	-	-	-	-
ZoneB_April2012 (AMEC)	B090-0-3	04/12/12	0	3	-	-	-	-	-	20.3 U	20.3 U	20.3 U	20.3 U	20.3 U	-	-	-	20.3 U	-	-	20.3 U	-	-	-	40.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B091-0-3	04/12/12	0	3	-	-	-	-	-	20.8 U	20.8 U	20.8 U	20.8 U	20.8 U	-	-	-	20.8 U	-	-	20.8 U	-	-	-	41.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B092-0-3	04/12/12	0	3	-	-	-	-	-	20.1 U	20.1 U	20.1 U	20.1 U	20.1 U	-	-	-	20.1 U	-	-	20.1 U	-	-	-	40.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B093-0-3	04/12/12	0	3	-	-	-	-	-	20.9 U	20.9 U	20.9 U	20.9 U	20.9 U	-	-	-	20.9 U	-	-	20.9 U	-	-	-	41.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B094-0-3	04/12/12	0	3	-	-	-	-	-	21.1 U	21.1 U	21.1 U	21.1 U	21.1 U	-	-	-	21.1 U	-	-	21.1 U	-	-	-	42.2 U	-	-	-	-
ZoneB_April2012 (AMEC)	B095-0-3	04/12/12	0	3	-	-	-	-	-	20.5 U	20.5 U	20.5 U	20.5 U	20.5 U	-	-	-	20.5 U	-	-	20.5 U	-	-	-	41.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B096-0-3	04/12/12	0	3	-	-	-	-	-	20.5 U	20.5 U	20.5 U	20.5 U	20.5 U	-	-	-	20.5 U	-	-	20.5 U	-	-	-	40.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B097-0-3	04/12/12	0	3	-	-	-	-	-	20.5 U	20.5 U	20.5 U	20.5 U	20.5 U	-	-	-	20.5 U	-	-	20.5 U	-	-	-	41.0 U	-	-	-	-

Table O-4
Pasco Landfill Zone B Soil Sample Results
Semi-Volatile Organic Compounds

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	4-Bromophenyl phenyl ether	4-Chloro-3-methylphenol	4-Chloro-o-cresol	4-Chloroaniline	4-Chlorophenyl phenyl ether	4-Methylphenol	4-Nitroaniline	4-Nitrophenol	Acenaphthene	Acenaphthylene	Aniline	A'-hracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Benzoic Acid	Benzyl alcohol	Bis(2-chloroethoxy)methane	Bis(2-chloroethyl) ether	Bis(2-chloroisopropyl) ether	Bis(2-ethylhexyl)phthalate	Butyl benzyl phthalate	Carbazole
Draft Human Health Screening Level					-	62,000,000	-	-	-	-	-	-	210,000,000	-	-	1,050,000,000	180,000	18,000	180,000	-	1,800,000	-	-	-	-	-	-	-	-
Draft Ecological Screening Level					-	7,000	-	-	-	-	-	-	100,000	100,000	-	100,000	1,100	12,000	1,100	1,100	1,100	-	-	-	-	-	-	-	-
Method C, Carcinogen, Direct Contact (ingestion only), industrial land use					-	-	-	656,000	-	-	-	-	-	-	23,026,316	-				-		-	-	-	119,318	-	9,375,000	69,100,000	-
Method C, Non-carcinogen, Direct Contact (ingestion only), industrial land use					-	-	-	14,000,000	-	-	-	-		-	24,500,000		-	-	-	-	-	14,000,000,000	350,000,000	-	-	-	70,000,000	700,000,000	-
					ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
ZoneB_April2012 (AMEC)	B052-0-3	04/11/12	0	3	-	42.0 U	42.0 U	-	-	-	-	2.2 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B053-0-3	04/11/12	0	3	-	41.4 U	41.4 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B054-0-3	04/11/12	0	3	-	41.8 U	41.8 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B055-0-3	04/11/12	0	3	-	41.2 U	41.2 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B056-0-3	04/11/12	0	3	-	41.9 U	41.9 U	-	-	-	-	2.2 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B057-0-3	04/11/12	0	3	-	41.3 U	41.3 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B058-0-3	04/11/12	0	3	-	41.1 U	41.1 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B059-0-3	04/11/12	0	3	-	41.6 U	41.6 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B060-0-3	04/11/12	0	3	-	40.9 U	40.9 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B060-0-3D	04/11/12	0	3	-	40.9 U	40.9 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B061-0-3	04/11/12	0	3	-	41.3 U	41.3 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B062-0-3	04/11/12	0	3	-	39.8 U	39.8 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B063-0-3	04/11/12	0	3	-	40.6 U	40.6 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B064-0-3	04/11/12	0	3	-	40.8 U	40.8 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B065-0-3	04/11/12	0	3	-	40.7 U	40.7 U	-	-	-	-	2.1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B066-0-3	04/11/12	0	3	-	40.2 U	40.2 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B067-0-3	04/11/12	0	3	-	41.0 U	41.0 U	-	-	-	-	2.2 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B068-0-3	04/11/12	0	3	-	41.9 U	41.9 U	-	-	-	-	2.1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B069-0-3	04/11/12	0	3	-	41.0 U	41.0 U	-	-	-	-	2.1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B070-0-3	04/11/12	0	3	-	40.6 U	40.6 U	-	-	-	-	2.1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B071-0-3	04/11/12	0	3	-	44.1 U	44.1 U	-	-	-	-	2.0 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B072-0-3	04/11/12	0	3	-	40.1 U	40.1 U	-	-	-	-	2.1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B073-0-3	04/11/12	0	3	-	42.8 UJ	42.8 UJ	-	-	-	-	2.2 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B074-0-3	04/11/12	0	3	-	42.5 U	42.5 U	-	-	-	-	2.2 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B075-0-3	04/11/12	0	3	-	42.0 U	42.0 U	-	-	-	-	2.2 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B076-0-3	04/12/12	0	3	-	42.2 U	42.2 U	-	-	-	-	2.2 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B077-0-3	04/12/12	0	3	-	39.3 UJ	39.3 UJ	-	-	-	-	2.0 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B078-0-3	04/12/12	0	3	-	41.4 U	41.4 U	-	-	-	-	2.3 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B079-0-3	04/12/12	0	3	-	39.7 U	39.7 U	-	-	-	-	2.1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B080-0-3	04/12/12	0	3	-	40.9 U	40.9 U	-	-	-	-	2.7 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B080-0-3D	04/12/12	0	3	-	40.9 U	40.9 U	-	-	-	-	2.1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B081-0-3	04/12/12	0	3	-	39.8 U	39.8 U	-	-	-	-	2.0 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B082-0-3	04/12/12	0	3	-	40.4 U	40.4 U	-	-	-	-	2.1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B083-0-3	04/12/12	0	3	-	39.2 U	39.2 U	-	-	-	-	2.1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B084-0-3	04/12/12	0	3	-	42.2 U	42.2 U	-	-	-	-	2.2 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B085-0-3	04/12/12	0	3	-	39.0 U	39.0 U	-	-	-	-	2.1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B086-0-3	04/12/12	0	3	-	40.5 U	40.5 U	-	-	-	-	2.2 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B087-0-3	04/12/12	0	3	-	40.1 UJ	40.1 UJ	-	-	-	-	2.1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B088-0-3	04/12/12	0	3	-	39.2 UJ	39.2 U	-	-	-	-	2.0 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B089-0-3	04/12/12	0	3	-	41.0 U	41.0 U	-	-	-	-	2.1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B090-0-3	04/12/12	0	3	-	40.6 U	40.6 U	-	-	-	-	2.1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B091-0-3	04/12/12	0	3	-	41.6 U	41.6 U	-	-	-	-	2.2 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B092-0-3	04/12/12	0	3	-	40.3 U	40.3 U	-	-	-	-	2.1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B093-0-3	04/12/12	0	3	-	41.7 U	41.7 U	-	-	-	-	2.1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B094-0-3	04/12/12	0	3	-	42.2 U	42.2 U	-	-	-	-	2.1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B095-0-3	04/12/12	0	3	-	41.1 U	41.1 U	-	-	-	-	2.1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B096-0-3	04/12/12	0	3	-	40.9 U	40.9 U	-	-	-	-	2.1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B097-0-3	04/12/12	0	3	-	41.0 U	41.0 U	-	-	-	-	2.1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table O-4
Pasco Landfill Zone B Soil Sample Results
Semi-Volatile Organic Compounds

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	Chrysene	Dibenzo(a,h)anthracene	Dibenzofuran	Diethyl phthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	Dinoseb	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Indeno(1,2,3-cd)pyrene	Isophorone	Naphthalene	Nitrobenzene	N-Nitrosodi-n-propylamine	N-Nitrosodiphenylamine	Pentachlorophenol	Phenanthrene	Phenol	Pyrene	Tetrachlorophenols (2)
Draft Human Health Screening Level					18,000,000	18,000	3,500,000	-	-	-	-	-	140,000,000	140,000,000	-	-	-	-	180,000	-	70,000,000	-	-	-	328,000	-	-	105,000,000	-
Draft Ecological Screening Level					1,100	1,100	-	-	-	-	-	-	1,100	30,000	-	-	-	-	1,100	-	100,000	-	-	-	4,500	100,000	-	1,100	-
Method C, Carcinogen, Direct Contact (ingestion only), industrial land use							-	-	-	-	-	-	-	-	82,031	1,682,692	-	9,375,000		138,157,895	-	-	18,750	26,785,714		-	-	-	-
Method C, Non-carcinogen, Direct Contact (ingestion only), industrial land use					-	-		-	-	-	-	-			2,800,000	3,500,000	21,000,000	3,500,000	-	700,000,000		7,000,000	-	-		-	1,050,000,000		-
					ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
ZoneB_April2012 (AMEC)	B052-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B053-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B054-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B055-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B056-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B057-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B058-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B059-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83.2 U	-	-	-	-
ZoneB_April2012 (AMEC)	B060-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B060-0-3D	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B061-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B062-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79.5 U	-	-	-	-
ZoneB_April2012 (AMEC)	B063-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B064-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.5 U	-	-	-	-
ZoneB_April2012 (AMEC)	B065-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B066-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B067-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B068-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B069-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B070-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.2 U	-	-	-	-
ZoneB_April2012 (AMEC)	B071-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	88.2 U	-	-	-	-
ZoneB_April2012 (AMEC)	B072-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80.2 U	-	-	-	-
ZoneB_April2012 (AMEC)	B073-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85.6 UJ	-	-	-	-
ZoneB_April2012 (AMEC)	B074-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B075-0-3	04/11/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84.0 U	-	-	-	-
ZoneB_April2012 (AMEC)	B076-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B077-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78.6 UJ	-	-	-	-
ZoneB_April2012 (AMEC)	B078-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B079-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79.5 U	-	-	-	-
ZoneB_April2012 (AMEC)	B080-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B080-0-3D	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B081-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79.5 U	-	-	-	-
ZoneB_April2012 (AMEC)	B082-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B083-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B084-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B085-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78.0 U	-	-	-	-
ZoneB_April2012 (AMEC)	B086-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.0 U	-	-	-	-
ZoneB_April2012 (AMEC)	B087-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80.1 UJ	-	-	-	-
ZoneB_April2012 (AMEC)	B088-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78.5 UJ	-	-	-	-
ZoneB_April2012 (AMEC)	B089-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.0 U	-	-	-	-
ZoneB_April2012 (AMEC)	B090-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B091-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B092-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B093-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B094-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B095-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B096-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B097-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9 U	-	-	-	-

Table O-4
Pasco Landfill Zone B Soil Sample Results
Semi-Volatile Organic Compounds

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1-Methylnaphthalene	2,3,4,6-Tetrachlorophenol	2,3,5,6-Tetrachlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dichlorophenol	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylphenol	2-Nitroaniline	2-Nitrophenol	3 & 4-Chlorophenol	3,3´-Dichlorobenzidine	3-,4-Methylphenol	3-Nitroaniline	4,6-Dinitro-2-methylphenol
Draft Human Health Screening Level					-	-	-	-	-	-	-	350,000,000	3,500,000	10,500,000	-	-	-	10,500,000	-	-	17,500,000	-	-	-	-	-	-	-	-
Draft Ecological Screening Level					-	-	-	-	-	-	-	14,100	9,940	87,500	-	-	-	1,170	-	-	243	-	-	-	-	-	-	-	-
Method C, Carcinogen, Direct Contact (ingestion only), industrial land use					4,530,000	-	-	-	-	-	-				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Method C, Non-carcinogen, Direct Contact (ingestion only), industrial land use					35,000,000	315,000,000	-	-	-	-	-				70,000,000	7,000,000	7,000,000	-	3,500,000	-		-	35,000,000	-	-	-	-	-	-
					ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
ZoneB_April2012 (AMEC)	B098-0-3	04/12/12	0	3	-	-	-	-	-	20.9 UJ	20.9 UJ	20.9 UJ	20.9 UJ	20.9 UJ	-	-	-	20.9 UJ	-	-	20.9 UJ	-	-	-	41.9 UJ	-	-	-	-
ZoneB_April2012 (AMEC)	B099-0-3	04/12/12	0	3	-	-	-	-	-	20.4 U	20.4 U	20.4 U	20.4 U	20.4 U	-	-	-	20.4 U	-	-	20.4 U	-	-	-	40.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B100-0-3	04/12/12	0	3	-	-	-	-	-	20.3 U	20.3 U	20.3 U	20.3 U	20.3 U	-	-	-	20.3 U	-	-	20.3 U	-	-	-	40.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B100-0-3D	04/12/12	0	3	-	-	-	-	-	20.3 U	20.3 U	20.3 U	20.3 U	20.3 U	-	-	-	20.3 U	-	-	20.3 U	-	-	-	40.5 U	-	-	-	-
ZoneB_April2012 (AMEC)	B101-0-3	04/12/12	0	3	-	-	-	-	-	20.2 U	20.2 U	20.2 U	20.2 U	20.2 U	-	-	-	20.2 U	-	-	20.2 U	-	-	-	40.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B102-0-3	04/12/12	0	3	-	-	-	-	-	20.8 U	20.8 U	20.8 U	20.8 U	20.8 U	-	-	-	20.8 U	-	-	20.8 U	-	-	-	41.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B103-0-3	04/12/12	0	3	-	-	-	-	-	20.8 U	20.8 U	20.8 U	20.8 U	20.8 U	-	-	-	20.8 U	-	-	20.8 U	-	-	-	41.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B104-0-3	04/12/12	0	3	-	-	-	-	-	20.1 U	20.1 U	20.1 U	20.1 U	20.1 U	-	-	-	20.1 U	-	-	20.1 U	-	-	-	40.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B105-0-3	04/12/12	0	3	-	-	-	-	-	20.4 U	20.4 U	20.4 U	20.4 U	20.4 U	-	-	-	20.4 U	-	-	20.4 U	-	-	-	40.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B106-0-3	04/12/12	0	3	-	-	-	-	-	19.5 U	19.5 U	19.5 U	19.5 U	19.5 U	-	-	-	19.5 U	-	-	19.5 U	-	-	-	38.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B107-0-3	04/12/12	0	3	-	-	-	-	-	20.3 U	20.3 U	20.3 U	20.3 U	20.3 U	-	-	-	20.3 U	-	-	20.3 U	-	-	-	40.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B108-0-3	04/12/12	0	3	-	-	-	-	-	19.6 U	19.6 U	19.6 U	19.6 U	19.6 U	-	-	-	19.6 U	-	-	19.6 U	-	-	-	39.2 U	-	-	-	-
ZoneB_April2012 (AMEC)	B109-0-3	04/12/12	0	3	-	-	-	-	-	19.8 U	19.8 U	19.8 U	19.8 U	19.8 U	-	-	-	19.8 U	-	-	19.8 U	-	-	-	39.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B110-0-3	04/12/12	0	3	-	-	-	-	-	20.5 U	20.5 U	20.5 U	20.5 U	20.5 U	-	-	-	20.5 U	-	-	20.5 U	-	-	-	41.0 U	-	-	-	-
ZoneB_April2012 (AMEC)	B111-0-3	04/12/12	0	3	-	-	-	-	-	20.2 U	20.2 U	20.2 U	20.2 U	20.2 U	-	-	-	20.2 U	-	-	20.2 U	-	-	-	40.5 U	-	-	-	-
ZoneB_April2012 (AMEC)	B112-0-3	04/12/12	0	3	-	-	-	-	-	19.3 U	19.3 U	19.3 U	19.3 U	19.3 U	-	-	-	19.3 U	-	-	19.3 U	-	-	-	38.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B113-0-3	04/12/12	0	3	-	-	-	-	-	20.3 U	20.3 U	20.3 U	20.3 U	20.3 U	-	-	-	20.3 U	-	-	20.3 U	-	-	-	40.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B114-0-3	04/12/12	0	3	-	-	-	-	-	20.4 U	20.4 U	20.4 U	20.4 U	20.4 U	-	-	-	20.4 U	-	-	20.4 U	-	-	-	40.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B115-0-3	04/13/12	0	3	-	-	-	-	-	21.0 U	21.0 U	21.0 U	21.0 U	21.0 U	-	-	-	21.0 U	-	-	21.0 U	-	-	-	41.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B116-0-3	04/13/12	0	3	-	-	-	-	-	20.9 U	20.9 U	20.9 U	20.9 U	20.9 U	-	-	-	20.9 U	-	-	20.9 U	-	-	-	41.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B117-0-3	04/13/12	0	3	-	-	-	-	-	20.6 U	20.6 U	20.6 U	20.6 U	20.6 U	-	-	-	20.6 U	-	-	20.6 U	-	-	-	41.2 U	-	-	-	-
ZoneB_April2012 (AMEC)	B118-0-3	04/13/12	0	3	-	-	-	-	-	20.5 U	20.5 U	20.5 U	20.5 U	20.5 U	-	-	-	20.5 U	-	-	20.5 U	-	-	-	41.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B119-0-3	04/13/12	0	3	-	-	-	-	-	20.7 U	20.7 U	20.7 U	20.7 U	20.7 U	-	-	-	20.7 U	-	-	20.7 U	-	-	-	41.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B120-0-3	04/13/12	0	3	-	-	-	-	-	21.1 U	21.1 U	21.1 U	21.1 U	21.1 U	-	-	-	21.1 U	-	-	21.1 U	-	-	-	42.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B120-0-3D	04/13/12	0	3	-	-	-	-	-	20.4 U	20.4 U	20.4 U	20.4 U	20.4 U	-	-	-	20.4 U	-	-	20.4 U	-	-	-	40.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B121-0-3	04/13/12	0	3	-	-	-	-	-	20.7 U	20.7 U	20.7 U	20.7 U	20.7 U	-	-	-	20.7 U	-	-	20.7 U	-	-	-	41.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B122-0-3	04/13/12	0	3	-	-	-	-	-	20.8 U	20.8 U	20.8 U	20.8 U	20.8 U	-	-	-	20.8 U	-	-	20.8 U	-	-	-	41.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B123-0-3	04/13/12	0	3	-	-	-	-	-	20.8 U	20.8 U	20.8 U	20.8 U	20.8 U	-	-	-	20.8 U	-	-	20.8 U	-	-	-	41.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B124-0-3	04/13/12	0	3	-	-	-	-	-	20.5 UJ	20.5 UJ	20.5 UJ	20.5 UJ	20.5 UJ	-	-	-	20.5 UJ	-	-	20.5 UJ	-	-	-	40.9 UJ	-	-	-	-
ZoneB_April2012 (AMEC)	B125-0-3	04/13/12	0	3	-	-	-	-	-	20.6 U	20.6 U	20.6 U	20.6 U	20.6 U	-	-	-	20.6 U	-	-	20.6 U	-	-	-	41.2 U	-	-	-	-
ZoneB_April2012 (AMEC)	B126-0-3	04/13/12	0	3	-	-	-	-	-	21.2 U	21.2 U	21.2 U	21.2 U	21.2 U	-	-	-	21.2 U	-	-	21.2 U	-	-	-	42.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B127-0-3	04/13/12	0	3	-	-	-	-	-	20.9 UJ	20.9 U	20.9 U	20.9 UJ	20.9 U	-	-	-	20.9 UJ	-	-	20.9 U	-	-	-	41.7 UJ	-	-	-	-
ZoneB_April2012 (AMEC)	B128-0-3	04/13/12	0	3	-	-	-	-	-	20.7 U	20.7 U	20.7 U	20.7 U	20.7 U	-	-	-	20.7 U	-	-	20.7 U	-	-	-	41.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B129-0-3	04/13/12	0	3	-	-	-	-	-	20.6 U	20.6 U	20.6 U	20.6 U	20.6 U	-	-	-	20.6 U	-	-	20.6 U	-	-	-	41.2 U	-	-	-	-
ZoneB_April2012 (AMEC)	B130-0-3	04/13/12	0	3	-	-	-	-	-	20.9 U	20.9 U	20.9 U	20.9 U	20.9 U	-	-	-	20.9 U	-	-	20.9 U	-	-	-	41.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B130-0-3D	04/13/12	0	3	-	-	-	-	-	20.8 U	20.8 U	20.8 U	20.8 U	20.8 U	-	-	-	20.8 U	-	-	20.8 U	-	-	-	41.6 U	-	-	-	-

Table O-4
Pasco Landfill Zone B Soil Sample Results
Semi-Volatile Organic Compounds

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	4-Bromophenyl phenyl ether	4-Chloro-3-methylphenol	4-Chloro-o-cresol	4-Chloroaniline	4-Chlorophenyl phenyl ether	4-Methylphenol	4-Nitroaniline	4-Nitrophenol	Acenaphthene	Acenaphthylene	Aniline	A'-hracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Benzoic Acid	Benzyl alcohol	Bis(2-chloroethoxy)methane	Bis(2-chloroethyl) ether	Bis(2-chloroisopropyl) ether	Bis(2-ethylhexyl)phthalate	Butyl benzyl phthalate	Carbazole
Draft Human Health Screening Level					-	62,000,000	-	-	-	-	-	-	210,000,000	-	-	1,050,000,000	180,000	18,000	180,000	-	1,800,000	-	-	-	-	-	-	-	-
Draft Ecological Screening Level					-	7,000	-	-	-	-	-	-	100,000	100,000	-	100,000	1,100	12,000	1,100	1,100	1,100	-	-	-	-	-	-	-	-
Method C, Carcinogen, Direct Contact (ingestion only), industrial land use					-	-	-	656,000	-	-	-	-	-	-	23,026,316	-				-		-	-	-	119,318	-	9,375,000	69,100,000	-
Method C, Non-carcinogen, Direct Contact (ingestion only), industrial land use					-	-	-	14,000,000	-	-	-	-		-	24,500,000		-	-	-	-	-	14,000,000,000	350,000,000	-	-	-	70,000,000	700,000,000	-
					ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
ZoneB_April2012 (AMEC)	B098-0-3	04/12/12	0	3	-	41.9 UJ	41.9 UJ	-	-	-	-	**6.8 J**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B099-0-3	04/12/12	0	3	-	40.9 U	40.9 U	-	-	-	-	**3.8 J**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B100-0-3	04/12/12	0	3	-	40.6 U	40.6 U	-	-	-	-	2.1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B100-0-3D	04/12/12	0	3	-	40.5 U	40.5 U	-	-	-	-	2.1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B101-0-3	04/12/12	0	3	-	40.4 U	40.4 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B102-0-3	04/12/12	0	3	-	41.6 U	41.6 U	-	-	-	-	2.2 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B103-0-3	04/12/12	0	3	-	41.7 U	41.7 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B104-0-3	04/12/12	0	3	-	40.3 U	40.3 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B105-0-3	04/12/12	0	3	-	40.7 U	40.7 U	-	-	-	-	2.1 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B106-0-3	04/12/12	0	3	-	38.9 U	38.9 U	-	-	-	-	2.0 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B107-0-3	04/12/12	0	3	-	40.6 U	40.6 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B108-0-3	04/12/12	0	3	-	39.2 U	39.2 U	-	-	-	-	2.0 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B109-0-3	04/12/12	0	3	-	39.6 U	39.6 U	-	-	-	-	2.0 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B110-0-3	04/12/12	0	3	-	41.0 U	41.0 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B111-0-3	04/12/12	0	3	-	40.5 U	40.5 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B112-0-3	04/12/12	0	3	-	38.6 U	38.6 U	-	-	-	-	2.0 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B113-0-3	04/12/12	0	3	-	40.6 U	40.6 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B114-0-3	04/12/12	0	3	-	40.9 U	40.9 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B115-0-3	04/13/12	0	3	-	41.9 U	41.9 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B116-0-3	04/13/12	0	3	-	41.8 U	41.8 U	-	-	-	-	2.2 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B117-0-3	04/13/12	0	3	-	41.2 U	41.2 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B118-0-3	04/13/12	0	3	-	41.1 U	41.1 U	-	-	-	-	2.2 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B119-0-3	04/13/12	0	3	-	41.4 U	41.4 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B120-0-3	04/13/12	0	3	-	42.1 U	42.1 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B120-0-3D	04/13/12	0	3	-	40.8 U	40.8 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B121-0-3	04/13/12	0	3	-	41.3 U	41.3 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B122-0-3	04/13/12	0	3	-	41.7 U	41.7 U	-	-	-	-	2.2 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B123-0-3	04/13/12	0	3	-	41.7 U	41.7 U	-	-	-	-	2.2 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B124-0-3	04/13/12	0	3	-	40.9 UJ	40.9 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B125-0-3	04/13/12	0	3	-	41.2 U	41.2 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B126-0-3	04/13/12	0	3	-	42.3 U	42.3 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B127-0-3	04/13/12	0	3	-	41.7 U	41.7 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B128-0-3	04/13/12	0	3	-	41.4 U	41.4 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B129-0-3	04/13/12	0	3	-	41.2 U	41.2 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B130-0-3	04/13/12	0	3	-	41.7 U	41.7 U	-	-	-	-	2.1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZoneB_April2012 (AMEC)	B130-0-3D	04/13/12	0	3	-	41.6 U	41.6 U	-	-	-	-	2.2 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table O-4
Pasco Landfill Zone B Soil Sample Results
Semi-Volatile Organic Compounds

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	Chrysene	Dibenzo(a,h)anthracene	Dibenzofuran	Diethyl phthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	Dinoseb	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Indeno(1,2,3-cd)pyrene	Isophorone	Naphthalene	Nitrobenzene	N-Nitrosodi-n-propylamine	N-Nitrosodiphenylamine	Pentachlorophenol	Phenanthrene	Phenol	Pyrene	Tetrachlorophenols (2)
Draft Human Health Screening Level					18,000,000	18,000	3,500,000	-	-	-	-	-	140,000,000	140,000,000	-	-	-	-	180,000	-	70,000,000	-	-	-	328,000	-	-	105,000,000	-
Draft Ecological Screening Level					1,100	1,100	-	-	-	-	-	-	1,100	30,000	-	-	-	-	1,100	-	100,000	-	-	-	4,500	100,000	-	1,100	-
Method C, Carcinogen, Direct Contact (ingestion only), industrial land use							-	-	-	-	-	-	-	-	82,031	1,682,692	-	9,375,000		138,157,895	-	-	18,750	26,785,714		-	-	-	-
Method C, Non-carcinogen, Direct Contact (ingestion only), industrial land use					-	-		-	-	-	-	-			2,800,000	3,500,000	21,000,000	3,500,000	-	700,000,000		7,000,000	-	-		-	1,050,000,000		-
					ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
ZoneB_April2012 (AMEC)	B098-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83.8 UJ	-	-	-	-
ZoneB_April2012 (AMEC)	B099-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B100-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B100-0-3D	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B101-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B102-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B103-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B104-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B105-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.5 U	-	-	-	-
ZoneB_April2012 (AMEC)	B106-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B107-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B108-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78.5 U	-	-	-	-
ZoneB_April2012 (AMEC)	B109-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79.2 U	-	-	-	-
ZoneB_April2012 (AMEC)	B110-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B111-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.0 U	-	-	-	-
ZoneB_April2012 (AMEC)	B112-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77.2 U	-	-	-	-
ZoneB_April2012 (AMEC)	B113-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.2 U	-	-	-	-
ZoneB_April2012 (AMEC)	B114-0-3	04/12/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B115-0-3	04/13/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83.9 U	-	-	-	-
ZoneB_April2012 (AMEC)	B116-0-3	04/13/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83.5 U	-	-	-	-
ZoneB_April2012 (AMEC)	B117-0-3	04/13/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B118-0-3	04/13/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.1 U	-	-	-	-
ZoneB_April2012 (AMEC)	B119-0-3	04/13/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.8 U	-	-	-	-
ZoneB_April2012 (AMEC)	B120-0-3	04/13/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B120-0-3D	04/13/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B121-0-3	04/13/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B122-0-3	04/13/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B123-0-3	04/13/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83.3 U	-	-	-	-
ZoneB_April2012 (AMEC)	B124-0-3	04/13/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81.8 UJ	-	-	-	-
ZoneB_April2012 (AMEC)	B125-0-3	04/13/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B126-0-3	04/13/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84.6 U	-	-	-	-
ZoneB_April2012 (AMEC)	B127-0-3	04/13/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83.4 U	-	-	-	-
ZoneB_April2012 (AMEC)	B128-0-3	04/13/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.7 U	-	-	-	-
ZoneB_April2012 (AMEC)	B129-0-3	04/13/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.5 U	-	-	-	-
ZoneB_April2012 (AMEC)	B130-0-3	04/13/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83.5 U	-	-	-	-
ZoneB_April2012 (AMEC)	B130-0-3D	04/13/12	0	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83.1 U	-	-	-	-

Notes:

µg/kg = micrograms per kilogram
Bold indicates detected concentration.
- = not tested
Blue highlight indicates that detected concentration exceeds one or more associated screening level(s)
Sample depths are at time of sampling, and do not represent current depths
AMEC = AMEC Earth & Environmental, Inc. (now Amec Foster Wheeler Environment & Infrastructure, Inc.)
Philip Env. Serv. Corp. = Philip Environmental Services Corporation
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = Analyte was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Table O-5
Pasco Landfill Zone B Soil Sample Results
Volatile Organic Compounds

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene
Method C, Carcinogen, Direct Contact (ingestion only), industrial land use					5,048	-	656	2,303	-	-	-	-	4	4,530	-	164	-	-	1,442	-	-
Method C, Non-carcinogen, Direct Contact (ingestion only), industrial land use					105,000	7,000,000	70,000	14,000	700,000	-	-	-	14,000	35,000	-	700	-	315,000	70,000	-	35,000
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-01-302	03/13/02	0.0	0.5	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	**0.630**	2.00 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-02-302	03/13/02	0.0	0.5	0.500 U	0.500 U	0.500 U	**3.63**	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	**0.740**	**1.31**	2.50 U	0.500 U	0.500 U	0.500 U	0.500 U	**0.750**
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-03-302	03/13/02	0.0	0.5	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	**0.176**	0.500 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-04-302	03/13/02	0.0	0.5	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.500 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-05-302	03/13/02	0.0	0.5	0.100 U	0.100 U	0.100 U	**1.05**	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	**3.29**	0.500 U	0.100 U	0.100 U	0.100 U	0.100 U	**2.38**
					0.400 U	0.400 U	0.400 U	**1.14**	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	**3.70**	2.00 U	0.400 U	0.400 U	0.400 U	0.400 U	**2.23**
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-06-302	03/13/02	0.0	0.5	0.100 U	0.100 U	0.100 U	**0.809**	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	**2.12**	0.500 U	0.100 U	0.100 U	0.100 U	0.100 U	**1.20**
					0.400 U	0.400 U	0.400 U	**1.03**	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	**2.54**	2.00 U	0.400 U	0.400 U	0.400 U	0.400 U	**0.886**
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-07-302	03/13/02	0.0	0.5	0.500 U	0.500 U	0.500 U	**3.26**	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	**51.1 E**	2.50 U	0.500 U	0.500 U	0.500 U	0.500 U	**24.8**
					2.00 U	2.00 U	2.00 U	**3.29**	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	**73.2**	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	**25.0**
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-96-302	03/13/02	0.0	0.5	0.500 U	0.500 U	0.500 U	**0.752**	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	**0.974**	2.50 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U

Notes:

mg/kg = milligrams per kilogram
Bold indicates detected concentration.
- = not tested
Blue highlight indicates that detected concentration exceeds one or more associated screening level(s)
Sample depths are at time of sampling, and do not represent current depths
Philip Env. Serv. Corp. = Philip Environmental Services Corporation
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
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E = Analyte concentration exceeds the calibration range of the gas chromatograph/mass spectrometry instrument for that specific analysis.

Table O-5
Pasco Landfill Zone B Soil Sample Results
Volatile Organic Compounds

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone	2-Chlorotoluene	2-Hexanone	4-Chlorotoluene	4-Methyl-2-pentanone	Acetone	Acrolein	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide
Method C, Carcinogen, Direct Contact (ingestion only), industrial land use					-	-	-	-	-	-	-	-	-	-	-	2,386	-	-	2,117	16,614	-	-
Method C, Non-carcinogen, Direct Contact (ingestion only), industrial land use					-	-	-	-	-	70,000	-	-	-	3,150,000	-	14,000	-	-	70,000	70,000	4,900	350,000
Event	**Sample ID**	**Date Sampled**	**Start Depth (ft)**	**End Depth (ft)**	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-01-302	03/13/02	0.0	0.5	0.400 U	0.400 U	0.400 U	0.400 U	4.00 U	0.400 U	4.00 U	0.400 U	4.00 U	4.00 U	4.00 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-02-302	03/13/02	0.0	0.5	0.500 U	0.500 U	0.500 U	0.500 U	5.00 U	0.500 U	5.00 U	0.500 U	5.00 U	**6.36**	5.00 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-03-302	03/13/02	0.0	0.5	0.100 U	0.100 U	0.100 U	0.100 U	1.00 U	0.100 U	1.00 U	0.100 U	1.00 U	**1.82**	1.00 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-04-302	03/13/02	0.0	0.5	0.100 U	0.100 U	0.100 U	0.100 U	1.00 U	0.100 U	1.00 U	0.100 U	1.00 U	1.00 U	1.00 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-05-302	03/13/02	0.0	0.5	0.100 U	0.100 U	0.100 U	0.100 U	1.00 U	0.100 U	1.00 U	0.100 U	1.00 U	**6.36**	1.00 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U
					0.400 U	0.400 U	0.400 U	0.400 U	4.00 U	0.400 U	4.00 U	0.400 U	4.00 U	**6.84**	4.00 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-06-302	03/13/02	0.0	0.5	0.100 U	0.100 U	0.100 U	0.100 U	1.00 U	0.100 U	1.00 U	0.100 U	1.00 U	**4.28**	1.00 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U
					0.400 U	0.400 U	0.400 U	0.400 U	4.00 U	0.400 U	4.00 U	0.400 U	4.00 U	**6.20**	4.00 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-07-302	03/13/02	0.0	0.5	0.500 U	0.500 U	0.500 U	0.500 U	5.00 U	0.500 U	5.00 U	0.500 U	5.00 U	**17.6**	5.00 U	**0.920**	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
					2.00 U	2.00 U	2.00 U	2.00 U	20.0 U	2.00 U	20.0 U	2.00 U	20.0 U	**25.2**	20.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-96-302	03/13/02	0.0	0.5	0.500 U	0.500 U	0.500 U	0.500 U	5.00 U	0.500 U	5.00 U	0.500 U	5.00 U	**5.36**	5.00 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U

Notes:

mg/kg = milligrams per kilogram

Bold indicates detected concentration.

\- = not tested

Blue highlight indicates that detected concentration exceeds one or more associated screening level(s)

Sample depths are at time of sampling, and do not represent current depths

Philip Env. Serv. Corp. = Philip Environmental Services Corporation

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U = Analyte was not detected above the reported sample quantitation limit.

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

E = Analyte concentration exceeds the calibration range of the gas chromatograph/mass spectrometry instrument for that specific analysis.

Table O-5
Pasco Landfill Zone B Soil Sample Results
Volatile Organic Compounds

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane	Ethylbenzene	Hexachlorobutadiene	Iodomethane	Isopropylbenzene	m,p-Xylene	Methylene Chloride	Naphthalene	n-Butylbenzene
Method C, Carcinogen, Direct Contact (ingestion only), industrial land use					1,880	-	-	-	-	-	-	1,563	-	-	-	1,683	-	-	-	17,500	-	-
Method C, Non-carcinogen, Direct Contact (ingestion only), industrial land use					14,000	70,000	-	35,000	-	-	-	70,000	35,000	700,000	350,000	3,500	-	350,000	700,000	210,000	70,000	-
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-01-302	03/13/02	0.0	0.5	0.400 U	0.400 U	0.400 U	0.400 U	2.00 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	4.00 U	0.400 U	**0.934**	4.00 U	**0.446**	0.400 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-02-302	03/13/02	0.0	0.5	0.500 U	0.500 U	0.500 U	0.500 U	2.50 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	**1.60**	0.500 U	5.00 U	0.500 U	**5.93**	5.00 U	**2.26**	0.500 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-03-302	03/13/02	0.0	0.5	0.100 U	0.100 U	0.100 U	0.100 U	0.500 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	1.00 U	0.100 U	**0.205**	1.00 U	**0.250**	0.100 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-04-302	03/13/02	0.0	0.5	0.100 U	0.100 U	0.100 U	0.100 U	0.500 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	1.00 U	0.100 U	0.200 U	1.00 U	0.100 U	0.100 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-05-302	03/13/02	0.0	0.5	0.100 U	0.100 U	0.100 U	0.100 U	0.500 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	**2.54**	0.100 U	1.00 U	**0.464**	**8.39**	**2.21**	**0.463**	**0.155**
					0.400 U	0.400 U	0.400 U	0.400 U	2.00 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	**3.02**	0.400 U	4.00 U	**0.512**	**11.6**	4.00 U	**0.540**	0.400 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-06-302	03/13/02	0.0	0.5	0.100 U	0.100 U	0.100 U	0.100 U	0.500 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	**2.55**	0.100 U	1.00 U	**0.340**	**8.58**	**1.28**	**1.13**	**0.320**
					0.400 U	0.400 U	0.400 U	0.400 U	2.00 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	**3.06**	0.400 U	4.00 U	**0.404**	**11.7**	4.00 U	**0.908**	0.400 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-07-302	03/13/02	0.0	0.5	0.500 U	0.500 U	0.500 U	0.500 U	2.50 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	**41.5 E**	0.500 U	5.00 U	**17.1**	**97.7 E**	**6.14**	**10.6**	**4.68**
					2.00 U	2.00 U	2.00 U	2.00 U	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	**50.3**	2.00 U	20.0 U	**17.7**	**161**	20.0 U	**9.95**	**4.45**
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-96-302	03/13/02	0.0	0.5	0.500 U	0.500 U	0.500 U	0.500 U	2.50 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	**1.83**	0.500 U	5.00 U	0.500 U	**6.54**	5.00 U	**1.51**	0.500 U

Notes:

mg/kg = milligrams per kilogram

Bold indicates detected concentration.

\- = not tested

Blue highlight indicates that detected concentration exceeds one or more associated screening level(s)

Sample depths are at time of sampling, and do not represent current depths

Philip Env. Serv. Corp. = Philip Environmental Services Corporation

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

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E = Analyte concentration exceeds the calibration range of the gas chromatograph/mass spectrometry instrument for that specific analysis.

Table O-5
Pasco Landfill Zone B Soil Sample Results
Volatile Organic Compounds

Event	Sample ID	Date Sampled	Start Depth (ft)	End Depth (ft)	n-Propylbenzene	o-Xylene	p-Isopropyltoluene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane	Vinyl Acetate	Vinyl Chloride
Method C, Carcinogen, Direct Contact (ingestion only), industrial land use					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Method C, Non-carcinogen, Direct Contact (ingestion only), industrial land use					350,000	700,000	-	-	700,000	-	35,000	280,000	-	-	-	-	-	-	10,500
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-01-302	03/13/02	0.0	0.5	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	**1.07**	**3.03**	0.400 U	0.400 U	4.00 U	0.400 U	0.400 U	4.00 U	0.400 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-02-302	03/13/02	0.0	0.5	0.500 U	**1.47**	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	**16.3**	0.500 U	0.500 U	5.00 U	0.500 U	0.500 U	5.00 U	0.500 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-03-302	03/13/02	0.0	0.5	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	1.00 U	0.100 U	0.100 U	1.00 U	0.100 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-04-302	03/13/02	0.0	0.5	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	1.00 U	0.100 U	0.100 U	1.00 U	0.100 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-05-302	03/13/02	0.0	0.5	**1.11**	**2.56**	**0.413**	0.100 U	0.100 U	0.100 U	**0.212**	**10.0 E**	0.100 U	0.100 U	1.00 U	0.100 U	0.100 U	1.00 U	0.100 U
					1.33	**3.03**	**0.462**	0.400 U	0.400 U	0.400 U	0.400 U	**13.7**	0.400 U	0.400 U	4.00 U	0.400 U	0.400 U	4.00 U	0.400 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-06-302	03/13/02	0.0	0.5	**0.523**	**2.64**	**0.246**	**0.186**	0.100 U	0.100 U	0.100 U	**9.29**	0.100 U	0.100 U	1.00 U	0.100 U	0.100 U	1.00 U	0.100 U
					0.646	**3.06**	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	**13.6 E**	0.400 U	0.400 U	4.00 U	0.400 U	0.400 U	4.00 U	0.400 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-07-302	03/13/02	0.0	0.5	**18.6**	**39.6 E**	**5.28**	**8.59**	0.500 U	0.500 U	0.500 U	**54.3 E**	0.500 U	0.500 U	5.00 U	0.500 U	0.500 U	5.00 U	0.500 U
					23.0	**49.2**	**5.89**	**9.44**	2.00 U	2.00 U	2.00 U	**72.7**	2.00 U	2.00 U	20.0 U	2.00 U	2.00 U	20.0 U	2.00 U
Post Drum Removal (Philip Env. Serv. Corp.)	PLF-ZBR-96-302	03/13/02	0.0	0.5	0.500 U	**1.72**	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	**11.0 E**	0.500 U	0.500 U	5.00 U	0.500 U	0.500 U	5.00 U	0.500 U

Notes:

mg/kg = milligrams per kilogram

Bold indicates detected concentration.

- = not tested

Blue highlight indicates that detected concentration exceeds one or more associated screening level(s)

Sample depths are at time of sampling, and do not represent current depths

Philip Env. Serv. Corp. = Philip Environmental Services Corporation

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U = Analyte was not detected above the reported sample quantitation limit.

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

E = Analyte concentration exceeds the calibration range of the gas chromatograph/mass spectrometry instrument for that specific analysis.

Table O-6
Pasco Landfill Zone B Groundwater Sample Results
Herbicides

Location	Date	Sample ID	Method	2,2-Dichloropropionic acid (Dalapon)	2,4,5-T (2,4,5-Trichlorophenoxy-acetic acid)	2,4,5-TP (Silvex)	2,4-D (2,4-Dichlorophenoxy-acetic acid)	2,4-DB (2,4-D derivative)	2-Methyl-4-chlorophenoxy gamma-butyric acid (MCPB)	Dicamba	Dichloroprop	Dinoseb	Mecoprop (MCPP)	Mephanac (MCPA)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-25S	05/31/95	PLF-MW25S-0695	SW8150	0.046 U	0.024 U	0.031 U	0.019 U	0.027 U	-	0.015 U	0.024 U	0.033 U	0.031 U	0.034 U
	09/22/95	PLF-MW25S-0995	SW8150	0.05 U	0.027 U	0.033 U	0.021 U	0.029 U	-	0.016 U	0.026 U	0.036 U	0.033 U	0.037 U
	12/05/95	PLF-MW25S-1295	SW8150	0.046 U	0.054 U	0.035 U	0.043 U	0.03 U	-	0.048 U	0.04 U	0.049 U	0.058 U	0.063 U
	03/23/96	PLF-MW25S-0396	SW8150	0.046 U	0.054 U	0.035 U	0.043 U	0.03 U	-	0.048 U	0.04 U	0.049 U	0.058 U	0.063 U
	07/26/96	PLF-MW25S-0796	SW8150	0.4 U	0.3 U	0.2 U	0.6 U	0.6 U	-	0.2 U	0.3 U	2 U	3 U	2 U
	09/18/96	PLF-MW25S-0996	SW8150	0.4 U	0.3 U	0.2 U	0.6 U	0.6 U	-	0.2 U	0.3 U	2 U	3 U	2 U
	12/05/96	PLF-MW25S-1296	SW8150	0.4 U	0.3 U	0.2 U	0.6 U	0.6 U	-	0.2 U	0.3 U	2 U	3 U	2 U
	02/28/97	PLF-MW25S-0297	SW8150	0.4 U	0.3 U	0.2 U	0.6 U	0.6 U	-	0.2 U	0.3 U	2 U	3 U	2 U
	06/20/97	PLF-MW25S-0697	SW8150	0.4 U	-	0.2 U	-	0.6 U	-	0.2 U	0.3 U	2 U	3 U	2 U
	09/26/97	PLF-MW25S-0997	SW8150	0.4 U	0.3 U	0.2 U	0.6 U	0.6 U	-	0.2 U	0.3 U	2 U	3 U	2 U
	12/05/97	PLF-MW25S-1297	SW8150	0.4 U	0.3 U	0.2 U	0.6 U	0.6 U	-	0.2 U	0.3 U	2 U	3 U	2 U
	03/06/98	PLF-MW25S-0398	SW8150	0.4 U	0.3 U	0.2 U	0.6 U	0.6 U	-	0.2 U	0.3 U	2 U	3 U	2 U
	06/08/98	PLF-MW25S-0698	SW8150	1.5 U	1 U	1 U	0.5 U	1 U	-	0.5 U	1 U	1 U	50 U	50 U
	09/11/98	PLF-MW25S-0998	SW8150	1.5 U	1 U	1 U	0.5 U	1 U	-	0.5 U	1 U	1 U	50 U	50 U
	12/09/98	PLF-MW25S-1298	SW8150	1.5 U	1 U	1 U	0.5 U	1 U	-	0.5 U	1 U	1 U	50 U	50 U
	03/12/99	PLF-MW25S-0399	SW8150	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	1 U	50 U	60 U
	06/11/99	PLF-MW25S-0699	SW8150	6.7 U	0.563 U	0.622 U	0.773 U	2.56 U	-	0.779 U	0.584 U	1.53 U	38.8 U	59.7 U
	09/17/99	PLF-MW25S-0999	SW8150	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	50 U	60 U
	12/17/99	PLF-MW25S-1299	SW8150	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	50 U	60 U
	03/10/00	PLF-MW25S-0300	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	50 U	60 U
	06/15/00	PLF-MW25S-0600	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	50 U	60 U
	09/11/00	PLF-MW25S-0900	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	50 U	60 U
	11/17/00	PLF-MW25S-1100	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	06/08/01	PLF-MW25S-0601	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	09/12/01	PLF-MW25S-0901	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	12/14/01	PLF-MW25S-1201	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	03/28/02	PLF-MW25S-0302	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	06/13/02	PLF-MW25S-0602	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	09/12/02	PLF-MW25S-0902	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	12/17/02	PLF-MW-25S-1202	SW8151	10 UJ	1 UJ	1 UJ	1 UJ	4 UJ	-	1 UJ	1 UJ	2 UJ	200 UJ	200 UJ
	01/23/03	PLF-MW25S-0103	SW8151A	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 UJ	200 UJ
	04/03/03	PLF-MW25S-0403	SW8151A	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 UJ
	07/25/03	PLF-MW25S-0703	SW8151A	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	10/10/03	PLF-MW25S-1003	SW8151A	10 UJ	1 UJ	1 UJ	1 UJ	4 UJ	-	1 UJ	1 UJ	2 UJ	200 UJ	200 UJ
	01/28/04	PLF-MW25S-0104	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
		0104_FDUP	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	04/21/04	PLF-MW25S-0404	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	07/13/04	PLF-MW25S-0704	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	10/13/04	PLF-MW25S-1004	SW8151	10 UJ	1 UJ	1 UJ	1 UJ	4 UJ	-	1 UJ	1 UJ	2 UJ	200 UJ	200 UJ
	01/27/05	PLF-MW25S-0105	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	04/21/05	PLF-MW25S-0405	SW8151	10 U	1 U	1 U	1 UJ	4 U	-	1 U	1 U	2 U	200 U	200 U
	07/13/05	PLF-MW25S-0705	SW8151	10 U	1 U	1 UJ	1 U	4 U	-	1 U	1 U	2 UJ	200 U	200 U
	10/12/05	PLF-MW25S-1005	SW8151	10 U	1 U	1 U	1 UJ	4 U	-	1 UJ	1 U	2 U	200 U	200 U
	01/11/06	PLF-MW25S-0106	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	04/12/06	PLF-MW25S-0406	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 UJ	200 U	200 U
	07/12/06	PLF-MW25S-0706	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 UJ	200 U	500 U
	10/17/06	PLF-MW25S-1006	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 UJ	200 U	200 U
	01/10/07	PLF-MW25S-0107	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U

Table O-6
Pasco Landfill Zone B Groundwater Sample Results
Herbicides

Location	Date	Sample ID	Method	2,2-Dichloropropionic acid (Dalapon)	2,4,5-T (2,4,5-Trichlorophenoxy-acetic acid)	2,4,5-TP (Silvex)	2,4-D (2,4-Dichlorophenoxy-acetic acid)	2,4-DB (2,4-D derivative)	2-Methyl-4-chlorophenoxy gamma-butyric acid (MCPB)	Dicamba	Dichloroprop	Dinoseb	Mecoprop (MCPP)	Mephanac (MCPA)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26S	06/03/95	PLF-MW26S-0695	SW8150	0.049 U	0.026 U	0.032 U	0.021 U	0.028 U	-	0.016 U	0.025 U	0.035 U	0.032 U	0.036 U
	09/22/95	PLF-MW26S-0995	SW8150	0.051 U	0.027 U	0.033 U	0.021 U	0.029 U	-	0.016 U	0.026 U	0.036 U	0.033 U	0.037 U
	12/05/95	PLF-MW26S-1295	SW8150	0.046 U	0.054 U	0.035 U	0.043 U	0.03 U	-	0.048 U	0.04 U	0.049 U	0.058 U	0.063 U
	03/23/96	PLF-MW26S-0396	SW8150	0.046 U	0.054 U	0.035 U	0.043 U	0.03 U	-	0.048 U	0.04 U	0.049 U	0.058 U	0.063 U
	07/26/96	PLF-MW26S-0796	SW8150	0.4 U	0.3 U	0.2 U	0.6 U	0.6 U	-	0.2 U	0.3 U	2 U	3 U	2 U
		0796_FDUP	SW8150	0.4 U	0.3 U	0.2 U	0.6 U	0.6 U	-	0.2 U	0.3 U	2 U	3 U	2 U
	09/18/96	PLF-MW26S-0996	SW8150	0.4 U	0.3 U	0.2 U	0.6 U	0.6 U	-	0.2 U	0.3 U	2 U	3 U	2 U
		0996_FDUP	SW8150	0.4 U	0.3 U	0.2 U	0.6 U	0.6 U	-	0.2 U	0.3 U	2 U	3 U	2 U
	12/05/96	PLF-MW26S-1296	SW8150	0.4 U	0.3 U	0.2 U	0.6 U	0.6 U	-	0.2 U	0.3 U	2 U	3 U	2 U
		1296_FDUP	SW8150	0.4 U	0.3 U	0.2 U	0.6 U	0.6 U	-	0.2 U	0.3 U	2 U	3 U	2 U
	02/28/97	PLF-MW26S-0297	SW8150	0.4 U	0.3 U	0.2 U	0.6 U	0.6 U	-	0.2 U	0.3 U	2 U	3 U	2 U
		0297_FDUP	SW8150	0.4 U	0.3 U	0.2 U	0.6 U	0.6 U	-	0.2 U	0.3 U	2 U	3 U	2 U
	06/20/97	PLF-MW26S-0697	SW8150	0.4 U	-	-	-	0.6 U	-	0.2 U	0.3 U	R	3 U	2 U
	09/26/97	PLF-MW26S-0997	SW8150	0.4 U	0.3 U	0.2 U	0.6 U	0.6 U	-	0.2 U	0.3 U	2 U	3 U	2 U
		0997_FDUP	SW8150	0.4 U	0.3 U	0.2 U	0.6 U	0.6 U	-	0.2 U	0.3 U	2 U	3 U	2 U
	12/05/97	PLF-MW26S-1297	SW8150	0.4 U	0.3 U	0.2 U	0.6 U	0.6 U	-	0.2 U	0.3 U	2 U	3 U	2 U
	03/06/98	PLF-MW26S-0398	SW8150	0.4 U	0.3 U	0.2 U	0.6 U	0.6 U	-	0.2 U	0.3 U	2 U	3 U	2 U
		0398_FDUP	SW8150	0.4 U	0.3 U	0.2 U	0.6 U	0.6 U	-	0.2 U	0.3 U	2 U	3 U	2 U
	06/08/98	PLF-MW26S-0698	SW8150	1.5 U	1 U	1 U	0.5 U	1 U	-	0.5 U	1 U	1 U	50 U	50 U
		0698_FDUP	SW8150	1.5 U	1 U	1 U	0.5 U	1 U	-	0.5 U	1 U	1 U	50 U	50 U
	09/11/98	PLF-MW26S-0998	SW8150	1.5 U	1 U	1 U	0.5 U	1 U	-	0.5 U	1 U	1 U	50 U	50 U
		0998_FDUP	SW8150	1.5 U	1 U	1 U	0.5 U	1 U	-	0.5 U	1 U	1 U	50 U	50 U
	12/09/98	PLF-MW26S-1298	SW8150	1.5 U	1 U	1 U	0.5 U	1 U	-	0.5 U	1 U	1 U	50 U	50 U
		1298_FDUP	SW8150	1.5 U	1 U	1 U	0.5 U	1 U	-	0.5 U	1 U	1 U	50 U	50 U
	03/12/99	PLF-MW26S-0399	SW8150	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	50 U	60 U
		0399_FDUP	SW8150	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	50 U	60 U
	06/11/99	PLF-MW26S-0699	SW8150	6.7 U	0.563 U	0.622 U	0.773 U	2.56 U	-	0.779 U	0.584 U	1.53 U	38.8 U	59.7 U
		0699_FDUP	SW8150	6.7 U	0.563 U	0.622 U	0.773 U	2.56 U	-	0.779 U	0.584 U	1.53 U	38.8 U	59.7 U
	09/17/99	PLF-MW26S-0999	SW8150	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	50 U	60 U
	12/17/99	PLF-MW26S-1299	SW8150	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	50 U	60 U
	03/10/00	PLF-MW26S-0300	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	50 U	60 U
		0300_FDUP	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	50 U	60 U
	06/15/00	PLF-MW26S-0600	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	50 U	60 U
		0600_FDUP	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	50 U	60 U
	09/11/00	PLF-MW26S-0900	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	50 U	60 U
		0900_FDUP	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	50 U	60 U
	11/17/00	PLF-MW26S-1200	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
		1200_FDUP	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	03/16/01	PLF-MW26S-0301	SW8150	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	06/08/01	PLF-MW26S-0601	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
		0601_FDUP	SW8151A	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	09/12/01	PLF-MW26S-0901	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
		0901_FDUP	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	12/14/01	PLF-MW26S-1201	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
		1201_FDUP	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	03/28/02	PLF-MW26S-0302	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
		0302_FDUP	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	06/13/02	PLF-MW26S-0602	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U

Table O-6
Pasco Landfill Zone B Groundwater Sample Results
Herbicides

Location	Date	Sample ID	Method	2,2-Dichloropropionic acid (Dalapon)	2,4,5-T (2,4,5-Trichlorophenoxy-acetic acid)	2,4,5-TP (Silvex)	2,4-D (2,4-Dichlorophenoxy-acetic acid)	2,4-DB (2,4-D derivative)	2-Methyl-4-chlorophenoxy gamma-butyric acid (MCPB)	Dicamba	Dichloroprop	Dinoseb	Mecoprop (MCPP)	Mephanac (MCPA)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26S (cont.)		0602_FDUP	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	09/12/02	PLF-MW26S-0902	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
		0902_FDUP	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	12/17/02	PLF-MW-26S-1202	SW8151	10 UJ	1 UJ	1 UJ	1 UJ	4 UJ	-	1 UJ	1 UJ	2 UJ	200 UJ	200 UJ
		1202_FDUP	SW8151	10 UJ	1 UJ	1 UJ	1 UJ	4 UJ	-	1 UJ	1 UJ	2 UJ	200 UJ	200 UJ
	01/23/03	PLF-MW26S-0103	SW8151A	10 U	1 U	1 U	1 UJ	4 U	-	1 U	1 U	2 U	200 U	200 UJ
		0103_FDUP	SW8151A	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 UJ	200 UJ
	04/02/03	PLF-MW26S-0403	SW8151A	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 UJ
		0403_FDUP	SW8151A	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 UJ
	07/25/03	PLF-MW26S-0703	SW8151A	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
		0703_FDUP	SW8151A	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	10/10/03	PLF-MW26S-1003	SW8151A	10 UJ	1 UJ	1 UJ	1 UJ	4 UJ	-	1 UJ	1 UJ	2 UJ	200 UJ	200 UJ
		1003_FDUP	SW8151A	10 UJ	1 UJ	1 UJ	1 UJ	4 UJ	-	1 UJ	1 UJ	2 UJ	200 UJ	200 UJ
	01/28/04	PLF-MW26S-0104	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	04/21/04	PLF-MW26S-0404	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
		0404_FDUP	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	07/13/04	PLF-MW26S-0704	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	07/14/04	0704_FDUP	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	10/13/04	PLF-MW26S-1004	SW8151	10 UJ	1 UJ	1 UJ	1 UJ	4 UJ	-	1 UJ	1 UJ	2 UJ	200 UJ	200 UJ
		1004_FDUP	SW8151	10 UJ	1 UJ	1 UJ	1 UJ	4 UJ	-	1 UJ	1 UJ	2 UJ	200 UJ	200 UJ
	01/27/05	PLF-MW26S-0105	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
		0105_FDUP	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	04/21/05	PLF-MW26S-0405	SW8151	10 U	1 U	1 U	1 UJ	4 U	-	1 U	1 U	2 U	200 U	200 U
		0205_FDUP	SW8151	10 U	1 U	1 U	1 UJ	4 U	-	1 U	1 U	2 U	200 U	200 U
	07/13/05	PLF-MW26S-0705	SW8151	10 U	1 U	1 UJ	1 U	4 U	-	1 U	1 U	2 UJ	200 U	200 U
		0705_FDUP	SW8151	10 U	1 U	1 UJ	1 U	4 U	-	1 U	1 U	2 UJ	200 U	200 U
	10/12/05	PLF-MW26S-1005	SW8151	10 U	1 U	1 U	1 UJ	4 U	-	1 UJ	1 U	2 U	200 U	200 U
		1005_FDUP	SW8151	10 U	1 U	1 U	1 UJ	4 U	-	1 UJ	1 U	2 U	200 U	200 U
	01/11/06	PLF-MW26S-0106	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
		0106_FDUP	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	04/12/06	PLF-MW26S-0406	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 UJ	200 U	200 U
		0406_FDUP	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 UJ	200 U	200 U
			SW8151A	0.48 U	0.24 U	0.24 U	0.24 U	0.24 U	-	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
	07/12/06	PLF-MW26S-0706	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 UJ	200 U	500 U
		0706_FDUP	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 UJ	200 U	500 U
			SW8151A	0.38 U	0.24 U	0.24 U	0.24 U	0.24 U	-	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
	10/17/06	PLF-MW26S-1006	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 UJ	200 U	200 U
		1006_FDUP	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 UJ	200 U	200 U
	01/10/07	PLF-MW26S-0107	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
		0107_FDUP	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	04/19/07	PLF-MW26S-0407	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
		0407_FDUP	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	07/11/07	PLF-MW26S-0707	SW8151	0.2 U	0.05 U	0.05 U	0.2 U	1 U	-	0.1 U	0.2 U	0.05 U	50 U	50 U
		0707_FDUP	SW8151	0.2 U	0.05 U	0.05 U	0.2 U	1 U	-	0.1 U	0.2 U	0.05 U	50 U	50 U
	10/24/07	PLF-MW26S-1007	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
		1007_FDUP	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	01/16/08	PLF-MW26S-0108	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 UJ
		0108_FDUP	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 UJ

Table O-6
Pasco Landfill Zone B Groundwater Sample Results
Herbicides

Location	Date	Sample ID	Method	2,2-Dichloropropionic acid (Dalapon)	2,4,5-T (2,4,5-Trichlorophenoxy-acetic acid)	2,4,5-TP (Silvex)	2,4-D (2,4-Dichlorophenoxy-acetic acid)	2,4-DB (2,4-D derivative)	2-Methyl-4-chlorophenoxy gamma-butyric acid (MCPB)	Dicamba	Dichloroprop	Dinoseb	Mecoprop (MCPP)	Mephanac (MCPA)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26S	04/23/08	PLF-MW26S-0408	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
(cont.)		0408_FDUP	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 U
	07/16/08	PLF-MW26S-0708	SW8151	0.2 U	0.05 U	0.05 U	0.2 U	1 U	-	0.1 U	0.2 U	0.1 U	50 U	50 U
		0708_FDUP	SW8151	0.2 U	0.05 U	0.05 U	0.2 U	1 U	-	0.1 U	0.2 U	0.1 U	50 U	50 U
	10/23/08	1008_FDUP	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 UJ
		PLF-MW26S-1008	SW8151	10 U	1 U	1 U	1 U	4 U	-	1 U	1 U	2 U	200 U	200 UJ
	01/28/09	PLF-MW26S-0109	SW8151	1 U	0.25 U	0.25 U	1 U	5 U	-	0.5 U	1 U	0.5 U	250 U	250 U
		0109_FDUP	SW8151	1 U	0.25 U	0.25 U	1 U	5 U	-	0.5 U	1 U	0.5 U	250 U	250 U
	04/23/09	PLF-MW26S-0409	SW8151	1 U	0.25 U	0.25 U	1 U	5 U	-	0.5 U	1 U	0.5 U	250 U	250 U
		0409_FDUP	SW8151	1 U	0.25 U	0.25 U	1 U	5 U	-	0.5 U	1 U	0.5 U	250 U	250 U
	07/30/09	PLF-MW26S-0709	SW8151	0.5 U	0.12 U	0.12 U	0.5 U	2.5 U	-	0.25 U	0.5 U	0.25 U	120 U	120 U
		0709_FDUP	SW8151	0.5 U	0.12 U	0.12 U	0.5 U	2.5 U	-	0.25 U	0.5 U	0.25 U	120 U	120 U
	10/21/09	1009_FDUP	SW8151	1 U	0.25 U	0.25 U	1 U	5 U	-	0.5 U	1 U	0.5 U	250 U	250 U
		PLF-MW26S-1009	SW8151	1 U	0.25 U	0.25 U	1 U	5 U	-	0.5 U	1 U	0.5 U	250 U	250 U
	01/27/10	PLF-MW26S-0110	SW8151A	0.47 U	0.24 U	0.24 U	0.24 U	0.24 U	-	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
		0110_FDUP	SW8151	0.48 U	0.24 U	0.24 U	0.24 U	0.24 U	-	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
	04/21/10	PLF-MW26S-0410	SW8151A	0.48 U	0.24 U	0.24 U	0.24 U	0.24 U	-	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
	07/14/10	PLF-MW26S-0710	SW8151A	0.38 U	0.24 U	0.24 U	0.24 U	0.24 U	-	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
	10/13/10	PLF-MW26S-1010	SW8151A	0.38 U	0.24 U	0.24 U	0.24 U	0.24 U	-	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
		1010_FDUP	SW8151A	0.38 U	0.24 U	0.24 U	0.24 U	0.24 U	-	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
	01/12/11	PLF-MW26S-0111	SW8151A	0.38 U	0.24 U	0.24 U	0.24 U	0.24 U	-	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
		0111_FDUP	SW8151A	0.38 U	0.24 U	0.24 U	0.24 U	0.24 U	-	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
	04/20/11	PLF-MW926S-0411	SW8151A	0.038 U	0.024 U	0.024 U	0.024 U	0.024 U	-	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U
		0411_FDUP	SW8151A	0.038 U	0.024 U	0.024 U	0.024 U	0.024 U	-	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U
	07/27/11	PLF-MW26S-0711	SW8151A	0.38 U	0.24 U	0.24 U	0.24 U	0.24 U	-	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
		0711_FDUP	SW8151A	0.38 U	0.24 U	0.24 U	0.24 U	0.24 U	-	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
	10/26/11	PLF-MW26S-1011	SW8151A	0.4 U	0.25 U	0.25 U	0.25 U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
		1011_FDUP	SW8151A	0.38 U	0.24 U	0.24 U	0.24 U	0.24 U	-	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
	01/26/12	PLF-MW26S-0112	SW8151A	R	R	R	R	R	-	R	R	R	R	R
	04/26/12	PLF-MW26S-0412	SW8151A	0.038 U	0.024 U	0.024 U	0.024 U	0.024 U	-	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U
	07/24/12	PLF-MW26S-0712	SW8151A	0.038 U	0.024 U	0.024 U	0.024 U	0.024 U	-	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U
	07/24/12	0712_FDUP	SW8151A	0.038 U	0.024 U	0.024 U	0.024 U	0.024 U	-	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U
	01/30/13	PLF-MW26S-0113	SW8321B	-	0.04 U	0.04 UJ	0.04 U	0.04 U	-	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
		PLF-MW926S-0113	SW8321B	-	0.04 U	0.04 UJ	0.04 U	0.04 U	-	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
	04/16/13	PLF-MW26S-0413	SW8321B	-	0.04 U	0.04 U	0.04 U	0.04 U	-	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
	01/23/14	0114	SW8321B	-	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
MW-26SR	07/24/13	PLF-MW26S-0713	SW8321B	-	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ	-	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ
		0713	SW8321B	-	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ	-	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ
	01/23/14	0114	SW8151A	-	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
	04/22/14	0414	SW8151	-	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ	-	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ
	07/22/14	PLF-DUP3-0714	SW8151	-	0.04 U	0.04 U	0.04 U	0.04 U	-	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
		0714	SW8151A	-	0.04 U	0.04 U	0.04 U	0.04 U	-	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
	10/21/14	1014	SW8151A	-	0.04 U	0.04 U	0.04 U	0.04 U	-	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
	01/21/15	PLF-DUP3-0115	SW8151A	-	0.04 U	0.04 U	0.04 U	0.04 U	-	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
		0115	SW8151A	-	0.04 U	0.04 U	0.04 U	0.04 U	-	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
	04/21/15	0415	SW8151A	-	0.04 U	0.04 U	0.04 U	0.04 U	-	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
	07/16/15	0715	SW8151A	-	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ	-	0.04 UJ	-	0.04 UJ	0.04 UJ	0.04 UJ
	07/16/15	PLF-DUP3-0715	SW8151A	-	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ	-	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ

Table O-6
Pasco Landfill Zone B Groundwater Sample Results
Herbicides

Location	Date	Sample ID	Method	2,2-Dichloropropionic acid (Dalapon)	2,4,5-T (2,4,5-Trichlorophenoxy-acetic acid)	2,4,5-TP (Silvex)	2,4-D (2,4-Dichlorophenoxy-acetic acid)	2,4-DB (2,4-D derivative)	2-Methyl-4-chlorophenoxy gamma-butyric acid (MCPB)	Dicamba	Dichloroprop	Dinoseb	Mecoprop (MCPP)	Mephanac (MCPA)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26SR (cont.)	10/27/15	1015	SW8151A	-	0.04 U	0.04 U	0.04 U	0.04 U	-	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
	01/28/16	PLF-DUP3-0116	SW8151A	-	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ	-	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ
		0116	SW8151A	-	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ	-	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ
	04/27/16	0416	SW8151A	-	0.04 U	0.04 U	0.04 U	0.04 U	-	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
	07/19/16	PLF-DUP3-0716	SW8151A	-	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ	-	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ
		0716	SW8151A	-	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ	-	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ
	10/20/16	1016	SW8151A	-	0.04 U	0.04 U	0.04 U	0.04 U	-	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
EE-4	02/12/93	PLF-GW-050	SW8150	3 U	0.3 U	0.3 U	**0.8**	0.3 U	-	**0.9 J**	0.3 U	0.3 U	0.3 U	**0.4**
	06/03/95	PLF-EE4-0695	SW8150	0.047 U	0.025 U	0.031 U	0.02 U	0.027 U	-	0.015 U	0.024 U	0.034 U	0.031 U	0.035 U
	09/23/95	PLF-EE4-0995	SW8150	0.05 U	0.027 U	0.033 U	0.021 U	0.029 U	-	0.016 U	0.026 U	0.036 U	0.033 U	0.037 U
	03/23/96	PLF-EE4-0396	SW8150	0.046 U	0.054 U	0.035 U	0.043 U	0.03 U	-	0.048 U	0.04 U	0.049 U	0.058 U	0.063 U
EE-5	02/12/93	PLF-GW-051	SW8150	3 U	0.3 U	0.3 U	0.3 U	0.3 U	-	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
	06/03/95	PLF-EE5-0695	SW8150	0.046 U	0.025 U	0.031 U	0.019 U	0.027 U	-	0.015 U	0.024 U	0.033 U	0.031 U	0.034 U
	09/23/95	PLF-EE5-0995	SW8150	0.046 U	0.025 U	0.031 U	0.019 U	0.027 U	-	0.015 U	0.024 U	0.033 U	0.031 U	0.034 U
		0995_FDUP	SW8150	0.046 U	0.025 U	0.031 U	0.019 U	0.027 U	-	0.015 U	0.024 U	0.033 U	0.031 U	0.034 U
	12/05/95	PLF-EE5-1295	SW8150	0.046 U	0.054 U	0.035 U	0.043 U	0.03 U	-	0.048 U	0.04 U	0.049 U	0.058 U	0.063 U
	03/23/96	PLF-EE5-0396	SW8150	0.046 U	0.054 U	0.035 U	0.043 U	0.03 U	-	0.048 U	0.04 U	0.049 U	0.058 U	0.063 U

Notes:

µg/L = micrograms per liter

Bold indicates detetected concentration.

- = not tested

U = Analyte was not detected above the reported sample quantitation limit.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Table O-7
Pasco Landfill Zone B Groundwater Sample Results
Dioxins and Furans

Location	Date	Sample ID	Method	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	Total Heptachlorodibenzofuran (HpCDF)	Total Hexachlorodibenzofuran (HxCDF)	Total Hexachlorodibenzo-p-dioxin (HxCDD)	Total Pentachlorodibenzofuran (PeCDF)	Total Pentachlorodibenzo-p-dioxin (PeCDD)	Total Tetrachlorodibenzofuran (TCDF)	Total Tetrachlorodibenzo-p-dioxin (TCDD)
				ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L
MW-26S	04/23/09	PLF-MW26S-0409	E1613B	0.098 U	0.098 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	R	0.0098 U	0.049 U	0.049 U	0.049 U	0.049 U	0.049 U	0.0098 U	0.0098 U
		PLF-MW926S-0409_FDUP	E1613B	0.096 U	0.096 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	R	0.0096 U	0.048 U	0.048 U	0.048 U	0.048 U	0.048 U	0.0096 U	0.0096 U

Notes:

ng/L = nanograms per liter

Bold indicates detetected concentration.

- = not tested

U = Analyte was not detected above the reported sample quantitation limit.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R = The result was rejected

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1-Methylnaphthalene	2,2'-Oxybis (1-chloropropane)	2,2'-Oxybis (2-chloropropane)	2,3,4,6-Tetrachlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dichlorophenol	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylnaphthalene	2-Methylphenol (o-Cresol)	2-Nitroaniline	2-Nitrophenol	3,3'-Dichlorobenzidine	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	3-Methylphenol (m-Cresol)	3-Nitroaniline
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-25S	05/31/95	PLF-MW25S-0695	SW8270	0.092 U	0.092 U	0.092 U	0.092 U	-	0.092 U	-	-	0.092 U	0.092 U	0.092 U	0.092 U	0.46 U	0.092 U	-	0.092 U	0.092 U	0.092 U	0.092 U	0.092 U	0.46 U	0.092 U	0.092 U	-	-	0.092 U
	09/22/95	PLF-MW25S-0995	SW8270	0.098 U	0.098 U	0.098 U	0.098 U	-	0.098 U	-	-	0.098 U	0.098 U	0.098 U	0.098 U	0.49 UJ	0.098 U	-	0.098 U	0.098 U	0.098 U	**0.093**	0.098 U	0.49 U	0.098 U	0.098 U	-	-	0.49 U
	12/05/95	PLF-MW25S-1295	SW8270	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U	-	-	0.093 UJ	0.093 U	0.093 U	0.093 U	0.47 UJ	0.093 U	-	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.47 U	0.093 U	0.093 UJ	-	-	0.47 U
	03/23/96	PLF-MW25S-0396	SW8270	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U	-	-	0.093 U	0.093 U	0.093 U	0.093 U	0.47 U	0.093 U	-	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.47 U	0.093 U	0.093 U	-	-	0.47 U
	07/26/96	PLF-MW25S-0796	SW8150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0.6 U	-	0.8 U	-	-	-	2 U	-	1.4 U	1.4 U	1.4 U	0.6 U	4.2 UJ	0.4 U	-	1 U	4 U	0.8 U	4 U	2 U	2 U	1 U	0.2 UJ	-	-	2 U
	09/18/96	PLF-MW25S-0996	SW8150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0 U	-	0.8 U	-	-	-	1 U	-	0.7 U	0.7 U	0.7 U	0.3 U	2.1 U	0.2 U	-	0.5 U	2 U	0.4 U	2 U	1 U	1 U	0.5 U	0.1 U	-	-	1 U
	12/05/96	PLF-MW25S-1296	SW8270	0.6 U	0.2 U	0.2 U	1 U	-	0.6 U	-	-	0.7 U	0.7 U	0.7 U	0.3 U	2.1 U	0.2 U	-	0.5 U	2 U	0.4 U	1 U	1 U	0.8 U	0.5 U	0.01 U	-	1 U	0.9 U
	02/28/97	PLF-MW25S-0297	SW8270	0.6 U	0.2 U	0.2 U	1 U	-	0.6 U	-	-	0.7 U	0.7 U	0.7 U	0.3 U	2.1 U	0.2 U	-	0.5 U	2 U	0.4 U	1 U	1 U	0.8 U	0.5 U	0.01 UJ	-	1 U	0.9 U
	06/20/97	PLF-MW25S-0697	SW8150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0.0006 U	-	0.8 U	-	-	-	1 U	-	0.7 U	0.7 U	0.7 U	0.3 UJ	2.1 U	0.2 U	-	0.5 U	2 U	0.4 U	2 U	1 U	1 U	0.5 U	0.1 U	-	-	1 U
	09/26/97	PLF-MW25S-0997	SW8270	0.6 U	0.2 U	0.2 U	1 U	-	0.6 U	-	-	0.7 U	0.7 U	0.7 U	0.3 U	2.1 U	0.2 U	-	0.5 U	2 U	0.4 U	1 U	1 U	0.8 U	0.5 U	0.01 U	-	1 U	0.9 U
			UNKNOWN	0 U	-	-	-	-	-	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1 U	-	-	-
	12/05/97	PLF-MW25S-1297	SW8270	0.6 U	-	0.2 UJ	-	-	0.6 UJ	-	-	0.7 U	0.7 U	0.7 U	R	2.1 U	0.2 U	-	0.5 U	2 U	0.4 UJ	1 U	1 UJ	0.8 U	0.5 U	R	-	1 UJ	0.9 U
	03/06/98	PLF-MW25S-0398	SW8270	0.6 U	0.2 U	0.2 U	1 U	-	0.6 U	-	-	0.7 U	0.7 U	0.7 U	0.3 U	2.1 U	0.2 U	-	0.5 U	2 U	0.4 U	1 U	1 U	0.8 U	0.5 U	0.01 U	-	1 U	0.9 U
	06/08/98	PLF-MW25S-0698	SW8270	5 U	5 U	5 U	5 U	-	10 U	10 UJ	-	10 U	10 U	10 U	10 U	10 UJ	10 U	-	10 U	10 U	10 U	10 U	10 U	20 UJ	5 U	20 U	-	10 U	10 UJ
	09/11/98	PLF-MW25S-0998	SW8270	5 U	5 U	5 U	5 U	-	-	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	20 U	5 U	20 U	-	10 U	10 U
	12/09/98	PLF-MW25S-1298	SW8270	5 U	5 U	5 U	5 U	-	-	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	20 U	5 U	20 U	-	10 U	10 U
	03/12/99	PLF-MW25S-0399	SW8270	5 U	5 U	5 U	5 U	-	-	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	20 U	5 U	20 UJ	-	10 U	10 UJ
	06/11/99	PLF-MW25S-0699	SW8270	1.1 U	1.5 U	1.5 U	1.5 U	-	-	1 U	-	0.9 U	1.25 U	1.25 U	3.75 U	3 UJ	0.9 U	-	1.25 U	1.5 U	1.8 U	0.8 U	0.9 U	0.5 U	1.25 U	20 U	-	-	0.6 U
	09/17/99	PLF-MW25S-0999	SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U
	12/17/99	PLF-MW25S-1299	SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U
	03/10/00	PLF-MW25S-0300	SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 UJ	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	-	10 U
	06/15/00	PLF-MW25S-0600	SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 UJ	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	-	10 U
	09/11/00	PLF-MW25S-0900	SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	-	10 U
	11/17/00	PLF-MW25S-1100	SW8270	-	-	-	-	-	-	10 U	-	10 U	10 U	10 U	10 U	20 UJ	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	-	-	10 UJ
	03/16/01	PLF-MW25S-0301	SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	-	10 U
	06/08/01	PLF-MW25S-0601	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	09/12/01	PLF-MW25S-0901	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	12/14/01	PLF-MW25S-1201	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	03/28/02	PLF-MW25S-0302	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	06/13/02	PLF-MW25S-0602	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	09/12/02	PLF-MW25S-0902	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	12/17/02	PLF-MW-25S-1202	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 UJ	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	01/23/03	PLF-MW25S-0103	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 UJ	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	04/03/03	PLF-MW25S-0403	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 UJ	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	07/25/03	PLF-MW25S-0703	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	10/10/03	PLF-MW25S-1003	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	4-Bromophenyl-phenyl ether	4-Chloro-3-methylphenol	4-Chloroaniline	4-Chlorophenyl phenyl ether	4-Methylphenol (p-Cresol)	4-Nitroaniline	4-Nitrophenol	Acenaphthene	Acenaphthylene	Aniline	Anthracene	Azobenzene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(b,k)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic acid	Benzyl alcohol	bis(2-Chloroethoxy)methane	bis(2-Chloroethyl)ether	bis(2-Ethylhexyl)phthalate	Butylbenzyl phthalate	Carbazole	Chrysene
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-25S	05/31/95	PLF-MW25S-0695	SW8270	0.092 U	0.18 U	0.18 U	0.092 U	0.092 U	0.46 U	0.46 U	0.092 U	0.092 U	-	0.092 U	-	0.092 U	0.092 U	0.092 U	-	0.092 U	0.092 U	0.46 U	0.18 U	0.092 U	0.092 U	0.19 U	0.092 U	-	0.092 U
	09/22/95	PLF-MW25S-0995	SW8270	0.098 U	0.2 U	0.2 U	0.098 U	0.098 U	0.49 U	0.49 U	0.098 U	0.098 U	-	0.098 U	-	0.098 U	0.098 U	0.098 U	-	0.098 U	0.098 U	0.49 UJ	0.2 U	0.098 U	0.098 U	0.16 U	0.098 U	-	0.098 U
	12/05/95	PLF-MW25S-1295	SW8270	0.093 UJ	0.19 U	0.19 UJ	0.093 U	0.093 UJ	0.47 U	0.47 UJ	0.093 U	0.093 U	-	0.093 U	-	0.093 U	0.093 U	0.093 U	-	0.093 U	0.093 U	0.47 UJ	0.19 U	0.093 U	0.093 UJ	0.19 U	0.093 U	-	0.093 U
	03/23/96	PLF-MW25S-0396	SW8270	0.093 U	0.19 U	0.19 U	0.093 U	0.093 U	0.47 U	0.47 U	0.093 U	0.093 U	-	0.093 U	-	0.093 U	0.093 U	0.093 U	-	0.093 U	0.093 U	0.47 U	0.19 U	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U
	07/26/96	PLF-MW25S-0796	SW8150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	1.2 U	1.4 U	2 UJ	1.4 U	2 U	2 UJ	4 U	1.8 U	1.8 U	-	1.6 U	-	0.39 U	0.02 U	0.02 U	-	1.6 U	0.02 U	20 UJ	20 UJ	1.6 U	1.2 U	6.6 U	6.4 U	-	0.02 U
	09/18/96	PLF-MW25S-0996	SW8150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0.6 U	0.7 U	1 U	0.7 U	1 U	1 U	2 U	0.9 U	0.9 U	-	0.8 U	-	0.01 U	0.01 U	0.01 U	-	0.8 U	0.01 U	10 U	10 U	0.8 U	0.6 U	3.3 U	3.2 U	-	0.01 U
	12/05/96	PLF-MW25S-1296	SW8270	0.6 U	0.7 U	1 U	0.7 U	1 U	1 U	2 U	0.9 U	0.9 U	-	0.8 U	-	0.01 U	0.01 U	0.01 U	-	0.8 U	0.01 U	14 U	34 U	0.8 U	0.01 U	1.09 U	3.2 U	-	0.01 U
	02/28/97	PLF-MW25S-0297	SW8270	0.6 U	0.7 U	1 U	0.7 U	1 U	1 U	2 U	0.9 U	0.9 U	-	0.8 U	-	0.01 UJ	0.01 UJ	0.01 UJ	-	0.8 U	0.01 UJ	14 U	34 U	0.8 U	0.01 U	3.3 U	3.2 U	-	0.01 UJ
	06/20/97	PLF-MW25S-0697	SW8150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0.6 U	0.7 U	1 U	0.7 U	1 U	1 U	2 U	0.9 U	0.9 U	-	0.8 U	-	0.01 U	0.01 U	0.01 U	-	0.8 U	0.01 U	10 U	10 U	0.8 U	0.6 U	3.3 U	3.2 U	-	0.01 U
	09/26/97	PLF-MW25S-0997	SW8270	0.6 U	0.7 U	1 U	0.7 U	1 U	1 U	2 U	0.9 U	0.9 U	-	0.8 U	-	0.01 U	0.01 U	0.01 U	-	0.8 U	0.01 U	14 U	34 U	0.8 U	0.01 U	3.3 U	3.2 U	-	0.01 U
			UNKNOWN	0.6 U	-	-	0.7 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.8 U	0.6 U	3.3 U	3.2 U	-	-
	12/05/97	PLF-MW25S-1297	SW8270	0.6 U	0.7 U	1 U	0.7 U	1 UJ	1 U	2 U	0.9 U	0.9 UJ	-	0.8 UJ	-	0.01 U	0.01 U	0.01 U	-	0.8 U	0.01 U	R	34 UJ	0.8 U	0.01 U	3.3 UJ	3.2 U	-	0.01 U
	03/06/98	PLF-MW25S-0398	SW8270	0.6 U	0.7 U	1 U	0.7 U	1 U	1 U	2 U	0.9 U	0.9 U	-	0.8 U	-	0.01 U	0.01 U	0.01 U	-	0.8 U	0.01 U	14 U	34 U	0.8 U	0.01 U	3.3 U	3.2 U	-	0.01 U
	06/08/98	PLF-MW25S-0698	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	-	10 U	5 U	5 U	-	5 U	5 U	10 UJ	10 UJ	10 U	10 U	**8.77**	5 U	10 UJ	5 U
	09/11/98	PLF-MW25S-0998	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	5 U	5 U	-	5 U	5 U	10 U	10 U	10 U	10 U	20 U	**1.49**	10 U	5 U
	12/09/98	PLF-MW25S-1298	SW8270	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	5 U	5 U	-	5 U	5 U	10 UJ	10 U	10 U	10 U	20 U	5 U	10 U	5 U
	03/12/99	PLF-MW25S-0399	SW8270	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	5 U	5 U	-	5 U	5 U	10 U	10 U	10 U	10 U	20 U	5 U	10 U	5 U
	06/11/99	PLF-MW25S-0699	SW8270	1 U	1.25 U	1 U	1 U	1.25 U	2 U	1.5 U	0.8 U	1 U	0.4 U	0.8 U	-	0.8 U	2.5 U	2.5 U	-	2.5 U	1.3 U	2.5 U	1 U	2.8 U	1 U	4 U	1 U	6 U	1 U
	09/17/99	PLF-MW25S-0999	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	10 U	10 UJ	10 U	10 U	50 U	10 U	10 U	10 U
	12/17/99	PLF-MW25S-1299	SW8270	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	10 UJ	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	03/10/00	PLF-MW25S-0300	SW8270	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	10 UJ	10 UJ	10 U	10 U	50 UJ	10 UJ	10 U	10 U
	06/15/00	PLF-MW25S-0600	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	09/11/00	PLF-MW25S-0900	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	11/17/00	PLF-MW25S-1100	SW8270	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 UJ	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	03/16/01	PLF-MW25S-0301	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	06/08/01	PLF-MW25S-0601	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	09/12/01	PLF-MW25S-0901	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	**111**	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	12/14/01	PLF-MW25S-1201	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	03/28/02	PLF-MW25S-0302	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	06/13/02	PLF-MW25S-0602	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 UJ	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	09/12/02	PLF-MW25S-0902	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	12/17/02	PLF-MW-25S-1202	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 UJ	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	01/23/03	PLF-MW25S-0103	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	R	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	04/03/03	PLF-MW25S-0403	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 UJ	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	07/25/03	PLF-MW25S-0703	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 UJ	10 U	10 U	10 U	50 U	10 U	10 UJ	10 U
	10/10/03	PLF-MW25S-1003	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	Dibenzo(a,h)anthracene	Dibenzofuran	Diethyl phthalate	Dimethyl phthalate	Di-n-butyl phthalate	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	Di-n-octyl phthalate	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	Hexachlorocyclopentadiene	Hexachloroethane	Indeno(1,2,3-c,d)pyrene	Isophorone	Naphthalene	Nitrobenzene	n-Nitrosodimethylamine	n-Nitrosodi-n-propylamine	n-Nitrosodiphenylamine	Pentachlorophenol	Phenanthrene	Phenol	Pyrene	Pyridine	tert-Amyl methyl ether (TAME)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-25S	05/31/95	PLF-MW25S-0695	SW8270	0.092 U	0.092 U	0.092 U	**0.15**	6 U	0.46 U	0.092 U	0.092 U	0.092 U	R	0.092 U	0.092 U	**0.054**	0.092 U	0.092 U	0.092 U	0.092 U	-	0.092 U	0.092 U	0.46 U	0.092 U	0.092 U	0.092 U	-	-
	09/22/95	PLF-MW25S-0995	SW8270	0.098 U	0.098 U	0.098 U	0.098 U	**13**	0.49 UJ	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	**0.8**	0.098 U	-	0.098 U	0.098 U	0.49 U	0.098 U	0.098 U	0.098 U	-	-
	12/05/95	PLF-MW25S-1295	SW8270	0.093 U	0.093 U	0.093 U	0.093 U	0.64 U	0.47 UJ	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U	0.093 U	0.47 U	0.093 U	0.093 U	0.093 U	-	-
	03/23/96	PLF-MW25S-0396	SW8270	0.093 U	0.093 U	0.093 U	0.093 U	0.13 U	0.47 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U	0.093 U	0.47 U	0.093 U	0.093 U	0.093 U	-	-
	07/26/96	PLF-MW25S-0796	SW8150	-	-	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0.04 UJ	4 U	1.8 U	1.4 U	1.4 U	6 U	6 U	1.6 U	1.8 U	-	1 U	4.6 U	1.2 U	0.04 UJ	1.2 U	1.4 U	1.4 U	-	0.2 U	1.6 U	0.4 U	1.6 U	1.2 U	1.6 U	-	-
	09/18/96	PLF-MW25S-0996	SW8150	-	-	-	-	-	-	-	-	-	0.01 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0.01 U	2 U	0.9 U	0.7 U	0.7 U	3 U	3 U	0.8 U	0.9 U	-	0.5 U	2.3 U	0.6 U	0.01 U	0.6 U	0.7 U	0.7 U	-	0.01 U	0.8 U	0.2 U	0.8 U	0.6 U	0.8 U	-	-
	12/05/96	PLF-MW25S-1296	SW8270	0.01 U	1.8 U	0.9 U	0.7 U	0.7 U	3 U	3 U	0.8 U	0.9 U	0.01 U	0.5 U	2.3 U	0.6 U	0.01 U	0.6 U	0.7 U	0.7 U	-	0.01 UJ	0.8 U	0.2 U	0.8 U	0.6 U	0.8 U	-	-
	02/28/97	PLF-MW25S-0297	SW8270	0.01 UJ	1.8 U	0.9 U	0.7 U	0.7 U	3 U	3 U	0.8 U	0.9 U	0.01 UJ	0.5 U	2.3 U	0.6 U	0.01 UJ	0.6 U	0.7 U	0.7 U	-	0.01 U	0.8 U	0.2 U	0.8 U	0.6 U	0.8 U	-	-
	06/20/97	PLF-MW25S-0697	SW8150	-	-	-	-	-	-	-	-	-	0.01 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0.01 U	2 U	0.9 U	0.7 U	0.7 U	3 U	3 U	0.8 U	0.9 U	-	0.5 U	2.3 U	0.6 U	0.01 U	0.6 U	0.7 U	0.7 U	-	0.01 U	0.8 U	0.2 U	0.8 U	0.6 U	0.8 U	-	-
	09/26/97	PLF-MW25S-0997	SW8270	0.01 U	1.8 U	0.9 U	0.7 U	0.7 U	3 U	3 U	0.8 U	0.9 U	0.01 U	0.5 U	2.3 U	0.6 U	0.01 U	0.6 U	0.7 U	0.7 U	-	0.01 U	0.8 U	0.2 U	0.8 U	0.6 U	0.8 U	-	-
			UNKNOWN	-	2 U	0.9 U	0.7 U	0.7 U	-	3 U	-	-	-	-	2.3 U	0.6 U	-	0.6 U	-	-	-	0.01 U	0.8 U	-	-	-	-	-	-
	12/05/97	PLF-MW25S-1297	SW8270	0.01 U	1.8 UJ	0.9 U	0.7 U	0.7 UJ	3 U	3 UJ	0.8 U	0.9 U	0.01 U	0.5 U	R	0.6 UJ	0.01 U	0.6 U	0.7 U	0.7 U	-	0.01 UJ	0.8 U	0.2 U	0.8 UJ	0.6 UJ	0.8 U	-	-
	03/06/98	PLF-MW25S-0398	SW8270	0.01 U	1.8 U	0.9 U	0.7 U	0.7 U	3 U	3 U	0.8 U	0.9 U	0.01 U	0.5 U	2.3 U	0.6 U	0.01 U	0.6 U	0.7 U	0.7 U	-	0.01 U	0.8 U	0.2 U	0.8 U	0.6 U	0.8 U	-	-
	06/08/98	PLF-MW25S-0698	SW8270	5 U	10 U	**2.08**	10 U	5 U	10 U	5 U	5 U	10 U	10 U	5 U	5 U	10 U	5 U	10 UJ	10 U	10 UJ	-	10 UJ	10 U	10 U	10 U	10 U	5 U	-	-
	09/11/98	PLF-MW25S-0998	SW8270	5 U	10 U	10 U	10 U	5 U	10 U	5 U	5 U	10 U	10 U	5 U	5 U	10 U	5 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	5 U	-	-
	12/09/98	PLF-MW25S-1298	SW8270	5 U	10 U	10 U	10 U	5 U	10 U	5 U	5 U	10 U	10 UJ	5 U	5 UJ	10 U	5 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	5 U	-	-
	03/12/99	PLF-MW25S-0399	SW8270	5 U	10 U	10 U	10 U	5 U	10 U	5 U	5 U	10 U	10 U	5 U	5 U	10 U	5 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	5 U	-	-
	06/11/99	PLF-MW25S-0699	SW8270	2.25 U	1 U	1 U	1 U	1 U	0.75 U	2.75 U	1 U	1 U	1.25 U	1.25 U	1.75 U	2 U	2 U	1 U	1.25 U	1 U	-	1 U	3.25 U	1.5 U	1 U	0.9 U	0.8 U	-	-
	09/17/99	PLF-MW25S-0999	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 UJ	-	10 U	10 U	10 U	10 U	10 UJ	10 U	-	-
	12/17/99	PLF-MW25S-1299	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 UJ	10 U	10 U	10 U	-	-
	03/10/00	PLF-MW25S-0300	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	06/15/00	PLF-MW25S-0600	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 UJ	10 U	10 U	10 U	-	-
	09/11/00	PLF-MW25S-0900	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	11/17/00	PLF-MW25S-1100	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	-	10 U	-	10 UJ	10 U	10 U	10 U	10 U	10 U	-	-
	03/16/01	PLF-MW25S-0301	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	06/08/01	PLF-MW25S-0601	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	09/12/01	PLF-MW25S-0901	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	12/14/01	PLF-MW25S-1201	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	03/28/02	PLF-MW25S-0302	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	06/13/02	PLF-MW25S-0602	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	09/12/02	PLF-MW25S-0902	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	12/17/02	PLF-MW-25S-1202	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 UJ	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 UJ	10 U	10 U	-	-
	01/23/03	PLF-MW25S-0103	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	04/03/03	PLF-MW25S-0403	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	07/25/03	PLF-MW25S-0703	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	10/10/03	PLF-MW25S-1003	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 UJ	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1-Methylnaphthalene	2,2'-Oxybis (1-chloropropane)	2,2'-Oxybis (2-chloropropane)	2,3,4,6-Tetrachlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dichlorophenol	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylnaphthalene	2-Methylphenol (o-Cresol)	2-Nitroaniline	2-Nitrophenol	3,3'-Dichlorobenzidine	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	3-Methylphenol (m-Cresol)	3-Nitroaniline
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-25S (cont.)	01/28/04	PLF-MW25S-0104	SW8270	R	R	R	R	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW-925S-0104_FDUP	SW8270	R	R	R	R	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	04/21/04	PLF-MW25S-0404	SW8270	R	R	R	R	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	07/13/04	PLF-MW25S-0704	SW8270	R	R	R	R	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	10/13/04	PLF-MW25S-1004	SW8270	-	-	-	-	-	10 UJ	-	-	10 UJ	10 UJ	10 UJ	10 UJ	20 UJ	10 UJ	-	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	-	10 UJ
	01/27/05	PLF-MW25S-0105	SW8270	R	R	R	R	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	04/21/05	PLF-MW25S-0405	SW8270	-	-	-	-	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	07/13/05	PLF-MW25S-0705	SW8270	R	R	R	R	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	-	10 U
	10/12/05	PLF-MW25S-1005	SW8270	R	R	R	R	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	01/11/06	PLF-MW25S-0106	SW8270	10 U	10 U	10 U	10 U	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	04/12/06	PLF-MW25S-0406	SW8270	10 U	10 U	10 U	10 U	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	07/12/06	PLF-MW25S-0706	SW8270	10 U	10 U	10 U	10 U	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	10/17/06	PLF-MW25S-1006	SW8270	10 U	10 U	10 U	10 U	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	01/10/07	PLF-MW25S-0107	SW8270	10 U	10 U	10 U	10 U	-	10 UJ	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	04/16/13	PLF-MW25S-0413	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-25SR	10/23/13	PLF-MW25SR-1013	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/22/14	PLF-MW25SR-0414	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/21/14	PLF-MW25SR-1014	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/21/15	PLF-MW25SR-0415	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/27/15	PLF-MW25SR-1015	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/28/16	PLF-MW25SR-0416	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/18/16	PLF-25SR-1016	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-26S	06/03/95	PLF-MW26S-0695	SW8270	0.1 U	0.1 U	0.1 U	0.1 U	-	0.1 U	-	-	0.1 U	0.1 U	0.1 U	0.1 U	0.51 U	0.1 U	-	**0.18**	0.1 U	0.1 U	0.1 U	0.1 U	0.51 U	0.1 U	0.1 U	-	-	0.1 U
	09/22/95	PLF-MW26S-0995	SW8270	0.098 U	0.098 U	0.098 U	0.098 U	-	0.098 U	-	-	0.098 U	0.098 U	0.098 U	0.098 U	0.49 UJ	0.098 U	-	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.49 U	0.098 U	0.098 U	-	-	0.49 U
	12/05/95	PLF-MW26S-1295	SW8270	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U	-	-	0.093 UJ	0.093 U	0.093 U	0.093 U	0.47 UJ	0.093 U	-	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.47 U	0.093 U	0.093 UJ	-	-	0.47 U
	03/23/96	PLF-MW26S-0396	SW8270	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U	-	-	0.093 U	0.093 U	0.093 U	0.093 U	0.47 U	0.093 U	-	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.47 U	0.093 U	0.093 U	-	-	0.47 U
	07/26/96	PLF-MW26S-0796	SW8150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0.6 U	-	0.8 U	-	-	-	1 U	-	0.7 U	0.7 U	0.7 U	0.3 UJ	2.1 UJ	0.2 U	-	0.5 U	2 U	0.4 U	2 U	1 U	1 U	0.5 U	0.1 UJ	-	-	1 UJ
		PLF-MW926S-0796_FDUP	SW8150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0 U	-	0.8 U	-	-	-	1 U	-	0.7 U	0.7 U	0.7 U	0.3 U	2.1 U	0.2 U	-	0.5 U	2 U	0.4 U	2 U	1 U	1 U	0.5 U	0.1 U	-	-	1 U
	09/18/96	PLF-MW26S-0996	SW8150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0 UJ	-	0.8 U	-	-	-	1 UJ	-	0.7 U	0.7 U	0.7 U	0.3 U	2.1 U	0.2 UJ	-	0.5 UJ	2 UJ	0.4 U	2 UJ	1 U	1 UJ	0.5 U	0.1 UJ	-	-	1 UJ
		PLF-MW926S-0996_FDUP	SW8150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0 U	-	0.8 U	-	-	-	1 U	-	0.7 U	0.7 U	0.7 U	0.3 U	2.1 U	0.2 U	-	0.5 U	2 U	0.4 U	2 U	1 U	1 U	0.5 U	0.1 U	-	-	1 U
	12/05/96	PLF-MW26S-1296	SW8150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0.6 U	0.2 U	0.2 U	1 U	-	0.6 U	-	-	0.7 U	0.7 U	0.7 U	0.3 U	2.1 U	0.2 U	-	0.5 U	2 U	0.4 U	1 U	1 U	0.8 U	0.5 U	0.01 U	-	1 U	0.9 U
		PLF-MW926S-1296_FDUP	SW8150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0.6 U	0.2 U	0.2 U	1 U	-	0.6 U	-	-	0.7 U	0.7 U	0.7 U	0.3 U	2.1 U	0.2 U	-	0.5 U	2 U	0.4 U	1 U	1 U	0.8 U	0.5 U	0.01 U	-	1 U	0.9 U
	02/28/97	PLF-MW26S-0297	SW8270	0.6 U	0.2 U	0.2 U	1 U	-	0.6 U	-	-	0.7 U	0.7 U	0.7 U	0.3 U	2.1 U	0.2 U	-	0.5 U	2 U	0.4 U	1 U	1 U	0.8 U	0.5 U	0.01 U	-	1 U	0.9 U
		PLF-MW926S-0297_FDUP	SW8270	0.6 U	0.2 U	0.2 U	1 U	-	0.6 U	-	-	0.7 U	0.7 U	0.7 U	0.3 U	2.1 U	0.2 U	-	0.5 U	2 U	0.4 U	1 U	1 U	0.8 U	0.5 U	0.01 U	-	1 U	0.9 U
	06/20/97	PLF-MW26S-0697	SW8150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	R	-	0.8 U	-	-	-	R	-	R	R	R	R	R	R	-	R	R	R	R	R	R	R	0.1 U	-	-	R
	09/26/97	PLF-MW26S-0997	SW8270	0.6 U	0.2 U	0.2 U	1 U	-	0.6 U	-	-	0.7 U	0.7 U	0.7 U	0.3 U	2.1 U	0.2 U	-	0.5 U	2 U	0.4 U	1 U	1 U	0.8 U	0.5 U	0.01 U	-	1 U	0.9 U
		PLF-MW926S-0997_FDUP	SW8270	0.6 U	0.2 U	0.2 U	1 U	-	0.6 U	-	-	0.7 U	0.7 U	0.7 U	0.3 U	2.1 U	0.2 U	-	0.5 U	2 U	0.4 U	1 U	1 U	0.8 U	0.5 U	0.01 U	-	1 U	0.9 U
	12/05/97	PLF-MW26S-1297	SW8270	0.6 U	-	0.2 UJ	-	-	0.6 UJ	-	-	0.7 U	0.7 U	0.7 U	0.3 U	2.1 U	0.2 U	-	0.5 U	2 U	0.4 UJ	1 U	1 UJ	0.8 U	0.5 U	R	-	1 UJ	0.9 U
		PLF-MW926S-1297_FDUP	UNKNOWN	0 U	-	-	-	-	-	1 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1 U	-	-	-
	03/06/98	PLF-MW26S-0398	SW8270	0.6 U	0.2 U	0.2 U	1 U	-	0.6 U	-	-	0.7 U	0.7 U	0.7 U	0.3 U	2.1 U	0.2 U	-	0.5 U	2 U	0.4 U	1 U	1 U	0.8 U	0.5 U	0.01 U	-	1 U	0.9 U
		PLF-MW926S-0398_FDUP	SW8270	0.6 U	0.2 U	0.2 U	1 U	-	0.6 U	-	-	0.7 U	0.7 U	0.7 U	0.3 U	2.1 U	0.2 U	-	0.5 U	2 U	0.4 U	1 U	1 U	0.8 U	0.5 U	0.01 U	-	1 U	0.9 U
	06/08/98	PLF-MW26S-0698	SW8270	5 U	5 U	5 U	5 U	-	10 U	10 UJ	-	10 U	10 U	10 U	10 U	10 UJ	10 U	-	10 U	10 U	10 U	10 U	10 U	20 UJ	5 U	20 U	-	10 U	10 UJ
		PLF-MW926S-0698_FDUP	SW8270	5 U	5 U	5 U	5 U	-	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	20 U	5 U	20 U	-	10 U	10 U

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	4-Bromophenyl-phenyl ether	4-Chloro-3-methylphenol	4-Chloroaniline	4-Chlorophenyl phenyl ether	4-Methylphenol (p-Cresol)	4-Nitroaniline	4-Nitrophenol	Acenaphthene	Acenaphthylene	Aniline	Anthracene	Azobenzene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(b,k)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic acid	Benzyl alcohol	bis(2-Chloroethoxy)methane	bis(2-Chloroethyl)ether	bis(2-Ethylhexyl)phthalate	Butylbenzyl phthalate	Carbazole	Chrysene
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-25S (cont.)	01/28/04	PLF-MW25S-0104	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW-925S-0104_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	04/21/04	PLF-MW25S-0404	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 UJ	10 U	10 U	10 U	50 U	10 U	-	10 U
	07/13/04	PLF-MW25S-0704	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	10/13/04	PLF-MW25S-1004	SW8270	10 UJ	10 UJ	10 UJ	10 UJ	-	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	-	10 UJ	10 UJ	-	10 UJ	10 UJ	-	20 UJ	10 UJ	10 UJ	10 UJ	50 UJ	10 UJ	-	10 UJ
	01/27/05	PLF-MW25S-0105	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	04/21/05	PLF-MW25S-0405	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	07/13/05	PLF-MW25S-0705	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 UJ	10 U	10 U	10 U	50 U	10 U	-	10 U
	10/12/05	PLF-MW25S-1005	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	01/11/06	PLF-MW25S-0106	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	04/12/06	PLF-MW25S-0406	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 UJ	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	07/12/06	PLF-MW25S-0706	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	10/17/06	PLF-MW25S-1006	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	01/10/07	PLF-MW25S-0107	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	04/16/13	PLF-MW25S-0413	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-25SR	10/23/13	PLF-MW25SR-1013	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/22/14	PLF-MW25SR-0414	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/21/14	PLF-MW25SR-1014	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/21/15	PLF-MW25SR-0415	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/27/15	PLF-MW25SR-1015	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/28/16	PLF-MW25SR-0416	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/18/16	PLF-25SR-1016	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-26S	06/03/95	PLF-MW26S-0695	SW8270	0.1 U	0.2 U	0.2 U	0.1 U	0.1 U	0.51 U	0.51 U	0.1 U	0.1 U	-	0.1 U	-	0.1 U	0.1 U	0.1 U	-	0.1 U	0.1 U	0.51 U	0.2 U	0.1 U	0.1 U	0.19 U	**0.085**	-	0.1 U
	09/22/95	PLF-MW26S-0995	SW8270	0.098 U	0.2 U	0.2 U	0.098 U	0.098 U	0.49 U	0.49 U	0.098 U	0.098 U	-	0.098 U	-	0.098 U	0.098 U	0.098 U	-	0.098 U	0.098 U	0.49 UJ	0.2 U	0.098 U	0.098 U	0.32 U	0.098 U	-	0.098 U
	12/05/95	PLF-MW26S-1295	SW8270	0.093 UJ	0.19 U	0.19 UJ	0.093 U	0.093 UJ	0.47 U	0.47 UJ	0.093 U	0.093 U	-	0.093 U	-	0.093 U	0.093 U	0.093 U	-	0.093 U	0.093 U	0.47 UJ	0.19 U	0.093 U	0.093 UJ	0.14 U	0.093 U	-	0.093 U
	03/23/96	PLF-MW26S-0396	SW8270	0.093 U	0.19 U	0.19 U	0.093 U	0.093 U	0.47 U	0.47 U	0.093 U	0.093 U	-	0.093 U	-	0.093 U	0.093 U	0.093 U	-	0.093 U	0.093 U	0.47 U	0.19 U	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U
	07/26/96	PLF-MW26S-0796	SW8150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0.6 U	0.7 U	1 U	0.7 U	1 U	1 UJ	2 U	0.9 U	0.9 U	-	0.8 U	-	0.19 U	0.01 U	0.01 U	-	0.8 U	0.01 U	10 UJ	10 UJ	0.8 U	0.6 U	3.3 U	3.2 U	-	0.01 U
		PLF-MW926S-0796_FDUP	SW8150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0.6 U	0.7 U	1 U	0.7 U	1 U	1 U	2 U	0.9 U	0.9 U	-	0.8 U	-	**0.21**	**0.1**	**0.1**	-	0.8 U	**0.1**	10 U	10 U	0.8 U	0.6 U	3.3 U	3.2 U	-	0.01 U
	09/18/96	PLF-MW26S-0996	SW8150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0.6 UJ	0.7 U	1 UJ	0.7 UJ	1 U	1 UJ	2 U	0.9 UJ	0.9 UJ	-	0.8 UJ	-	0.01 UJ	0.01 UJ	0.01 UJ	-	0.8 UJ	0.01 UJ	R	10 U	0.8 UJ	0.6 UJ	3.3 UJ	3.2 UJ	-	0.01 UJ
		PLF-MW926S-0996_FDUP	SW8150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0.6 U	0.7 U	1 U	0.7 U	1 U	1 U	2 U	0.9 U	0.9 U	-	0.8 U	-	0.01 U	0.01 U	0.01 U	-	0.8 U	0.01 U	10 U	10 U	0.8 U	0.6 U	3.3 U	3.2 U	-	0.01 U
	12/05/96	PLF-MW26S-1296	SW8150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0.6 U	0.7 U	1 U	0.7 U	1 U	1 U	2 U	0.9 U	0.9 U	-	0.8 U	-	0.01 U	0.01 U	0.01 U	-	0.8 U	0.01 U	14 U	34 U	0.8 U	0.01 U	3.3 U	3.2 U	-	0.01 U
		PLF-MW926S-1296_FDUP	SW8150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0.6 U	0.7 U	1 U	0.7 U	1 U	1 U	2 U	0.9 U	0.9 U	-	0.8 U	-	0.01 U	0.01 U	0.01 U	-	0.8 U	0.01 U	14 U	34 U	0.8 U	0.01 U	0.296 U	3.2 U	-	0.01 U
	02/28/97	PLF-MW26S-0297	SW8270	0.6 U	0.7 U	1 U	0.7 U	1 U	1 U	2 U	0.9 U	0.9 U	-	0.8 U	-	0.01 U	0.01 U	0.01 U	-	0.8 U	0.01 U	14 U	34 U	0.8 U	0.01 U	3.3 U	3.2 U	-	0.01 U
		PLF-MW926S-0297_FDUP	SW8270	0.6 U	0.7 U	1 U	0.7 U	1 U	1 U	2 U	0.9 U	0.9 U	-	0.8 U	-	0.01 U	0.01 U	0.01 U	-	0.8 U	0.01 U	14 U	34 U	0.8 U	0.01 U	3.3 U	3.2 U	-	0.01 U
	06/20/97	PLF-MW26S-0697	SW8150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	R	R	R	R	R	R	R	R	R	-	R	-	0.01 U	0.01 U	0.01 U	-	R	0.01 U	R	R	R	R	R	R	-	0.01 U
	09/26/97	PLF-MW26S-0997	SW8270	0.6 U	0.7 U	1 U	0.7 U	1 U	1 U	2 U	0.9 U	0.9 U	-	0.8 U	-	0.01 U	0.01 U	0.01 U	-	0.8 U	0.01 U	14 U	34 U	0.8 U	0.01 U	3.3 U	3.2 U	-	0.01 U
		PLF-MW926S-0997_FDUP	SW8270	0.6 U	0.7 U	1 U	0.7 U	1 U	1 U	2 U	0.9 U	0.9 U	-	0.8 U	-	0.01 U	0.01 U	0.01 U	-	0.8 U	0.01 U	14 U	34 U	0.8 U	0.01 U	3.3 U	3.2 U	-	0.01 U
	12/05/97	PLF-MW26S-1297	SW8270	0.6 U	0.7 U	1 U	0.7 U	1 UJ	1 U	2 U	0.9 U	0.9 UJ	-	0.8 UJ	-	0.01 U	0.01 U	0.01 U	-	0.8 U	0.01 U	R	34 UJ	0.8 U	0.01 U	3.3 UJ	3.2 U	-	0.01 U
		PLF-MW926S-1297_FDUP	UNKNOWN	0.6 U	-	-	0.7 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.8 U	0.01 U	3.3 U	3.2 U	-	-
	03/06/98	PLF-MW26S-0398	SW8270	0.6 U	0.7 U	1 U	0.7 U	1 U	1 U	2 U	0.9 U	0.9 U	-	0.8 U	-	0.01 U	0.01 U	0.01 U	-	0.8 U	0.01 U	14 U	34 U	0.8 U	0.01 U	3.3 U	3.2 U	-	0.01 U
		PLF-MW926S-0398_FDUP	SW8270	0.6 U	0.7 U	1 U	0.7 U	1 U	1 U	2 U	0.9 U	0.9 U	-	0.8 U	-	0.01 U	0.01 U	0.01 U	-	0.8 U	0.01 U	14 U	34 U	0.8 U	0.01 U	3.3 U	3.2 U	-	0.01 U
	06/08/98	PLF-MW26S-0698	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	-	10 U	5 U	5 U	-	5 U	5 U	10 UJ	10 UJ	10 U	10 U	**43.8**	5 U	10 UJ	5 U
		PLF-MW926S-0698_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	5 U	5 U	-	5 U	5 U	10 U	10 U	10 U	10 U	**59.2**	5 U	10 U	5 U

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	Dibenzo(a,h)anthracene	Dibenzofuran	Diethyl phthalate	Dimethyl phthalate	Di-n-butyl phthalate	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	Di-n-octyl phthalate	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	Hexachlorocyclopentadiene	Hexachloroethane	Indeno(1,2,3-c,d)pyrene	Isophorone	Naphthalene	Nitrobenzene	n-Nitrosodimethylamine	n-Nitrosodi-n-propylamine	n-Nitrosodiphenylamine	Pentachlorophenol	Phenanthrene	Phenol	Pyrene	Pyridine	tert-Amyl methyl ether (TAME)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-25S (cont.)	01/28/04	PLF-MW25S-0104	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW-925S-0104_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	04/21/04	PLF-MW25S-0404	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	07/13/04	PLF-MW25S-0704	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	10/13/04	PLF-MW25S-1004	SW8270	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	-	10 UJ	10 UJ	10 UJ	10 UJ	-	10 UJ	-	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	-	-
	01/27/05	PLF-MW25S-0105	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	04/21/05	PLF-MW25S-0405	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	-	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	07/13/05	PLF-MW25S-0705	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	10/12/05	PLF-MW25S-1005	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	01/11/06	PLF-MW25S-0106	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	04/12/06	PLF-MW25S-0406	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 UJ	10 U	10 U	10 U	-	-
	07/12/06	PLF-MW25S-0706	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	10/17/06	PLF-MW25S-1006	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	01/10/07	PLF-MW25S-0107	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	04/16/13	PLF-MW25S-0413	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
MW-25SR	10/23/13	PLF-MW25SR-1013	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
	04/22/14	PLF-MW25SR-0414	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
	10/21/14	PLF-MW25SR-1014	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
	04/21/15	PLF-MW25SR-0415	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
	10/27/15	PLF-MW25SR-1015	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
	04/28/16	PLF-MW25SR-0416	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
	10/18/16	PLF-25SR-1016	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
MW-26S	06/03/95	PLF-MW26S-0695	SW8270	0.1 U	0.1 U	0.1 U	**0.11**	0.39 U	0.51 U	0.1 U	0.1 U	0.1 U	R	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	-	0.1 U	0.1 U	0.51 U	0.1 U	0.1 U	0.1 U	-	-
	09/22/95	PLF-MW26S-0995	SW8270	0.098 U	0.098 U	**0.059**	0.098 U	**15**	0.49 UJ	**0.1**	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	-	0.098 U	0.098 U	0.49 U	0.098 U	0.098 U	0.098 U	-	-
	12/05/95	PLF-MW26S-1295	SW8270	0.093 U	0.093 U	0.093 U	0.093 U	1.3 U	0.47 UJ	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U	0.093 U	0.47 U	0.093 U	0.093 U	0.093 U	-	-
	03/23/96	PLF-MW26S-0396	SW8270	0.093 U	0.093 U	0.093 U	0.093 U	0.17 U	0.47 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U	0.093 U	0.47 U	0.093 U	0.093 U	0.093 U	-	-
	07/26/96	PLF-MW26S-0796	SW8150	-	-	-	-	-	-	-	-	-	0.01 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0.02 UJ	2 U	0.9 U	0.7 U	0.7 U	3 U	3 U	0.8 U	0.9 U	-	0.5 U	2.3 U	0.6 U	0.02 UJ	0.6 U	0.7 U	0.7 U	-	0.1 U	0.8 U	0.2 U	0.8 U	0.6 U	0.8 U	-	-
		PLF-MW926S-0796_FDUP	SW8150	-	-	-	-	-	-	-	-	-	0.01 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	**0.2**	2 U	0.9 U	0.7 U	0.7 U	3 U	3 U	0.8 U	0.9 U	-	0.5 U	2.3 U	0.6 U	**0.2**	0.6 U	0.7 U	0.7 U	-	0.1 U	0.8 U	0.2 U	0.8 U	0.6 U	0.8 U	-	-
	09/18/96	PLF-MW26S-0996	SW8150	-	-	-	-	-	-	-	-	-	0.01 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0.01 UJ	2 UJ	0.9 UJ	0.7 UJ	0.7 UJ	3 U	3 UJ	0.8 UJ	0.9 UJ	-	0.5 UJ	2.3 UJ	0.6 UJ	0.01 UJ	0.6 UJ	0.7 UJ	0.7 UJ	-	0.01 UJ	0.8 UJ	0.2 U	0.8 UJ	0.6 U	0.8 UJ	-	-
		PLF-MW926S-0996_FDUP	SW8150	-	-	-	-	-	-	-	-	-	0.01 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0.01 U	2 U	0.9 U	0.7 U	0.7 U	3 U	3 U	0.8 U	0.9 U	-	0.5 U	2.3 U	0.6 U	0.01 U	0.6 U	0.7 U	0.7 U	-	0.01 U	0.8 U	0.2 U	0.8 U	0.6 U	0.8 U	-	-
	12/05/96	PLF-MW26S-1296	SW8150	-	-	-	-	-	-	-	-	-	0.01 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0.01 U	1.8 U	0.9 U	0.7 U	0.7 U	3 U	3 U	0.8 U	0.9 U	0.01 U	0.5 U	2.3 U	0.6 U	0.01 U	0.6 U	0.7 U	0.7 U	-	0.01 U	0.8 U	0.2 U	0.8 U	0.6 U	0.8 U	-	-
		PLF-MW926S-1296_FDUP	SW8150	-	-	-	-	-	-	-	-	-	0.01 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0.01 U	1.8 U	0.9 U	0.7 U	0.7 U	3 U	3 U	0.8 U	0.9 U	0.01 U	0.5 U	2.3 U	0.6 U	0.01 U	0.6 U	0.7 U	0.7 U	-	0.01 U	0.8 U	0.2 U	0.8 U	0.6 U	0.8 U	-	-
	02/28/97	PLF-MW26S-0297	SW8270	0.01 UJ	1.8 U	0.9 U	0.7 U	1.04 U	3 U	3 U	0.8 U	0.9 U	0.01 U	0.5 U	2.3 U	0.6 U	0.01 U	0.6 U	0.7 U	0.7 U	-	0.01 U	0.8 U	0.2 U	0.8 U	0.6 U	0.8 U	-	-
		PLF-MW926S-0297_FDUP	SW8270	0.01 U	1.8 U	0.9 U	0.7 U	0.991 U	3 U	3 U	0.8 U	0.9 U	0.01 U	0.5 U	2.3 U	0.6 U	0.01 U	0.6 U	0.7 U	0.7 U	-	0.01 U	0.8 U	0.2 U	0.8 U	0.6 U	0.8 U	-	-
	06/20/97	PLF-MW26S-0697	SW8150	-	-	-	-	-	-	-	-	-	0.01 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	0.01 U	R	R	R	R	R	R	R	R	-	R	R	R	0.01 U	R	R	R	-	0.01 U	R	R	R	R	R	-	-
	09/26/97	PLF-MW26S-0997	SW8270	0.01 U	1.8 U	0.9 U	0.7 U	0.7 U	3 U	3 U	0.8 U	0.9 U	0.01 U	0.5 U	2.3 U	0.6 U	0.01 U	0.6 U	0.7 U	0.7 U	-	0.01 U	0.8 U	0.2 U	0.8 U	0.6 U	0.8 U	-	-
		PLF-MW926S-0997_FDUP	SW8270	0.01 U	1.8 U	0.9 U	0.7 U	0.7 U	3 U	3 U	0.8 U	0.9 U	0.01 U	0.5 U	2.3 U	0.6 U	0.01 U	0.6 U	0.7 U	0.7 U	-	0.01 U	0.8 U	0.2 U	0.8 U	0.6 U	0.8 U	-	-
	12/05/97	PLF-MW26S-1297	SW8270	0.01 U	1.8 UJ	0.9 U	0.7 U	0.7 UJ	3 U	3 UJ	0.8 U	0.9 U	0.01 U	0.5 U	R	0.6 UJ	0.01 U	0.6 U	0.7 U	0.7 U	-	0.01 UJ	0.8 U	0.2 U	0.8 UJ	0.6 UJ	0.8 U	-	-
		PLF-MW926S-1297_FDUP	UNKNOWN	-	2 U	0.9 U	0.7 U	0.7 U	-	3 U	-	-	-	-	2.3 U	0.6 U	-	0.6 U	-	-	-	0.01 U	0.8 U	-	-	-	-	-	-
	03/06/98	PLF-MW26S-0398	SW8270	0.01 U	1.8 U	0.9 U	0.7 U	0.7 U	3 U	3 U	0.8 U	0.9 U	0.01 U	0.5 U	2.3 U	0.6 U	0.01 U	0.6 U	0.7 U	0.7 U	-	0.01 U	0.8 U	0.2 U	0.8 U	0.6 U	0.8 U	-	-
		PLF-MW926S-0398_FDUP	SW8270	0.01 U	1.8 U	0.9 U	0.7 U	0.7 U	3 U	**3**	0.8 U	0.9 U	0.01 U	0.5 U	2.3 U	0.6 U	0.01 U	0.6 U	0.7 U	0.7 U	-	0.01 U	0.8 U	0.2 U	0.8 U	0.6 U	0.8 U	-	-
	06/08/98	PLF-MW26S-0698	SW8270	5 U	10 U	**1.68**	10 U	5 U	10 U	5 U	5 U	10 U	10 U	5 U	5 U	10 U	5 U	10 UJ	10 U	10 UJ	-	10 UJ	10 U	10 U	10 U	10 U	5 U	-	-
		PLF-MW926S-0698_FDUP	SW8270	5 U	10 U	**2.08**	10 U	5 U	10 U	5 U	5 U	10 U	10 U	5 U	5 U	10 U	5 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	5 U	-	-

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1-Methylnaphthalene	2,2'-Oxybis (1-chloropropane)	2,2'-Oxybis (2-chloropropane)	2,3,4,6-Tetrachlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dichlorophenol	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylnaphthalene	2-Methylphenol (o-Cresol)	2-Nitroaniline	2-Nitrophenol	3,3'-Dichlorobenzidine	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	3-Methylphenol (m-Cresol)	3-Nitroaniline
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26S (cont.)	09/11/98	PLF-MW26S-0998	SW8270	5 U	5 U	5 U	5 U	-	-	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	20 U	5 U	20 U	-	10 U	10 U
		PLF-MW926S-0998_FDUP	SW8270	5 U	5 U	5 U	5 U	-	-	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	20 U	5 U	20 U	-	10 U	10 U
	12/09/98	PLF-MW26S-1298	SW8270	5 U	5 U	5 U	5 U	-	-	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	20 U	5 U	20 U	-	10 U	10 U
		PLF-MW926S-1298_FDUP	SW8270	5 U	5 U	5 U	5 U	-	-	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	20 U	5 U	20 U	-	10 U	10 U
	03/12/99	PLF-MW26S-0399	SW8270	5 U	5 U	5 U	5 U	-	-	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	20 U	5 U	20 UJ	-	10 U	10 UJ
		PLF-MW926S-0399_FDUP	SW8270	5 U	5 U	5 U	5 U	-	-	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	20 U	5 U	20 U	-	10 U	10 U
	06/11/99	PLF-MW26S-0699	SW8270	1.1 U	1.5 U	1.5 U	1.5 U	-	-	1 U	-	0.9 U	1.25 U	1.25 U	3.75 U	3 UJ	0.9 U	-	1.25 U	1.5 U	1.8 U	0.8 U	0.9 U	0.5 U	1.25 U	20 U	-	-	0.6 U
		PLF-MW926S-0699_FDUP	SW8270	1.1 U	1.5 U	1.5 U	1.5 U	-	-	1 U	-	0.9 U	1.25 U	1.25 U	3.75 U	3 U	0.9 U	-	1.25 U	1.5 U	1.8 U	0.8 U	0.9 U	0.5 U	1.25 U	20 U	-	-	0.6 U
	09/17/99	PLF-MW26S-0999	SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U
	12/17/99	PLF-MW26S-1299	SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U
		PLF-MW26S-1299_FDUP	SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U
	03/10/00	PLF-MW26S-0300	SW8260SIM	0.05 U	0.02 U	0.02 U	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 UJ	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	-	10 U
		PLF-MW926S-0300_FDUP	SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	-	10 U
	06/15/00	PLF-MW26S-0600	SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 UJ	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	-	10 U
		PLF-MW926S-0600_FDUP	SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	-	10 U
	09/11/00	PLF-MW26S-0900	SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	-	10 U
		PLF-MW926S-0900_FDUP	SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	-	10 U
	11/17/00	PLF-MW26S-1200	SW8270	-	-	-	-	-	-	10 U	-	10 U	10 U	10 U	10 U	20 UJ	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	-	-	10 UJ
		PLF-MW926S-1200_FDUP	SW8270	-	-	-	-	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	-	10 U
	03/16/01	PLF-MW26S-0301	SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	-	10 U
		PLF-MW926S-0301_FDUP	SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	-	10 U
	06/08/01	PLF-MW26S-0601	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0601_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	09/12/01	PLF-MW26S-0901	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0901_FDUP	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	12/14/01	PLF-MW26S-1201	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-1201_FDUP	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	03/28/02	PLF-MW26S-0302	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0302_FDUP	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	06/13/02	PLF-MW26S-0602	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0602_FDUP	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	09/12/02	PLF-MW26S-0902	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0902_FDUP	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	4-Bromophenyl-phenyl ether	4-Chloro-3-methylphenol	4-Chloroaniline	4-Chlorophenyl phenyl ether	4-Methylphenol (p-Cresol)	4-Nitroaniline	4-Nitrophenol	Acenaphthene	Acenaphthylene	Aniline	Anthracene	Azobenzene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(b,k)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic acid	Benzyl alcohol	bis(2-Chloroethoxy)methane	bis(2-Chloroethyl)ether	bis(2-Ethylhexyl)phthalate	Butylbenzyl phthalate	Carbazole	Chrysene
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26S (cont.)	09/11/98	PLF-MW26S-0998	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	5 U	5 U	-	5 U	5 U	10 U	10 U	10 U	10 U	20 U	**1.38**	10 U	5 U
		PLF-MW926S-0998_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	5 U	5 U	-	5 U	5 U	10 U	10 U	10 U	10 U	20 U	5 U	10 U	5 U
	12/09/98	PLF-MW26S-1298	SW8270	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	5 U	5 U	-	5 U	5 U	10 UJ	10 U	10 U	10 U	20.1 U	5 U	10 U	5 U
		PLF-MW926S-1298_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	5 U	5 U	-	5 U	5 U	10 U	10 U	10 U	10 U	20 U	5 U	10 U	5 U
	03/12/99	PLF-MW26S-0399	SW8270	10 U	10 U	10 UJ	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	-	10 U	5 U	5 U	-	5 U	5 U	10 U	10 U	10 U	10 U	20 U	5 U	10 U	5 U
		PLF-MW926S-0399_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	5 U	5 U	-	5 U	5 U	10 U	10 U	10 U	10 U	20 U	5 U	10 U	5 U
	06/11/99	PLF-MW26S-0699	SW8270	1 U	1.25 U	1 U	1 U	1.25 U	2 U	1.5 U	0.8 U	1 U	0.4 U	0.8 U	-	0.8 U	2.5 U	2.5 U	-	2.5 U	1.3 U	2.5 U	1 U	2.8 U	1 U	4 U	1 U	6 U	1 U
		PLF-MW926S-0699_FDUP	SW8270	1 U	1.25 U	1 U	1 U	1.25 U	2 U	1.5 U	0.8 U	1 U	0.4 U	0.8 U	-	0.8 U	2.5 U	2.5 U	-	2.5 U	1.3 U	2.5 U	1 U	2.8 U	1 U	**9.56**	1 U	6 U	1 U
	09/17/99	PLF-MW26S-0999	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	10 U	10 UJ	10 U	10 U	50 U	10 U	10 U	10 U
	12/17/99	PLF-MW26S-1299	SW8270	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	10 UJ	10 U	10 U	10 U	50 U	10 U	10 U	10 U
		PLF-MW26S-1299_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	03/10/00	PLF-MW26S-0300	SW8260SIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	10 UJ	10 UJ	10 U	10 U	50 UJ	10 UJ	10 U	10 U
		PLF-MW926S-0300_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	06/15/00	PLF-MW26S-0600	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
		PLF-MW926S-0600_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	09/11/00	PLF-MW26S-0900	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
		PLF-MW926S-0900_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	11/17/00	PLF-MW26S-1200	SW8270	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 UJ	10 U	10 U	10 U	50 U	10 U	10 U	10 U
		PLF-MW926S-1200_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	03/16/01	PLF-MW26S-0301	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	**5.73**	10 U	10 U	10 U
		PLF-MW926S-0301_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	06/08/01	PLF-MW26S-0601	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
		PLF-MW926S-0601_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	09/12/01	PLF-MW26S-0901	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
		PLF-MW926S-0901_FDUP	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	12/14/01	PLF-MW26S-1201	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
		PLF-MW926S-1201_FDUP	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	03/28/02	PLF-MW26S-0302	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
		PLF-MW926S-0302_FDUP	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	06/13/02	PLF-MW26S-0602	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 UJ	10 U	10 U	10 U	50 U	10 U	10 U	10 U
		PLF-MW926S-0602_FDUP	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 UJ	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	09/12/02	PLF-MW26S-0902	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
		PLF-MW926S-0902_FDUP	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	Dibenzo(a,h)anthracene	Dibenzofuran	Diethyl phthalate	Dimethyl phthalate	Di-n-butyl phthalate	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	Di-n-octyl phthalate	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	Hexachlorocyclopentadiene	Hexachloroethane	Indeno(1,2,3-c,d)pyrene	Isophorone	Naphthalene	Nitrobenzene	n-Nitrosodimethylamine	n-Nitrosodi-n-propylamine	n-Nitrosodiphenylamine	Pentachlorophenol	Phenanthrene	Phenol	Pyrene	Pyridine	tert-Amyl methyl ether (TAME)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26S	09/11/98	PLF-MW26S-0998	SW8270	5 U	10 U	10 U	10 U	5 U	10 U	5 U	5 U	10 U	10 U	5 U	5 U	10 U	5 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	5 U	-	-
(cont.)		PLF-MW926S-0998_FDUP	SW8270	5 U	10 U	10 U	10 U	5 U	10 U	5 U	5 U	10 U	10 U	5 U	5 U	10 U	5 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	5 U	-	-
	12/09/98	PLF-MW26S-1298	SW8270	5 U	10 U	10 U	10 U	5 U	10 U	5 U	5 U	10 U	10 UJ	5 U	5 UJ	10 U	5 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	5 UJ	-	-
		PLF-MW926S-1298_FDUP	SW8270	5 U	10 U	10 U	10 U	5 U	10 U	5 U	5 U	10 U	10 U	5 U	5 U	10 U	5 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	5 U	-	-
	03/12/99	PLF-MW26S-0399	SW8270	5 U	10 U	10 U	10 U	5 U	10 U	5 U	5 U	10 U	10 U	5 U	5 U	10 U	5 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	5 U	-	-
		PLF-MW926S-0399_FDUP	SW8270	5 U	10 U	10 U	10 U	**1.36**	10 U	5 U	5 U	10 U	10 U	5 U	5 U	10 U	5 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	5 U	-	-
	06/11/99	PLF-MW26S-0699	SW8270	2.25 U	1 U	1 U	1 U	1 U	0.75 U	2.75 U	1 U	1 U	1.25 U	1.25 U	1.75 U	2 U	2 U	1 U	1.25 U	1 U	-	1 U	3.25 U	1.5 U	1 U	0.9 U	0.8 U	-	-
		PLF-MW926S-0699_FDUP	SW8270	2.25 U	1 U	1 U	1 U	1 U	0.75 U	2.75 U	1 U	1 U	1.25 U	1.25 U	1.75 U	2 U	2 U	1 U	1.25 U	1 U	-	1 U	3.25 U	1.5 U	1 U	0.9 U	0.8 U	-	-
	09/17/99	PLF-MW26S-0999	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 UJ	-	10 U	10 U	10 U	10 U	10 UJ	10 U	-	-
	12/17/99	PLF-MW26S-1299	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 UJ	10 U	10 U	10 U	-	-
		PLF-MW26S-1299_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	03/10/00	PLF-MW26S-0300	SW8260SIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0300_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	06/15/00	PLF-MW26S-0600	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 UJ	10 U	10 U	10 U	-	-
		PLF-MW926S-0600_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	09/11/00	PLF-MW26S-0900	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0900_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	11/17/00	PLF-MW26S-1200	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	-	10 U	-	10 UJ	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-1200_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	-	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	03/16/01	PLF-MW26S-0301	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0301_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	06/08/01	PLF-MW26S-0601	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0601_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	09/12/01	PLF-MW26S-0901	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0901_FDUP	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	12/14/01	PLF-MW26S-1201	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-1201_FDUP	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	03/28/02	PLF-MW26S-0302	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0302_FDUP	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	06/13/02	PLF-MW26S-0602	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0602_FDUP	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	09/12/02	PLF-MW26S-0902	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0902_FDUP	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1-Methylnaphthalene	2,2'-Oxybis (1-chloropropane)	2,2'-Oxybis (2-chloropropane)	2,3,4,6-Tetrachlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dichlorophenol	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylnaphthalene	2-Methylphenol (o-Cresol)	2-Nitroaniline	2-Nitrophenol	3,3'-Dichlorobenzidine	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	3-Methylphenol (m-Cresol)	3-Nitroaniline
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26S (cont.)	12/17/02	PLF-MW-26S-1202	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 UJ	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-1202_FDUP	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 UJ	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	01/23/03	PLF-MW26S-0103	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 UJ	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0103_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 UJ	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	04/02/03	PLF-MW26S-0403	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 UJ	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0403_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 UJ	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	07/25/03	PLF-MW26S-0703	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0703_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	10/10/03	PLF-MW26S-1003	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-1003_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	01/28/04	PLF-MW26S-0104	SW8270	R	R	R	R	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	04/21/04	PLF-MW26S-0404	SW8270	R	R	R	R	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0404_FDUP	SW8270	R	R	R	R	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	07/13/04	PLF-MW26S-0704	SW8270	R	R	R	R	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	07/14/04	PLF-MW926S-0704_FDUP	SW8270	R	R	R	R	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	10/13/04	PLF-MW26S-1004	SW8270	-	-	-	-	-	10 UJ	-	-	10 UJ	10 UJ	10 UJ	10 UJ	20 UJ	10 UJ	-	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	-	10 UJ
		PLF-MW926S-1004_FDUP	SW8270	-	-	-	-	-	10 UJ	-	-	10 UJ	10 UJ	10 UJ	10 UJ	20 UJ	10 UJ	-	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	-	10 UJ
	01/27/05	PLF-MW26S-0105	SW8270	-	-	-	-	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0105_FDUP	SW8270	-	-	-	-	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	04/21/05	PLF-MW26S-0405	SW8270	-	-	-	-	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0205_FDUP	SW8270	-	-	-	-	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	07/13/05	PLF-MW26S-0705	SW8270	R	R	R	R	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0705_FDUP	SW8270	R	R	R	R	-	10 UJ	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	10/12/05	PLF-MW26S-1005	SW8270	R	R	R	R	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-1005_FDUP	SW8270	R	R	R	R	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	01/11/06	PLF-MW26S-0106	SW8270	R	R	R	R	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0106_FDUP	SW8270	R	R	R	R	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	04/12/06	PLF-MW26S-0406	SW8270	R	R	R	R	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0406_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	R	R	R	R	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	07/12/06	PLF-MW26S-0706	SW8270	R	R	R	R	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0706_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	R	R	R	R	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	10/17/06	PLF-MW26S-1006	SW8270	R	R	R	R	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-1006_FDUP	SW8270	R	R	R	R	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	01/10/07	PLF-MW26S-0107	SW8270	R	R	R	R	-	10 UJ	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0107_FDUP	SW8270	R	R	R	R	-	10 UJ	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	04/19/07	PLF-MW26S-0407	SW8270	10 U	10 U	10 U	10 U	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0407_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	07/11/07	PLF-MW26S-0707	SW8270	10 U	10 U	10 U	10 U	-	10 UJ	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0707_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 UJ	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	-	10 U

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	4-Bromophenyl-phenyl ether	4-Chloro-3-methylphenol	4-Chloroaniline	4-Chlorophenyl phenyl ether	4-Methylphenol (p-Cresol)	4-Nitroaniline	4-Nitrophenol	Acenaphthene	Acenaphthylene	Aniline	Anthracene	Azobenzene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(b,k)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic acid	Benzyl alcohol	bis(2-Chloroethoxy)methane	bis(2-Chloroethyl)ether	bis(2-Ethylhexyl)phthalate	Butylbenzyl phthalate	Carbazole	Chrysene
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26S	12/17/02	PLF-MW-26S-1202	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(cont.)			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 UJ	10 U	10 U	10 U	50 U	10 U	10 U	10 U
		PLF-MW926S-1202_FDUP	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 UJ	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	01/23/03	PLF-MW26S-0103	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	10 U	10 UJ	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	R	10 U	10 U	10 U	50 U	10 U	10 U	10 U
		PLF-MW926S-0103_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	10 U	10 UJ	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	R	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	04/02/03	PLF-MW26S-0403	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 UJ	10 U	10 U	10 U	50 U	10 U	10 U	10 U
		PLF-MW926S-0403_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 UJ	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	07/25/03	PLF-MW26S-0703	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 UJ	10 U	10 U	10 U	50 U	10 U	10 UJ	10 U
		PLF-MW926S-0703_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 UJ	10 U	10 U	10 U	50 U	10 U	10 UJ	10 U
	10/10/03	PLF-MW26S-1003	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
		PLF-MW926S-1003_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
	01/28/04	PLF-MW26S-0104	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	04/21/04	PLF-MW26S-0404	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 UJ	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW926S-0404_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 UJ	10 U	10 U	10 U	50 U	10 U	-	10 U
	07/13/04	PLF-MW26S-0704	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	07/14/04	PLF-MW926S-0704_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	10/13/04	PLF-MW26S-1004	SW8270	10 UJ	10 UJ	10 UJ	10 UJ	-	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	-	10 UJ	10 UJ	-	10 UJ	10 UJ	-	20 UJ	10 UJ	10 UJ	10 UJ	50 UJ	10 UJ	-	10 UJ
		PLF-MW926S-1004_FDUP	SW8270	10 UJ	10 UJ	10 UJ	10 UJ	-	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	-	10 UJ	10 UJ	-	10 UJ	10 UJ	-	20 UJ	10 UJ	10 UJ	10 UJ	50 UJ	10 UJ	-	10 UJ
	01/27/05	PLF-MW26S-0105	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW926S-0105_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	04/21/05	PLF-MW26S-0405	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW926S-0205_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	07/13/05	PLF-MW26S-0705	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 UJ	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW926S-0705_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 UJ	10 U	10 U	10 U	50 U	10 U	-	10 U
	10/12/05	PLF-MW26S-1005	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW926S-1005_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	01/11/06	PLF-MW26S-0106	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW926S-0106_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	04/12/06	PLF-MW26S-0406	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 UJ	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW926S-0406_FDUP	SW8151A	-	-	-	-	-	-	0.24 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 UJ	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	07/12/06	PLF-MW26S-0706	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW926S-0706_FDUP	SW8151A	-	-	-	-	-	-	0.24 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	10/17/06	PLF-MW26S-1006	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW926S-1006_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	01/10/07	PLF-MW26S-0107	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW926S-0107_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	04/19/07	PLF-MW26S-0407	SW8270	10 U	10 U	10 U	10 U	-	10 UJ	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW926S-0407_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 UJ	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	07/11/07	PLF-MW26S-0707	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW926S-0707_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	Dibenzo(a,h)anthracene	Dibenzofuran	Diethyl phthalate	Dimethyl phthalate	Di-n-butyl phthalate	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	Di-n-octyl phthalate	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	Hexachlorocyclopentadiene	Hexachloroethane	Indeno(1,2,3-c,d)pyrene	Isophorone	Naphthalene	Nitrobenzene	n-Nitrosodimethylamine	n-Nitrosodi-n-propylamine	n-Nitrosodiphenylamine	Pentachlorophenol	Phenanthrene	Phenol	Pyrene	Pyridine	tert-Amyl methyl ether (TAME)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26S (cont.)	12/17/02	PLF-MW-26S-1202	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 UJ	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 UJ	10 U	10 U	-	-
		PLF-MW926S-1202_FDUP	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 UJ	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 UJ	10 U	10 U	-	-
	01/23/03	PLF-MW26S-0103	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0103_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	04/02/03	PLF-MW26S-0403	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0403_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	07/25/03	PLF-MW26S-0703	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0703_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 U	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	10/10/03	PLF-MW26S-1003	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 UJ	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-1003_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 UJ	-	-	-	-	-
			SW8270C	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	01/28/04	PLF-MW26S-0104	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	04/21/04	PLF-MW26S-0404	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0404_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	07/13/04	PLF-MW26S-0704	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	07/14/04	PLF-MW926S-0704_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	10/13/04	PLF-MW26S-1004	SW8270	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	-	10 UJ	10 UJ	10 UJ	10 UJ	-	10 UJ	-	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	-	-
		PLF-MW926S-1004_FDUP	SW8270	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	-	10 UJ	10 UJ	10 UJ	10 UJ	-	10 UJ	-	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	-	-
	01/27/05	PLF-MW26S-0105	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	-	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0105_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	-	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	04/21/05	PLF-MW26S-0405	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	-	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0205_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	-	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	07/13/05	PLF-MW26S-0705	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0705_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	10/12/05	PLF-MW26S-1005	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-1005_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	01/11/06	PLF-MW26S-0106	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0106_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	04/12/06	PLF-MW26S-0406	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 UJ	10 U	10 U	10 U	-	-
		PLF-MW926S-0406_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.24 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 UJ	10 U	10 U	10 U	-	-
	07/12/06	PLF-MW26S-0706	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0706_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.24 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	10/17/06	PLF-MW26S-1006	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-1006_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	01/10/07	PLF-MW26S-0107	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 UJ	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0107_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 UJ	10 U	10 U	10 U	R	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	04/19/07	PLF-MW26S-0407	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0407_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	07/11/07	PLF-MW26S-0707	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 UJ	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0707_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 UJ	10 U	10 U	10 U	10 U	10 U	-	-

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1-Methylnaphthalene	2,2'-Oxybis (1-chloropropane)	2,2'-Oxybis (2-chloropropane)	2,3,4,6-Tetrachlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dichlorophenol	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylnaphthalene	2-Methylphenol (o-Cresol)	2-Nitroaniline	2-Nitrophenol	3,3'-Dichlorobenzidine	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	3-Methylphenol (m-Cresol)	3-Nitroaniline
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26S (cont.)	10/23/07	PLF-MW26S-102307_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	10/24/07	PLF-MW26S-1007	SW8270	10 U	10 U	10 U	10 U	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	01/16/08	PLF-MW26S-0108	SW8270	10 U	10 U	10 U	10 U	-	10 U	-	-	10 U	10 U	10 U	10 U	20 UJ	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0108_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	-	-	10 U	10 U	10 U	10 U	20 UJ	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	04/23/08	PLF-MW26S-0408	SW8270	10 U	10 U	10 U	10 U	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0408_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	07/16/08	PLF-MW26S-0708	SW8270	10 U	10 U	10 U	10 U	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0708_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	10/23/08	PLF-MW26S-1008	SW8270	10 U	10 U	10 U	10 U	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-1008_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	01/28/09	PLF-MW26S-0109	SW8270	10 U	10 U	10 U	10 U	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0109_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	04/23/09	PLF-MW26S-0409	SW8270	10 U	10 U	10 U	10 U	-	10 U	-	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	07/30/09	MW-26S-0709_FDUP	SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW26S-0709	SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	10/21/09	PLF-MW26S-1009	SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-1009_FDUP	SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	01/27/10	PLF-MW26S-0110	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0110_FDUP	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	04/21/10	PLF-MW26S-0410	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	2 U	2 U	2 U	2 U	-	-	2 U	-	2 U	2 U	2 U	2 U	10 U	2 U	-	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	-	2 U
		PLF-MW926S-0410_FDUP	SW8270	2 U	2 U	2 U	2 U	-	-	2 U	-	2 U	2 U	2 U	2 U	10 U	2 U	-	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	-	2 U
	07/14/10	PLF-MW26S-0710	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
			SW8270SIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926S-0710_FDUP	SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
			SW8270SIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/13/10	PLF-MW26S-1010	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-1010_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	01/12/11	PLF-MW26S-0111	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926S-0111	SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0111_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	04/20/11	PLF-MW26S-0411	SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0411	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926S-0411_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	07/27/11	PLF-MW26S-0711	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-0711_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
	10/26/11	PLF-MW26S-1011	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U
		PLF-MW926S-1011_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	-	10 U	-	10 U	10 U	10 U	10 U	20 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	4-Bromophenyl-phenyl ether	4-Chloro-3-methylphenol	4-Chloroaniline	4-Chlorophenyl phenyl ether	4-Methylphenol (p-Cresol)	4-Nitroaniline	4-Nitrophenol	Acenaphthene	Acenaphthylene	Aniline	Anthracene	Azobenzene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(b,k)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic acid	Benzyl alcohol	bis(2-Chloroethoxy)methane	bis(2-Chloroethyl)ether	bis(2-Ethylhexyl)phthalate	Butylbenzyl phthalate	Carbazole	Chrysene
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26S (cont.)	10/23/07	PLF-MW26S-102307_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	10/24/07	PLF-MW26S-1007	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	01/16/08	PLF-MW26S-0108	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 UJ	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW926S-0108_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 UJ	10 U	10 U	10 U	50 U	10 U	-	10 U
	04/23/08	PLF-MW26S-0408	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW926S-0408_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	07/16/08	PLF-MW26S-0708	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW926S-0708_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	10/23/08	PLF-MW26S-1008	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW926S-1008_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	01/28/09	PLF-MW26S-0109	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW926S-0109_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	04/23/09	PLF-MW26S-0409	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	-	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	07/30/09	MW-26S-0709_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW26S-0709	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	10/21/09	PLF-MW26S-1009	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW926S-1009_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	01/27/10	PLF-MW26S-0110	SW8151A	-	-	-	-	-	-	0.24 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	R	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW926S-0110_FDUP	SW8151	-	-	-	-	-	-	0.24 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	R	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	04/21/10	PLF-MW26S-0410	SW8151A	-	-	-	-	-	-	0.24 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	2 U	2 U	2 U	2 U	-	2 U	2 U	2 U	2 U	2 U	2 U	-	2 U	2 U	2 U	-	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	-	2 U
		PLF-MW926S-0410_FDUP	SW8270	2 U	2 U	2 U	2 U	-	2 U	2 U	2 U	2 U	2 U	2 U	-	2 U	2 U	2 U	-	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	-	2 U
	07/14/10	PLF-MW26S-0710	SW8151A	-	-	-	-	-	-	0.24 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	R	10 U	-	10 UJ	10 U	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
			SW8270SIM	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	0.02 U	0.02 U	-	-	0.02 U	-	-	-	-	-	-	-	0.02 U
		PLF-MW926S-0710_FDUP	SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	R	10 U	-	10 UJ	10 U	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
			SW8270SIM	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	0.02 U	0.02 U	-	-	0.02 U	-	-	-	-	-	-	-	0.02 U
	10/13/10	PLF-MW26S-1010	SW8151A	-	-	-	-	-	-	0.24 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	R	R	R	-	10 U	R	20 U	10 U	10 U	10 U	50 U	10 U	-	R
		PLF-MW926S-1010_FDUP	SW8151A	-	-	-	-	-	-	0.24 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	R	R	R	-	10 U	R	20 U	10 U	10 U	10 U	50 U	10 U	-	R
	01/12/11	PLF-MW26S-0111	SW8151A	-	-	-	-	-	-	0.24 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926S-0111	SW8270	10 U	10 U	10 U	10 U	-	10 U	-	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW926S-0111_FDUP	SW8151A	-	-	-	-	-	-	0.24 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	-	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	04/20/11	PLF-MW26S-0411	SW8270	10 U	10 U	10 U	10 U	-	10 U	-	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 UJ	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW926S-0411	SW8151A	-	-	-	-	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926S-0411_FDUP	SW8151A	-	-	-	-	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 UJ	10 U	10 U	50 U	10 U	-	10 U
	07/27/11	PLF-MW26S-0711	SW8151A	-	-	-	-	-	-	0.24 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	-	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW926S-0711_FDUP	SW8151A	-	-	-	-	-	-	0.24 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	-	10 U	-	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
	10/26/11	PLF-MW26S-1011	SW8151A	-	-	-	-	-	-	0.25 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 UJ	10 U	-	10 UJ	-	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U
		PLF-MW926S-1011_FDUP	SW8151A	-	-	-	-	-	-	0.24 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	10 U	10 U	10 UJ	10 U	-	10 UJ	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	-	10 U	10 U	20 U	10 U	10 U	10 U	50 U	10 U	-	10 U

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	Dibenzo(a,h)anthracene	Dibenzofuran	Diethyl phthalate	Dimethyl phthalate	Di-n-butyl phthalate	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	Di-n-octyl phthalate	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	Hexachlorocyclopentadiene	Hexachloroethane	Indeno(1,2,3-c,d)pyrene	Isophorone	Naphthalene	Nitrobenzene	n-Nitrosodimethylamine	n-Nitrosodi-n-propylamine	n-Nitrosodiphenylamine	Pentachlorophenol	Phenanthrene	Phenol	Pyrene	Pyridine	tert-Amyl methyl ether (TAME)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26S (cont.)	10/23/07	PLF-MW26S-102307_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	10/24/07	PLF-MW26S-1007	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	01/16/08	PLF-MW26S-0108	SW8270	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0108_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	04/23/08	PLF-MW26S-0408	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0408_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	07/16/08	PLF-MW26S-0708	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0708_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	10/23/08	PLF-MW26S-1008	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-1008_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	01/28/09	PLF-MW26S-0109	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-0109_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	04/23/09	PLF-MW26S-0409	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	07/30/09	MW-26S-0709_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW26S-0709	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	10/21/09	PLF-MW26S-1009	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
		PLF-MW926S-1009_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	10 U	10 U	10 U	10 U	-	-
	01/27/10	PLF-MW26S-0110	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.24 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	10 U	-	-
		PLF-MW926S-0110_FDUP	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	10 U	-	-
	04/21/10	PLF-MW26S-0410	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.24 U	-	-	-	-	-
			SW8270	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	-	2 U	2 U	R	2 U	2 U	2 U	-	-
		PLF-MW926S-0410_FDUP	SW8270	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	-	2 U	2 U	R	2 U	2 U	2 U	-	-
	07/14/10	PLF-MW26S-0710	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.24 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	10 U	-	-
			SW8270SIM	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926S-0710_FDUP	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	10 U	-	-
			SW8270SIM	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
	10/13/10	PLF-MW26S-1010	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.24 U	-	-	-	-	-
			SW8270	R	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	-	10 U	10 U	R	10 U	10 U	10 U	-	-
		PLF-MW926S-1010_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.24 U	-	-	-	-	-
			SW8270	R	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	R	10 U	10 U	10 U	-	10 U	10 U	R	10 U	10 U	10 U	-	-
	01/12/11	PLF-MW26S-0111	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.24 U	-	-	-	-	-
		PLF-MW926S-0111	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	10 U	-	-
		PLF-MW926S-0111_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.24 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	10 U	-	-
	04/20/11	PLF-MW26S-0411	SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 UJ	10 U	10 U	-	10 U	10 U	-	10 U	10 U	10 U	-	-
		PLF-MW926S-0411	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.024 U	-	-	-	-	-
		PLF-MW926S-0411_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.024 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 UJ	10 U	10 U	-	10 U	10 U	-	10 U	10 U	10 U	-	-
	07/27/11	PLF-MW26S-0711	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.24 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	10 U	-	-
		PLF-MW926S-0711_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.24 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 U	10 U	10 U	-	-
	10/26/11	PLF-MW26S-1011	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	-	10 UJ	10 U	10 U	-	-
		PLF-MW926S-1011_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.24 U	-	-	-	-	-
			SW8270	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	R	10 UJ	10 U	10 U	-	-

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1-Methylnaphthalene	2,2'-Oxybis (1-chloropropane)	2,2'-Oxybis (2-chloropropane)	2,3,4,6-Tetrachlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dichlorophenol	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylnaphthalene	2-Methylphenol (o-Cresol)	2-Nitroaniline	2-Nitrophenol	3,3'-Dichlorobenzidine	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	3-Methylphenol (m-Cresol)	3-Nitroaniline
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26S	01/26/12	PLF-MW26S-0112	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(cont.)			SW8270	2 U	2 U	2 U	1.8 U	2 U	-	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	-	2 U	-	5 U
			SW8270SIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/26/12	PLF-MW26S-0412	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	-	-	-	-	2 U	-	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	-	2 U	-	5 U
			SW8270SIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	07/24/12	PLF-MW26S-0712	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	-	-	-	-	2 U	-	2 UJ	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	-	2 U	-	5 U
			SW8270SIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	07/24/12	PLF-MW926S-0712_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	2 U	2 U	2 U	1.8 U	2 U	-	2 UJ	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	-	2 U	-	5 U
			SW8270SIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/15/12	PLF-MW26S-1012	SW8270	-	-	-	-	2 U	-	2 U	2 U	2 U	2 U	2 U	2 U	10 UJ	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	-	2 U	-	5 U
			SW8270SIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	01/30/13	PLF-MW26S-0113	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	R	R	R	R	2 U	-	2 U	2 U	2 U	2 U	2 U	2 U	10 UJ	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	-	2 U	-	5 U
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8321B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926S-0113	SW8270D	2 U	2 U	2 U	1.8 U	2 U	-	2 U	2 U	2 U	2 U	2 U	2 U	10 UJ	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	-	2 U	-	5 U
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8321B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/16/13	PLF-MW26S-0413	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	R	R	R	R	2 U	-	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	-	5 U
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8321B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-26SR	07/24/13	PLF-MW26S-0713	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	R	R	R	R	2 U	-	2 UJ	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	-	5 U
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8321B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926SR-0713	SW8270D	2 U	2 U	2 U	1.8 U	2 U	-	2 UJ	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	-	5 U
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8321B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/23/13	PLF-MW26SR-1013	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	R	R	R	R	2 U	-	2 U	2 U	2 U	2 U	2 U	2 U	10 UJ	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	-	5 U
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	01/23/14	PLF-MW26SR-0114	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	-	-	-	-	2 U	-	2 U	2 U	2 U	2 U	2 U	2 U	10 UJ	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	-	5 U
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	01/23/14	PLF-MW926SR-0114	SW8270D	2 U	2 U	2 U	1.8 U	2 U	-	2 U	2 U	2 U	2 U	2 U	2 U	10 UJ	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	-	5 U
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8321B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	4-Bromophenyl-phenyl ether	4-Chloro-3-methylphenol	4-Chloroaniline	4-Chlorophenyl phenyl ether	4-Methylphenol (p-Cresol)	4-Nitroaniline	4-Nitrophenol	Acenaphthene	Acenaphthylene	Aniline	Anthracene	Azobenzene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(b,k)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic acid	Benzyl alcohol	bis(2-Chloroethoxy)methane	bis(2-Chloroethyl)ether	bis(2-Ethylhexyl)phthalate	Butylbenzyl phthalate	Carbazole	Chrysene
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26S	01/26/12	PLF-MW26S-0112	SW8151A	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(cont.)			SW8270	2 U	2 U	2 U	2 U	-	2.3 U	-	2 U	2 U	5 U	2 U	2 U	-	-	-	-	2 U	-	10 U	2 U	2 U	-	2 U	2 U	2 U	-
			SW8270SIM	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	0.029 U	0.03 U	-	-	**0.023**	-	-	-	0.04 U	-	-	-	0.02 U
	04/26/12	PLF-MW26S-0412	SW8151A	-	-	-	-	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	2 U	2 U	2 U	2 U	-	2.3 U	-	2 U	2 U	5 U	2 U	2 U	-	-	-	-	2 U	-	10 U	2 U	2 U	-	2 U	2 U	2 U	-
			SW8270SIM	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	0.029 U	0.03 U	-	-	0.021 U	-	-	-	0.04 U	-	-	-	0.02 U
	07/24/12	PLF-MW26S-0712	SW8151A	-	-	-	-	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	2 U	2 U	2 U	2 U	-	2.3 U	-	2 U	2 U	5 UJ	2 U	2 U	-	-	-	-	2 U	-	10 U	2 U	2 U	-	2 U	2 U	2 UJ	-
			SW8270SIM	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	0.029 U	0.03 U	-	-	0.021 U	-	-	-	0.04 U	-	-	-	0.02 U
	07/24/12	PLF-MW926S-0712_FDUP	SW8151A	-	-	-	-	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270	2 U	2 U	2 U	2 U	-	2.3 U	-	2 U	2 U	5 UJ	2 U	2 U	-	-	-	-	2 U	-	10 U	2 U	2 U	-	2 U	2 U	2 UJ	-
			SW8270SIM	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	0.029 U	0.03 U	-	-	0.021 U	-	-	-	0.04 U	-	-	-	0.02 U
	10/15/12	PLF-MW26S-1012	SW8270	2 U	2 U	2 UJ	2 U	-	2.3 U	4.5 U	2 U	2 U	5 U	2 U	2 U	-	-	-	-	2 U	-	10 UJ	2 U	2 U	-	2 U	2 U	2 U	-
			SW8270SIM	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	0.029 U	0.03 U	-	-	0.021 U	-	-	-	0.04 U	-	-	-	0.02 U
	01/30/13	PLF-MW26S-0113	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	2 U	-	2.3 U	R	2 U	2 U	5 U	2 U	2 U	R	R	R	-	2 U	R	10 U	2 U	2 U	R	2 U	2 U	2 U	R
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	0.02 U	0.03 U	-	-	0.02 U	-	-	-	0.04 U	-	-	-	0.02 U
			SW8321B	-	-	-	-	-	-	0.04 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926S-0113	SW8270D	2 U	2 U	2 U	2 U	-	2.3 U	R	2 U	2 U	5 UJ	2 U	2 U	R	R	R	-	2 U	R	10 U	2 U	2 U	R	2 U	2 U	2 U	R
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	0.02 U	0.03 U	-	-	0.02 U	-	-	-	0.04 U	-	-	-	0.02 U
			SW8321B	-	-	-	-	-	-	0.04 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/16/13	PLF-MW26S-0413	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 UJ	2 U	-	2.3 U	R	2 U	2 U	5 U	2 U	2 U	R	R	R	-	2 U	R	10 U	2 U	2 U	R	2 U	2 U	2 U	R
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	0.02 U	0.03 U	-	-	0.02 U	-	-	-	0.04 U	-	-	-	0.02 U
			SW8321B	-	-	-	-	-	-	0.04 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-26SR	07/24/13	PLF-MW26S-0713	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	2 U	-	2.3 U	R	2 U	2 U	5 U	2 U	2 U	R	R	R	-	2 U	R	10 U	2 UJ	2 U	R	2 U	2 U	2 U	R
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	0.02 U	0.03 U	-	-	0.02 U	-	-	-	0.04 U	-	-	-	0.02 U
			SW8321B	-	-	-	-	-	-	0.04 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926SR-0713	SW8270D	2 U	2 U	2 U	2 U	-	2.3 U	R	2 U	2 U	5 U	2 U	2 U	R	R	R	-	2 U	R	10 U	2 UJ	2 U	2 U	2 U	2 U	2 U	R
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	0.02 U	0.03 U	-	-	0.02 U	-	-	-	-	-	-	-	0.02 U
			SW8321B	-	-	-	-	-	-	0.04 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/23/13	PLF-MW26SR-1013	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	2 U	-	2.3 U	4.5 U	2 U	2 U	5 U	2 U	2 U	R	R	R	-	2 U	R	10 UJ	2 U	2 U	R	2 U	2 U	2 U	R
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	0.02 U	0.03 U	-	-	0.02 U	-	-	-	0.04 U	-	-	-	0.02 U
	01/23/14	PLF-MW26SR-0114	SW8151A	-	-	-	-	-	-	0.04 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	2 U	-	2.3 U	-	2 U	2 U	5 UJ	2 U	2 U	-	-	-	-	2 U	-	10 U	2 U	2 U	-	2 U	2 U	2 U	-
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	0.029 U	0.03 U	-	-	0.021 U	-	-	-	0.04 U	-	-	-	0.02 U
	01/23/14	PLF-MW926SR-0114	SW8270D	2 U	2 U	2 U	2 U	-	2.3 U	-	2 U	2 U	5 UJ	2 U	2 U	-	-	-	-	2 U	-	10 U	2 U	2 U	-	2 U	2 U	2 U	-
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	0.029 U	0.03 U	-	-	0.021 U	-	-	-	0.04 U	-	-	-	0.02 U
			SW8321B	-	-	-	-	-	-	0.04 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	Dibenzo(a,h)anthracene	Dibenzofuran	Diethyl phthalate	Dimethyl phthalate	Di-n-butyl phthalate	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	Di-n-octyl phthalate	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	Hexachlorocyclopentadiene	Hexachloroethane	Indeno(1,2,3-c,d)pyrene	Isophorone	Naphthalene	Nitrobenzene	n-Nitrosodimethylamine	n-Nitrosodi-n-propylamine	n-Nitrosodiphenylamine	Pentachlorophenol	Phenanthrene	Phenol	Pyrene	Pyridine	tert-Amyl methyl ether (TAME)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26S (cont.)	01/26/12	PLF-MW26S-0112	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-
			SW8270	-	2 UJ	2 U	2 U	2 U	2.5 U	2 U	2 U	2 U	-	-	5 U	2 U	-	2 U	2 U	2 U	2 UJ	5 U	2 U	-	2 U	2 U	2 U	5 UJ	-
			SW8270SIM	**0.022**	-	-	-	-	-	-	-	-	0.05 U	-	-	-	**0.026 J**	-	-	-	-	-	-	-	-	-	-	-	-
	04/26/12	PLF-MW26S-0412	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.024 U	-	-	-	-	-
			SW8270	-	2 U	2 U	2 U	2 U	2.5 U	2 U	2 U	2 U	-	-	5 U	2 U	-	2 U	-	2 U	2 U	5 U	2 U	-	2 U	2 U	2 U	5 U	-
			SW8270SIM	0.02 U	-	-	-	-	-	-	-	-	0.05 U	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
	07/24/12	PLF-MW26S-0712	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.024 U	-	-	-	-	-
			SW8270	-	2 U	2 U	2 U	2 U	2.5 U	2 U	2 U	2 U	-	-	5 U	2 U	-	2 U	-	2 U	2 UJ	5 UJ	2 U	-	2 U	2 U	2 U	5 U	-
			SW8270SIM	0.02 U	-	-	-	-	-	-	-	-	0.05 U	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
	07/24/12	PLF-MW926S-0712_FDUP	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.024 U	-	-	-	-	-
			SW8270	-	2 U	2 U	2 U	2 U	2.5 U	2 U	2 U	2 U	-	-	5 U	2 U	-	2 U	2 U	2 U	2 UJ	5 UJ	2 U	-	2 U	2 U	2 U	5 U	-
			SW8270SIM	0.02 U	-	-	-	-	-	-	-	-	0.05 U	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
	10/15/12	PLF-MW26S-1012	SW8270	-	2 U	2 U	2 U	2 U	2.5 U	2 U	2 U	2 U	-	-	5 U	2 U	-	2 U	-	2 U	2 U	5 U	2 U	-	2 U	2 U	2 U	5 U	-
			SW8270SIM	0.02 U	-	-	-	-	-	-	-	-	0.05 U	-	-	-	0.02 U	-	-	-	-	-	-	0.5 U	-	-	-	-	-
	01/30/13	PLF-MW26S-0113	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
			SW8270D	R	2 U	2 U	2 U	2 U	2.5 UJ	2 U	2 U	2 U	R	R	5 U	2 U	R	2 U	R	2 UJ	2 U	5 U	2 U	R	2 U	2 U	2 U	5 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	-	-	0.05 U	-	-	-	0.02 U	-	-	-	-	-	-	R	-	-	-	-	-
			SW8321B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04 U	-	-	-	-	-
		PLF-MW926S-0113	SW8270D	R	2 U	2 U	2 U	2 U	2.5 U	2 U	2 U	2 U	R	2 U	5 U	2 U	R	2 U	2 U	2 U	2 UJ	5 U	2 U	R	2 U	2 U	2 U	5 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	-	-	0.05 U	-	-	-	0.02 U	-	-	-	-	-	-	R	-	-	-	-	-
			SW8321B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04 U	-	-	-	-	-
	04/16/13	PLF-MW26S-0413	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
			SW8270D	R	2 U	2 U	2 U	2 U	2.5 UJ	2 U	2 U	2 U	R	R	5 UJ	2 U	R	2 U	R	2 U	2 U	5 U	2 U	R	2 U	2 U	2 U	5 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	-	-	0.05 U	-	-	-	0.02 U	-	-	-	-	-	-	R	-	-	-	-	-
			SW8321B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04 U	-	-	-	-	-
MW-26SR	07/24/13	PLF-MW26S-0713	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
			SW8270D	R	2 U	2 U	2 U	2 U	2.5 UJ	2 U	2 U	2 U	R	R	5 U	2 U	R	2 U	R	2 U	2 U	5 U	2 U	R	2 U	2 UJ	2 U	5 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	-	-	0.05 U	-	-	-	0.02 U	-	-	-	-	-	-	R	-	-	-	-	-
			SW8321B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04 UJ	-	-	-	-	-
		PLF-MW926SR-0713	SW8270D	R	2 U	2 U	2 U	2 U	2.5 UJ	2 U	2 U	2 U	2 U	R	5 U	2 U	R	2 U	2 U	2 U	2 U	5 U	2 U	R	2 U	2 UJ	2 U	5 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	-	-	0.05 U	-	-	-	0.02 U	-	-	-	-	-	-	R	-	-	-	-	-
			SW8321B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04 UJ	-	-	-	-	-
	10/23/13	PLF-MW26SR-1013	SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
			SW8270D	R	2 U	2 U	2 U	2 U	2.5 U	2 U	2 U	2 U	R	R	5 U	2 U	R	2 U	R	2 U	2 U	5 U	2 U	R	2 U	2 U	2 U	5 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	-	-	0.05 U	-	-	-	0.02 U	-	-	-	-	-	-	0.5 U	-	-	-	-	-
	01/23/14	PLF-MW26SR-0114	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04 U	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
			SW8270D	-	2 U	2 U	2 U	2 U	2.5 UJ	2 U	2 U	2 U	-	-	5 U	2 U	-	2 U	-	2 U	2 U	5 U	2 U	-	2 U	2 U	2 U	5 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	-	-	0.05 U	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
	01/23/14	PLF-MW926SR-0114	SW8270D	-	2 U	2 U	2 U	2 U	2.5 UJ	2 U	2 U	2 U	-	-	5 U	2 U	-	2 U	2 U	2 U	2 U	5 U	2 U	-	2 U	2 U	2 U	5 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	-	-	0.05 U	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
			SW8321B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04 U	-	-	-	-	-

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1-Methylnaphthalene	2,2'-Oxybis (1-chloropropane)	2,2'-Oxybis (2-chloropropane)	2,3,4,6-Tetrachlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dichlorophenol	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylnaphthalene	2-Methylphenol (o-Cresol)	2-Nitroaniline	2-Nitrophenol	3,3'-Dichlorobenzidine	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	3-Methylphenol (m-Cresol)	3-Nitroaniline
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26SR (cont.)	04/22/14	PLF-MW26SR-0414	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	-	-	-	-	2 U	-	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	-	5 U
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	07/22/14	PLF-DUP3-0714	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	1.8 U	0.02 U	-	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	0.02 U	2 U	2 U	2 U	2 U	2 U	-	5 U
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW26SR-0714	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	-	-	-	-	-	-	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	-	2 U	2 U	2 U	2 U	2 U	-	5 U
			SW8270DSIM	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-
	10/21/14	PLF-MW26SR-1014	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	1.8 U	-	-	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	-	2 U	2 U	2 U	-	2 U	-	5 U
			SW8270DSIM	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-
	01/21/15	PLF-DUP3-0115	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	1.8 U	-	-	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	-	2 U	2 U	2 U	-	2 U	-	5 U
			SW8270DSIM	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-
		PLF-MW26SR-0115	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	-	-	-	-	-	-	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	-	2 U	2 U	2 U	-	2 U	-	5 U
			SW8270DSIM	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-
	04/21/15	PLF-MW26SR-0415	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	-	-	2 U	-	-	-	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	-	2 U	2 U	2 U	-	2 U	-	5 U
			SW8270DSIM	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-
	07/16/15	PLF-MW26SR-0715	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	-	-	-	-	-	-	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	-	2 U	2 U	2 U	2 U	2 U	-	5 U
			SW8270DSIM	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-
	07/16/15	PLF-DUP3-0715	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	2 U	-	-	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	-	2 U	2 U	2 U	2 U	2 U	-	5 U
			SW8270DSIM	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-
	10/27/15	PLF-MW26SR-1015	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	-	-	-	-	-	-	-	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	-	2 U	2 U	2 U	2 U	2 U	-	5 U
			SW8270DSIM	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-
	01/28/16	PLF-DUP3-0116	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	1.8 U	-	-	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	-	2 U	2 U	2 U	2 U	2 U	-	5 U
			SW8270DSIM	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-
		PLF-MW26SR-0116	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	-	-	-	-	-	-	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	-	2 U	2 U	2 U	2 U	2 U	-	5 U
			SW8270DSIM	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-
	04/27/16	PLF-MW26SR-0416	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	-	-	-	-	-	-	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	-	2 U	2 U	2 U	2 U	2 U	-	5 U
			SW8270DSIM	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	4-Bromophenyl-phenyl ether	4-Chloro-3-methylphenol	4-Chloroaniline	4-Chlorophenyl phenyl ether	4-Methylphenol (p-Cresol)	4-Nitroaniline	4-Nitrophenol	Acenaphthene	Acenaphthylene	Aniline	Anthracene	Azobenzene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(b,k)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic acid	Benzyl alcohol	bis(2-Chloroethoxy)methane	bis(2-Chloroethyl)ether	bis(2-Ethylhexyl)phthalate	Butylbenzyl phthalate	Carbazole	Chrysene
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26SR (cont.)	04/22/14	PLF-MW26SR-0414	SW8151	-	-	-	-	-	-	0.04 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	2 U	-	2.3 U	-	2 U	2 U	5 U	2 U	2 U	-	-	-	-	2 U	-	10 U	2 U	2 U	-	2 U	2 U	2 U	-
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	0.029 U	0.03 U	-	-	0.021 U	-	-	-	0.04 U	-	-	-	0.02 U
	07/22/14	PLF-DUP3-0714	SW8151	-	-	-	-	-	-	0.04 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	2 U	-	2.3 U	-	0.02 U	0.02 U	5 U	0.02 U	2 U	-	-	-	-	-	-	10 U	2 U	2 U	-	2 U	2 U	2 U	-
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	0.029 U	0.03 U	-	0.02 U	0.021 U	-	-	-	0.04 U	-	-	-	0.02 U
		PLF-MW26SR-0714	SW8151A	-	-	-	-	-	-	0.04 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	2 U	-	2.3 U	-	-	-	5 U	-	2 U	-	-	-	-	-	-	10 U	2 U	2 U	-	2 U	2 U	2 U	-
			SW8270DSIM	-	-	-	-	-	-	-	0.02 U	0.02 U	-	0.02 U	-	0.02 U	0.029 U	0.03 U	-	0.02 U	0.021 U	-	-	-	0.04 U	-	-	-	0.02 U
	10/21/14	PLF-MW26SR-1014	SW8151A	-	-	-	-	-	-	0.08 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	2 U	-	2.3 U	-	-	-	5 U	-	2 U	-	-	-	-	-	-	10 U	2 U	2 U	-	2 U	2 U	2 U	-
			SW8270DSIM	-	-	-	-	-	-	-	0.02 U	0.02 U	-	0.02 U	-	0.02 U	0.029 U	0.03 U	-	0.02 U	0.021 U	-	-	-	0.04 U	-	-	-	0.02 U
	01/21/15	PLF-DUP3-0115	SW8151A	-	-	-	-	-	-	0.08 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	2 U	-	2.3 U	-	-	-	5 U	-	2 U	-	-	-	-	-	-	10 U	2 U	2 U	-	2 U	2 U	2 U	-
			SW8270DSIM	-	-	-	-	-	-	-	0.02 UJ	0.02 U	-	0.02 U	-	0.02 U	0.029 U	0.03 U	-	0.02 U	0.021 U	-	-	-	0.04 U	-	-	-	0.02 U
		PLF-MW26SR-0115	SW8151A	-	-	-	-	-	-	0.08 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	2 U	-	2.3 U	-	-	-	5 U	-	2 U	-	-	-	-	-	-	10 U	2 U	2 U	-	2 U	2 U	2 U	
			SW8270DSIM	-	-	-	-	-	-	-	**0.064 J**	0.02 U	-	0.02 U	-	0.02 U	0.029 U	0.03 U	-	0.02 U	0.021 U	-	-	-	0.04 U	-	-	-	0.02 U
	04/21/15	PLF-MW26SR-0415	SW8151A	-	-	-	-	-	-	0.08 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	2 U	-	2.3 U	-	-	-	5 U	-	2 U	-	-	-	-	-	-	10 U	2 U	2 U	-	2 U	2 U	2 U	-
			SW8270DSIM	-	-	-	-	-	-	-	**0.022**	0.02 U	-	0.02 U	-	0.02 U	0.029 U	0.03 U	-	0.02 U	0.021 U	-	-	-	0.04 U	-	-	-	0.02 U
	07/16/15	PLF-MW26SR-0715	SW8151A	-	-	-	-	-	-	0.04 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	2 U	-	2.3 U	-	-	-	5 U	-	2 U	-	-	-	-	-	-	10 U	2 U	2 U	-	2 U	2 U	2 U	-
			SW8270DSIM	-	-	-	-	-	-	-	0.02 U	0.02 U	-	0.02 U	-	0.02 U	0.029 U	0.03 U	-	0.02 U	0.021 U	-	-	-	0.04 U	-	-	-	0.02 U
	07/16/15	PLF-DUP3-0715	SW8151A	-	-	-	-	-	-	0.04 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	2 U	-	2 U	-	-	-	2 U	-	2 U	-	-	-	-	-	-	10 U	2 U	2 U	-	2 U	2 U	2 U	-
			SW8270DSIM	-	-	-	-	-	-	-	0.02 U	0.02 U	-	0.02 U	-	0.02 U	0.029 U	0.03 U	-	0.02 U	0.021 U	-	-	-	0.04 U	-	-	-	0.02 U
	10/27/15	PLF-MW26SR-1015	SW8151A	-	-	-	-	-	-	0.08 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	2 U	-	2.3 U	-	-	-	5 U	-	2 U	-	-	-	-	-	-	10 U	2 U	2 U	-	2 U	2 U	2 U	-
			SW8270DSIM	-	-	-	-	-	-	-	0.02 U	0.02 U	-	0.02 U	-	0.02 U	0.029 U	0.03 U	-	0.02 U	0.021 U	-	-	-	0.04 U	-	-	-	0.02 U
	01/28/16	PLF-DUP3-0116	SW8151A	-	-	-	-	-	-	0.08 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	2 U	-	2.3 U	-	-	-	5 U	-	2 U	-	-	-	-	-	-	10 U	2 U	2 U	-	2 U	2 U	2 U	-
			SW8270DSIM	-	-	-	-	-	-	-	0.02 U	0.02 U	-	0.02 U	-	0.02 U	0.029 U	0.03 U	-	0.02 U	0.021 U	-	-	-	0.04 U	-	-	-	0.02 U
		PLF-MW26SR-0116	SW8151A	-	-	-	-	-	-	0.08 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	2 U	-	2.3 U	-	-	-	5 U	-	2 U	-	-	-	-	-	-	10 U	2 U	2 U	-	2 U	2 U	2 U	-
			SW8270DSIM	-	-	-	-	-	-	-	0.02 U	0.02 U	-	0.02 U	-	0.02 U	0.029 U	0.03 U	-	0.02 U	0.021 U	-	-	-	0.04 U	-	-	-	0.02 U
	04/27/16	PLF-MW26SR-0416	SW8151A	-	-	-	-	-	-	0.08 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	2 U	-	2.3 U	-	-	-	5 U	-	2 U	-	-	-	-	-	-	10 U	2 U	2 U	-	2 U	2 U	2 U	-
			SW8270DSIM	-	-	-	-	-	-	-	0.02 U	0.02 U	-	0.02 U	-	0.02 U	0.029 U	0.03 U	-	0.02 U	0.021 U	-	-	-	0.04 U	-	-	-	0.02 U

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	Dibenzo(a,h)anthracene	Dibenzofuran	Diethyl phthalate	Dimethyl phthalate	Di-n-butyl phthalate	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	Di-n-octyl phthalate	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	Hexachlorocyclopentadiene	Hexachloroethane	Indeno(1,2,3-c,d)pyrene	Isophorone	Naphthalene	Nitrobenzene	n-Nitrosodimethylamine	n-Nitrosodi-n-propylamine	n-Nitrosodiphenylamine	Pentachlorophenol	Phenanthrene	Phenol	Pyrene	Pyridine	tert-Amyl methyl ether (TAME)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26SR (cont.)	04/22/14	PLF-MW26SR-0414	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08 UJ	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
			SW8270D	-	2 U	2 U	2 U	2 U	2.5 U	2 U	2 U	2 U	-	-	5 U	2 U	-	2 U	-	2 U	2 U	5 U	2 U	-	2 U	2 U	2 U	5 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	-	-	0.05 U	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
	07/22/14	PLF-DUP3-0714	SW8151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08 U	-	-	-	-	-
			SW8270D	-	2 U	2 U	2 U	2 U	2.5 U	2 U	-	-	2 U	2 U	5 U	2 U	-	2 U	-	2 U	2 U	5 U	2 U	-	2 U	2 U	-	5 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	0.02 U	0.02 U	-	-	-	-	0.02 U	-	**0.037**	-	-	-	-	-	-	-	0.02 U	-	-
		PLF-MW26SR-0714	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08 UJ	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
			SW8270D	-	2 U	2 U	2 U	2 U	2.5 U	2 U	-	-	2 U	-	5 U	2 U	-	2 U	-	2 U	2 U	5 U	2 U	-	2 U	2 U	-	5 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	0.02 U	0.02 U	-	-	-	-	0.02 U	-	**0.039**	-	-	-	-	-	-	-	0.02 U	-	-
	10/21/14	PLF-MW26SR-1014	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.16 U	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
			SW8270D	-	2 U	2 U	2 U	2 U	2.5 U	2 U	-	-	2 U	-	5 U	2 U	-	2 U	-	2 U	2 U	5 U	2 U	-	2 U	2 U	-	5 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	0.02 U	0.02 U	-	-	-	-	0.02 U	-	**0.042**	-	-	-	-	-	-	-	0.02 U	-	-
	01/21/15	PLF-DUP3-0115	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08 U	-	-	-	-	-
			SW8270D	-	2 U	2 U	2 U	2 U	2.5 U	2 U	-	-	2 U	2 U	5 U	2 U	-	2 U	-	2 U	2 U	5 U	2 U	-	2 U	2 U	-	5 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	0.02 U	0.02 U	-	-	-	-	0.02 U	-	0.02 U	-	-	-	-	-	-	-	0.02 UJ	-	-
		PLF-MW26SR-0115	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08 U	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
			SW8270D		2 U	2 U	2 U	2 U	2.5 U	2 U			2 U	-	5 U	2 U		2 U		2 U	2 U	5 U	2 U	-	2 U	2 U		5 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	0.02 U	0.02 U	-	-	-	-	0.02 U	-	0.02 U	-	-	-	-	-	-	-	**0.093 J**	-	-
	04/21/15	PLF-MW26SR-0415	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08 U	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
			SW8270D	-	2 U	2 U	2 U	2 U	2.5 U	2 U	-	-	2 U	-	5 U	2 U	-	2 U	-	2 U	2 U	5 U	2 U	-	2 U	2 U	-	5 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	0.02 U	0.02 U	-	-	-	-	0.02 U	-	0.02 U	-	-	-	-	-	-	-	**0.029**	-	-
	07/16/15	PLF-MW26SR-0715	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08 UJ	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
			SW8270D	-	2 U	2 U	2 U	2 U	2.5 U	2 U	-	-	2 U	-	5 U	2 U	-	2 U	-	2 U	2 U	5 U	2 UJ	-	2 U	2 U	-	5 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	0.02 U	0.02 U	-	-	-	-	0.02 U	-	0.02 U	-	-	-	-	-	-	-	0.02 U	-	-
	07/16/15	PLF-DUP3-0715	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08 UJ	-	-	-	-	-
			SW8270D	-	2 U	2 U	2 U	2 U	2 U	2 U	-	-	2 U	2 U	2 U	2 U	-	2 U	-	2 U	2 U	2 U	2 UJ	-	2 U	2 U	-	2 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	0.02 U	0.02 U	-	-	-	-	0.02 U	-	0.02 U	-	-	-	-	-	-	-	0.02 U	-	-
	10/27/15	PLF-MW26SR-1015	SW8151A		-	-	-	-	-	-			-	-	-	-		-		-	-	-	-	0.08 U	-	-		-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
			SW8270D	-	2 U	2 U	2 U	2 U	2.5 U	2 U	-	-	2 U	-	5 U	2 U	-	2 U	-	2 U	2 U	5 U	2 U	-	2 U	2 U	-	5 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	0.02 U	0.02 U	-	-	-	-	0.02 U	-	0.02 U	-	-	-	-	-	-	-	0.02 U	-	-
	01/28/16	PLF-DUP3-0116	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.095 UJ	-	-	-	-	-
			SW8270D	-	2 U	2 U	2 U	2 U	2.5 U	2 U	-	-	2 U	2 U	5 U	2 U	-	2 U	-	2 U	2 U	5 U	2 U	-	2 U	2 U	-	5 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	0.02 U	0.02 U	-	-	-	-	0.02 U	-	0.02 U	-	-	-	-	-	-	-	**0.043 J**	-	-
		PLF-MW26SR-0116	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08 UJ	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
			SW8270D	-	2 U	2 U	2 U	2 U	2.5 U	2 U	-	-	2 U	-	5 U	2 U	-	2 U	-	2 U	2 U	5 U	2 UJ	-	2 U	2 U	-	5 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	0.02 U	0.02 U	-	-	-	-	0.02 U	-	0.02 U	-	-	-	-	-	-	-	0.02 UJ	-	-
	04/27/16	PLF-MW26SR-0416	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08 UB	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
			SW8270D	-	2 U	2 U	2 U	2 U	2.5 U	2 U	-	-	2 U	-	5 U	2 U	-	2 U	-	2 U	2 U	5 U	2 U	-	2 U	2 U	-	5 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	0.02 U	0.02 U	-	-	-	-	0.02 U	-	0.02 U	-	-	-	-	-	-	-	0.02 U	-	-

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1-Methylnaphthalene	2,2'-Oxybis (1-chloropropane)	2,2'-Oxybis (2-chloropropane)	2,3,4,6-Tetrachlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dichlorophenol	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Chlorophenol	2-Methylnaphthalene	2-Methylphenol (o-Cresol)	2-Nitroaniline	2-Nitrophenol	3,3'-Dichlorobenzidine	3-Methylphenol & 4-Methylphenol (m&p-Cresol)	3-Methylphenol (m-Cresol)	3-Nitroaniline
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26SR (cont.)	07/19/16	PLF-DUP3-0716	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	1.8 U	-	-	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	-	2 U	2 U	2 U	2 U	2 U	-	5 U
			SW8270DSIM	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-
		PLF-MW26SR-0716	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	-	-	-	-	-	-	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	-	2 U	2 U	2 U	2 U	2 U	-	5 U
			SW8270DSIM	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-
	10/20/16	PLF-MW26SR-1016	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	1.8 U	2 U	-	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	-	5 U
			SW8270DSIM	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-
EE-4	02/12/93	PLF-GW-050	SW8270	10 U	10 U	10 U	10 U	-	10 U	-	-	10 U	10 U	10 U	10 U	49 U	10 U	-	10 U	10 U	10 U	10 U	10 U	49 U	10 U	19 U	-	-	49 U
	06/03/95	PLF-EE4-0695	SW8270	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U	-	-	0.093 U	0.093 U	0.093 U	0.093 U	0.47 U	0.093 U	-	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.47 U	0.093 U	0.093 U	-	-	0.093 U
	09/23/95	PLF-EE4-0995	SW8270	0.1 U	0.1 U	0.1 U	0.1 U	-	0.1 U	-	-	0.1 U	0.1 U	0.1 U	0.1 U	0.5 UJ	0.1 UJ	-	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	-	-	0.5 U
	12/05/95	PLF-EE4-1295	SW8270	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U	-	-	0.093 UJ	0.093 U	0.093 U	0.093 U	0.47 UJ	0.093 U	-	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.47 U	0.093 U	0.093 UJ	-	-	0.47 U
	03/23/96	PLF-EE4-0396	SW8270	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U	-	-	0.093 U	0.093 U	0.093 U	0.093 U	0.47 U	0.093 U	-	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.47 U	0.093 U	0.093 U	-	-	0.47 U
EE-5	02/12/93	PLF-GW-051	SW8270	10 U	10 U	10 U	10 U	-	10 U	-	-	10 U	10 U	10 U	10 U	48 U	10 U	-	10 U	10 U	10 U	10 U	10 U	48 U	10 U	19 U	-	-	48 U
	06/03/95	PLF-EE5-0695	SW8270	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U	-	-	0.093 U	0.093 U	0.093 U	0.093 U	0.47 U	0.093 U	-	**0.13**	0.093 U	0.093 U	0.093 U	0.093 U	0.47 U	0.093 U	0.093 U	-	-	0.093 U
	09/23/95	PLF-EE5-0995	SW8270	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U	-	-	0.093 U	0.093 U	0.093 U	0.093 U	0.46 U	0.093 U	-	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.46 U	0.093 U	0.093 U	-	-	0.46 U
		PLF-EE95-0995_FDUP	SW8270	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U	-	-	0.093 U	0.093 U	0.093 U	0.093 U	0.47 UJ	0.093 U	-	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.47 U	0.093 U	0.093 U	-	-	0.47 U
	12/05/95	PLF-EE5-1295	SW8270	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U	-	-	0.093 UJ	0.093 U	0.093 U	0.093 U	0.47 UJ	0.093 U	-	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.47 U	0.093 U	0.093 UJ	-	-	0.47 U
	03/23/96	PLF-EE5-0396	SW8270	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U	-	-	0.093 U	0.093 U	0.093 U	0.093 U	0.47 U	0.093 U	-	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.47 U	0.093 U	0.093 U	-	-	0.47 U

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	4-Bromophenyl-phenyl ether	4-Chloro-3-methylphenol	4-Chloroaniline	4-Chlorophenyl phenyl ether	4-Methylphenol (p-Cresol)	4-Nitroaniline	4-Nitrophenol	Acenaphthene	Acenaphthylene	Aniline	Anthracene	Azobenzene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(b,k)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic acid	Benzyl alcohol	bis(2-Chloroethoxy)methane	bis(2-Chloroethyl)ether	bis(2-Ethylhexyl)phthalate	Butylbenzyl phthalate	Carbazole	Chrysene
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26SR (cont.)	07/19/16	PLF-DUP3-0716	SW8151A	-	-	-	-	-	-	0.04 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	2 U	-	2.3 U	-	-	-	5 U	-	2 U	-	-	-	-	-	-	10 U	2 U	2 U	-	2 U	2 U	2 U	-
			SW8270DSIM	-	-	-	-	-	-	-	0.02 U	0.02 U	-	0.02 U	-	0.02 U	0.029 U	0.03 U	-	0.02 U	0.021 U	-	-	-	0.04 U	-	-	-	0.02 U
		PLF-MW26SR-0716	SW8151A	-	-	-	-	-	-	0.04 UJ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	2 U	-	2.3 U	-	-	-	5 U	-	2 U	-	-	-	-	-	-	10 U	2 U	2 U	-	2 U	2 U	2 U	
			SW8270DSIM	-	-	-	-	-	-	-	0.02 U	0.02 U	-	0.02 U	-	0.02 U	0.029 U	0.03 U	-	0.02 U	0.021 U	-	-	-	0.04 U	-	-	-	0.02 U
	10/20/16	PLF-MW26SR-1016	SW8151A	-	-	-	-	-	-	0.08 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270D	2 U	2 U	2 U	2 U	-	2.3 U	4.5 U	2 U	2 U	5 U	2 U	2 U	2 U	2 U	2 U	-	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
			SW8270DSIM	-	-	-	-	-	-	-	0.02 U	0.02 U	-	**0.02**	-	0.02 U	0.029 U	0.03 U	-	0.02 U	0.021 U	-	-	-	0.04 U	-	-	-	0.02 U
EE-4	02/12/93	PLF-GW-050	SW8270	10 U	19 U	19 U	10 U	10 U	49 U	49 U	10 U	10 U	-	10 U	-	10 U	10 U	10 U	-	10 U	10 U	49 U	19 U	10 U	10 U	10 U	**14**	-	10 U
	06/03/95	PLF-EE4-0695	SW8270	0.093 U	0.19 U	0.19 U	0.093 U	0.093 U	0.47 U	0.47 U	0.093 U	0.093 U	-	0.093 U	-	0.093 U	0.093 U	0.093 U	-	0.093 U	0.093 U	0.47 U	0.19 U	0.093 U	0.093 U	0.093 U	**0.05**	-	0.093 U
	09/23/95	PLF-EE4-0995	SW8270	0.1 U	0.2 U	0.2 U	0.1 U	0.1 U	0.5 U	0.5 U	0.1 U	0.1 U	-	0.1 U	-	0.1 U	0.1 U	0.1 U	-	0.1 U	0.1 U	0.5 UJ	0.2 U	0.1 U	0.1 U	0.16 U	**0.053**	-	0.1 U
	12/05/95	PLF-EE4-1295	SW8270	0.093 UJ	0.19 U	0.19 UJ	0.093 U	0.093 UJ	0.47 U	0.47 UJ	0.093 U	0.093 U	-	0.093 U	-	0.093 U	0.093 U	0.093 U	-	0.093 U	0.093 U	0.47 UJ	0.19 U	0.093 U	0.093 UJ	0.18 U	0.093 U	-	0.093 U
	03/23/96	PLF-EE4-0396	SW8270	0.093 U	0.19 U	0.19 U	0.093 U	0.093 U	0.47 U	0.47 U	0.093 U	0.093 U	-	0.093 U	-	0.093 U	0.093 U	0.093 U	-	0.093 U	0.093 U	0.47 U	0.19 U	0.093 U	0.093 U	0.093 U	0.097 U	-	0.093 U
EE-5	02/12/93	PLF-GW-051	SW8270	10 U	19 U	19 U	10 U	10 U	48 U	48 U	10 U	10 U	-	10 U	-	10 U	10 U	10 U	-	10 U	10 U	48 U	19 U	10 U	10 U	10 U	**5 J**	-	10 U
	06/03/95	PLF-EE5-0695	SW8270	0.093 U	0.19 U	0.19 U	0.093 U	0.093 U	0.47 U	0.47 U	0.093 U	0.093 U	-	0.093 U	-	0.093 U	0.093 U	0.093 U	-	0.093 U	0.093 U	0.47 U	0.19 U	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U
	09/23/95	PLF-EE5-0995	SW8270	0.093 U	0.19 U	0.19 U	0.093 U	0.093 U	0.46 U	0.46 UJ	0.093 U	0.093 U	-	0.093 U	-	0.093 U	0.093 U	0.093 U	-	0.093 U	0.093 U	0.46 UJ	0.19 U	0.093 U	0.093 U	0.18 U	0.093 U	-	0.093 U
		PLF-EE95-0995_FDUP	SW8270	0.093 U	0.19 U	0.19 U	0.093 U	0.093 U	0.47 U	0.47 U	0.093 U	0.093 U	-	0.093 U	-	0.093 U	0.093 U	0.093 U	-	0.093 U	0.093 U	0.47 UJ	0.19 U	0.093 U	0.093 U	0.25 U	0.093 U	-	0.093 U
	12/05/95	PLF-EE5-1295	SW8270	0.093 UJ	0.19 U	0.19 UJ	0.093 U	0.093 UJ	0.47 U	0.47 UJ	0.093 U	0.093 U	-	0.093 U	-	0.093 U	0.093 U	0.093 U	-	0.093 U	0.093 U	0.47 UJ	0.19 U	0.093 U	0.093 UJ	0.1 U	0.093 U	-	0.093 U
	03/23/96	PLF-EE5-0396	SW8270	0.093 U	0.19 U	0.19 U	0.093 U	0.093 U	0.47 U	0.47 U	0.093 U	0.093 U	-	0.093 U	-	0.093 U	0.093 U	0.093 U	-	0.093 U	0.093 U	0.47 U	**0.034**	0.093 U	0.093 U	0.17 U	0.34 U	-	0.093 U

Table O-8
Pasco Landfill Zone B Groundwater Sample Results
Semi-Volatile Organic Compounds

Location	Date	Sample ID	Method	Dibenzo(a,h)anthracene	Dibenzofuran	Diethyl phthalate	Dimethyl phthalate	Di-n-butyl phthalate	Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	Di-n-octyl phthalate	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	Hexachlorocyclopentadiene	Hexachloroethane	Indeno(1,2,3-c,d)pyrene	Isophorone	Naphthalene	Nitrobenzene	n-Nitrosodimethylamine	n-Nitrosodi-n-propylamine	n-Nitrosodiphenylamine	Pentachlorophenol	Phenanthrene	Phenol	Pyrene	Pyridine	tert-Amyl methyl ether (TAME)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26SR (cont.)	07/19/16	PLF-DUP3-0716	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08 UJ	-	-	-	-	-
			SW8270D	-	2 U	2 U	2 U	2 U	2.5 U	2 U	-	-	2 U	2 U	5 U	2 U	-	2 U	-	2 U	2 U	5 U	2 U	-	2 U	2 U	-	5 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	0.02 U	0.02 U	-	-	-	-	0.02 U	-	0.02 U	-	-	-	-	-	-	-	0.02 U	-	-
		PLF-MW26SR-0716	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08 UJ	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
			SW8270D		2 U	2 U	2 U	2 U	2.5 U	2 U			2 U	-	5 U	2 U		2 U		2 U	2 U	5 U	2 U	-	2 U	2 U		5 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	0.02 U	0.02 U	-	-	-	-	0.02 U	-	0.02 U	-	-	-	-	-	-	-	0.02 U	-	-
	10/20/16	PLF-MW26SR-1016	SW8151A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08 U	-	-	-	-	-
			SW8260C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 U
			SW8270D	2 U	2 U	2 U	2 U	2 U	2.5 U	2 U	2 U	2 U	2 U	2 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	5 U	2 U	5 U	2 U	2 U	2 U	5 U	-
			SW8270DSIM	0.02 U	-	-	-	-	-	-	0.02 U	**0.025**	-	-	-	-	0.02 U	-	0.02 U	-	-	-	-	0.5 U	-	-	0.02 U	-	-
EE-4	02/12/93	PLF-GW-050	SW8270	10 U	10 U	10 U	10 U	**33**	49 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	49 U	10 U	10 U	10 U	-	-
	06/03/95	PLF-EE4-0695	SW8270	0.093 U	0.093 U	0.093 U	0.093 U	0.36 U	0.47 U	0.093 U	0.093 U	0.093 U	0.09 R	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U	0.093 U	0.47 U	0.093 U	0.093 U	0.093 U	-	-
	09/23/95	PLF-EE4-0995	SW8270	0.1 U	0.1 U	0.1 U	0.1 U	0.57 U	0.5 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	-	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	-	-
	12/05/95	PLF-EE4-1295	SW8270	0.093 U	0.093 U	0.093 U	0.093 U	**12**	0.47 UJ	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U	0.093 U	0.47 U	0.093 U	0.093 U	0.093 U	-	-
	03/23/96	PLF-EE4-0396	SW8270	0.093 U	0.093 U	0.093 U	0.093 U	0.2 U	0.47 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	**0.036**	0.093 U	-	0.093 U	0.093 U	0.47 U	0.093 U	0.093 U	0.093 U	-	-
EE-5	02/12/93	PLF-GW-051	SW8270	10 U	10 U	10 U	10 U	**53**	48 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	-	10 U	10 U	48 U	10 U	10 U	10 U	-	-
	06/03/95	PLF-EE5-0695	SW8270	0.093 U	0.093 U	0.093 U	0.093 U	0.2 U	0.47 U	0.093 U	0.093 U	0.093 U	0.09 R	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U	0.093 U	0.47 U	0.093 U	0.093 U	0.093 U	-	-
	09/23/95	PLF-EE5-0995	SW8270	0.093 U	0.093 U	0.093 U	0.093 U	0.14 U	0.46 UJ	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U	0.093 U	0.46 U	0.093 U	0.093 U	0.093 U	-	-
		PLF-EE95-0995_FDUP	SW8270	0.093 U	0.093 U	0.093 U	0.093 UJ	0.75 U	0.47 UJ	**0.18**	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U	0.093 U	0.47 U	0.093 U	0.093 U	0.093 U	-	-
	12/05/95	PLF-EE5-1295	SW8270	0.093 U	0.093 U	0.093 U	0.093 U	**8.7**	0.47 UJ	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U	0.093 U	0.47 U	0.093 U	0.093 U	0.093 U	-	-
	03/23/96	PLF-EE5-0396	SW8270	0.093 U	0.093 U	0.093 U	0.093 U	2 U	0.47 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	-	0.093 U	0.093 U	0.47 U	0.093 U	**0.072**	0.093 U	-	-

Notes:
µg/L = micrograms per liter
Bold indicates detetected concentration.
- = not tested
U = Analyte was not detected above the reported sample quantitation limit.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R = The result was rejected

Table O-9
Pasco Landfill Zone B Groundwater Sample Results
Volatile Organic Compounds

Location	Date	Sample ID	Method	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloroethene, cis-	1,2-Dichloroethene, trans-	1,2-Dichloropropane	1,3,5-Trimethylbenzene (Mesitylene)	1,3-Dichlorobenzene	1,3-Dichloropropane	1,3-Dichloropropene, cis-	1,3-Dichloropropene, trans-	1,4-Dichloro-2-butene, trans-	1,4-Dichlorobenzene	2,2-Dichloropropane
		Groundwater Cleanup Levels			200		--	--	0.057	--							0.38		16		--								
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-25S	05/31/95	PLF-MW25S-0695	SW8260	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	**0.15**	-	-	R	-	-	R	0.1 U	**0.35**	-	0.1 U	0.1 U	0.1 U	-	0.1 U	-	0.1 U	0.1 U	-	0.1 U	-
	09/22/95	PLF-MW25S-0995	SW8260	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.07 U	-	-	0.1 U	-	-	0.5 UJ	0.1 UJ	0.1 U	-	0.1 UJ	0.1 U	0.1 U	-	0.1 UJ	-	0.1 U	0.1 U	0.5 UJ	0.1 UJ	-
	12/05/95	PLF-MW25S-1295	SW8260	0.05 U	0.05 U	0.05 U	0.05 UJ	5 U	0.05 U	-	-	0.05 U	-	-	5 UJ	0.05 U	0.05 U	-	5 U	0.05 U	0.05 U	-	-	-	5 U	0.05 U	0.05 U	0.05 U	-
	03/23/96	PLF-MW25S-0396	SW8260	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	0.07 U	-	-	0.1 U	-	-	0.5 UJ	0.1 U	0.1 U	-	0.1 U	0.1 U	0.1 U	-	0.1 U	-	0.1 U	0.1 U	0.5 U	0.1 U	-
	07/26/96	PLF-MW25S-0796	SW8260	2 U	0.7 U	0.07 U	0.5 U	0.7 U	0.01 U	-	-	0.7 U	-	-	0.5 U	0.5 UJ	0.5 U	-	0.4 UJ	0.7 U	0.5 U	-	-	-	0.4 U	0.3 U	2 U	0.4 UJ	-
	09/18/96	PLF-MW25S-0996	SW8260	2 U	0.7 U	0.07 U	0.5 U	0.7 U	0.01 U	-	-	0.7 U	-	-	0.5 U	0.5 U	0.5 U	-	0.4 U	0.7 U	0.5 U	-	-	-	0.4 U	0.3 U	2 U	0.4 U	-
	12/05/96	PLF-MW25S-1296	SW8260	2 U	0.7 U	0.07 U	0.5 U	0.7 U	0.01 U	-	-	0.7 U	-	-	0.5 U	0.5 U	0.5 U	-	0.4 U	0.7 U	0.5 U	-	-	-	0.4 U	0.3 U	2 U	0.4 U	-
	02/28/97	PLF-MW25S-0297	SW8260	2 U	0.7 U	0.07 U	0.5 U	0.7 U	0.01 U	-	-	0.7 U	-	-	0.5 U	0.5 U	0.5 U	-	0.4 U	0.7 U	0.5 U	-	-	-	0.4 U	0.3 U	2 UJ	0.4 U	-
	06/20/97	PLF-MW25S-0697	SW8260	2 U	0.7 U	0.07 U	0.5 U	0.7 U	0.01 U	-	-	0.7 U	-	-	0.5 UJ	0.5 U	0.5 U	-	0.4 UJ	0.7 U	0.5 U	-	-	-	0.4 U	0.3 U	2 UJ	0.4 U	-
	09/26/97	PLF-MW25S-0997	SW8260	2 U	0.7 U	0.07 U	0.5 U	0.7 U	0.01 U	-	-	0.7 U	-	-	0.5 U	0.5 U	0.5 U	-	0.4 U	0.7 U	0.5 U	-	-	-	0.4 U	0.3 U	2 U	0.4 U	-
			UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12/05/97	PLF-MW25S-1297	SW8260	2 U	0.7 U	0.07 U	0.5 U	0.7 U	0.01 U	-	-	0.7 U	-	-	0.5 U	0.5 U	0.5 U	-	0.4 U	0.7 U	0.5 U	-	-	-	0.4 U	0.3 U	2 U	0.4 U	-
	03/06/98	PLF-MW25S-0398	SW8260	2 U	0.7 U	0.07 U	0.5 U	0.7 U	0.01 U	-	-	0.7 U	-	-	5 U	0.5 U	0.5 U	-	0.4 U	0.7 U	0.5 U	-	-	-	0.4 U	0.3 U	2 U	0.4 U	-
	06/08/98	PLF-MW25S-0698	SW8260	1 U	1 U	0.02 U	1 U	1 U	0.01 U	1 U	1 U	1 U	1 U	1 U	0.05 UJ	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
	09/11/98	PLF-MW25S-0998	SW8260	1 U	1 U	0.05 UJ	1 U	1 U	0.01 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	-
	12/09/98	PLF-MW25S-1298	SW8260	1 U	1 U	0.05 U	1 U	1 U	0.01 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 UJ	1 U	-
	03/12/99	PLF-MW25S-0399	SW8260	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
	06/11/99	PLF-MW25S-0699	SW8260	0.198 U	0.159 U	0.05 U	0.192 U	0.127 U	0.01 U	0.157 U	0.234 U	0.418 U	-	0.369 U	0.347 U	-	0.123 U	-	0.221 U	0.225 U	0.183 U	0.139 U	-	0.195 U	0.156 U	0.069 U	-	-	-
	09/17/99	PLF-MW25S-0999	SW8260	1 U	1 UJ	0.05 U	1 U	1 UJ	0.01 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
	12/17/99	PLF-MW25S-1299	SW8260	1 U	1 U	0.05 U	1 U	1 U	0.01 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
	03/10/00	PLF-MW25S-0300	SW8260	1 U	1 U	0.05 U	1 U	1 U	0.01 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	-
	06/15/00	PLF-MW25S-0600	SW8260	1 UJ	1 UJ	0.05 U	1 UJ	1 UJ	0.01 U	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	5 UJ	1 UJ	1 UJ	-	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	5 UJ	1 UJ	-
	09/11/00	PLF-MW25S-0900	SW8260	1 U	1 U	0.05 U	1 U	1 U	0.01 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
	11/17/00	PLF-MW25S-1100	SW8260	1 U	1 U	0.05 U	1 U	1 U	0.01 U	1 U	1 U	1 U	1 UJ	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	5 U	1 U	-
	03/16/01	PLF-MW25S-0301	SW8260	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	5 U	-	1 U	-	1 U	1 U	1 U	1 U	-	1 U	1 U	1 U	5 U	-	-
	06/08/01	PLF-MW25S-0601	SW8260	1 U	1 U	0.1 U	1 U	1 U	0.05 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
	09/12/01	PLF-MW25S-0901	SW8260	1 U	1 U	0.1 U	1 U	1 U	0.05 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
	12/14/01	PLF-MW25S-1201	SW8260	1 U	1 U	0.1 U	1 U	1 U	0.05 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
	03/28/02	PLF-MW25S-0302	SW8260	1 U	1 U	0.1 U	1 U	1 U	0.05 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
	06/13/02	PLF-MW25S-0602	SW8260	1 U	1 U	0.1 UJ	1 U	1 U	0.05 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
	09/12/02	PLF-MW25S-0902	SW8260	1 U	1 U	0.1 U	1 U	1 U	0.05 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
	12/17/02	PLF-MW-25S-1202	SW8260	1 U	1 U	0.1 U	1 U	1 U	0.05 U	1 U	1 UJ	1 U	1 UJ	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
	01/23/03	PLF-MW25S-0103	SW8260B	1 U	1 U	-	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
			SW8260BM	-	-	0.1 U	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/03/03	PLF-MW25S-0403	SW8260B	1 U	1 U	-	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	5 UJ	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
			SW8260BM	-	-	0.1 UJ	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	07/25/03	PLF-MW25S-0703	SW8260B	1 U	1 U	-	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
			SW8260BM	-	-	0.1 U	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/10/03	PLF-MW25S-1003	SW8260B	1 U	1 U	-	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
			SW8260BM	-	-	0.1 U	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	01/28/04	PLF-MW25S-0104	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 UJ	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
		PLF-MW-925S-0104_FDUP	SW8260	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
	04/21/04	PLF-MW25S-0404	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
			SW8260SIM	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	07/13/04	PLF-MW25S-0704	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
	10/13/04	PLF-MW25S-1004	SW8260	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	R	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	5 UJ	1 UJ	1 UJ	-	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	-	1 UJ	1 UJ
	04/26/12	PLF-MW25S-0412	SW8260B	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260BSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.023 U	-	-	0.1 U	-	0.014 U	-	-	-	-	-	-	-	-	-	-	-	-
	10/15/12	PLF-MW25S-1012	SW8260B	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U

Table O-9
Pasco Landfill Zone B Groundwater Sample Results
Volatile Organic Compounds

Location	Date	Sample ID	Method	2-Chlorotoluene	2-Hexanone (Methyl butyl ketone)	4-Chlorotoluene	4-Methyl-2-pentanone (Methyl isobutyl ketone)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform (Tribromomethane)	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride (Tetrachloromethane)	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Cymene, p- (4-Isopropyltoluene)	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane	Dichloromethane (Methylene chloride)	Diisopropylether (Isopropyl Ether)	Ethanol
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
		Groundwater Cleanup Levels			--		--	--			**0.79**						--		--	--	--						**5**		
Location	**Date**	**Sample ID**	**Method**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-25S	05/31/95	PLF-MW25S-0695	SW8260	-	0.1 U	-	R	**0.75**	-	R	**0.18**	-	0.1 U	0.1 U	0.1 U	0.1 U	**0.028**	0.1 U	**0.23**	**0.49**	**0.022**	**0.59**	-	0.1 U	0.1 U	-	**0.5**	-	-
	09/22/95	PLF-MW25S-0995	SW8260	-	0.5 UJ	-	R	0.5 UJ	-	0.5 U	0.1 UJ	-	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 UJ	0.1 U	0.1 U	-	0.1 U	0.1 U	-	0.1 UJ	-	-
	12/05/95	PLF-MW25S-1295	SW8260	-	5 UJ	-	5 U	5 U	-	5 U	0.05 U	-	5 U	0.05 U	0.05 U	0.1 U	0.05 U	0.05 U	0.05 U	0.1 UJ	0.05 U	0.1 UJ	-	0.05 U	0.05 U	-	0.05 UJ	-	-
	03/23/96	PLF-MW25S-0396	SW8260	-	R	-	R	R	-	R	0.1 U	-	0.1 U	0.1 U	0.1 U	0.1 U	**0.024**	0.1 U	0.1 U	R	0.1 U	0.1 U	-	0.1 U	0.1 U	-	0.1 U	-	-
	07/26/96	PLF-MW25S-0796	SW8260	-	3 U	-	2 U	6 U	-	4 U	0.5 U	-	0.9 U	0.5 U	0.4 U	3 U	1 U	0.02 UJ	0.5 U	4 U	0.6 U	1 U	-	0.4 U	0.9 U	-	0.9 U	-	-
	09/18/96	PLF-MW25S-0996	SW8260	-	3 UJ	-	2 UJ	6 UJ	-	4 UJ	0.5 U	-	0.9 U	0.5 U	0.4 U	3 U	1 U	0.02 U	0.5 U	4 U	0.6 U	1 U	-	0.4 U	0.9 U	-	2.8 UJ	-	-
	12/05/96	PLF-MW25S-1296	SW8260	-	3 U	-	2 U	6 UJ	-	4 U	0.5 U	-	0.9 U	0.5 U	0.4 U	3 U	1 U	0.02 UJ	0.5 U	4 U	0.6 U	1 U	-	0.4 U	0.9 U	-	0.91 U	-	-
	02/28/97	PLF-MW25S-0297	SW8260	-	3 U	-	2 U	6 U	-	4 U	0.5 U	-	0.9 U	0.5 U	0.4 U	3 U	1 U	0.02 UJ	0.5 U	4 U	0.6 U	1 U	-	0.4 U	0.9 U	-	0.91 U	-	-
	06/20/97	PLF-MW25S-0697	SW8260	-	3 U	-	2 U	6 UJ	-	4 U	0.5 U	-	0.9 U	0.5 U	0.4 U	3 U	1 U	0.02 U	0.5 U	4 U	0.6 U	1 U	-	0.4 U	0.9 U	-	0.9 U	-	-
	09/26/97	PLF-MW25S-0997	SW8260	-	3 U	-	2 U	6 U	-	4 U	0.5 U	-	0.9 U	0.5 U	0.4 U	3 U	1 U	0.02 U	0.5 U	4 U	0.6 U	1 U	-	0.4 U	0.9 U	-	0.91 U	-	-
			UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12/05/97	PLF-MW25S-1297	SW8260	-	3 U	-	2 U	6 UJ	-	4 U	0.5 U	-	0.9 U	0.5 U	0.4 U	3 U	1 U	0.02 U	0.5 U	4 U	0.6 U	1 U	-	0.4 U	0.9 U	-	0.91 U	-	-
	03/06/98	PLF-MW25S-0398	SW8260	-	3 U	-	2 U	6 UJ	-	4 U	0.5 U	-	0.9 U	0.5 U	0.4 U	3 U	1 U	0.02 U	0.5 U	4 U	0.6 U	1 U	-	0.4 U	0.9 U	-	0.91 U	-	-
	06/08/98	PLF-MW25S-0698	SW8260	1 U	10 U	1 U	10 U	10 U	-	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.02 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	**1.38**	-	-
	09/11/98	PLF-MW25S-0998	SW8260	1 U	10 U	1 U	10 U	10 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.02 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 UJ	-	-
	12/09/98	PLF-MW25S-1298	SW8260	1 U	10 U	1 U	10 U	10 UJ	5 UJ	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.02 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	5 UJ	-	-
	03/12/99	PLF-MW25S-0399	SW8260	1 U	10 U	1 U	10 UJ	10 U	5 U	-	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	-	-
	06/11/99	PLF-MW25S-0699	SW8260	0.217 U	2.83 U	0.165 U	2.04 U	5.59 U	-	-	0.094 U	0.112 U	0.117 U	0.088 U	0.208 UJ	0.364 U	**0.675**	0.02 U	0.07 U	0.295 U	0.212 U	2.35 UJ	0.137 U	0.073 U	0.244 U	0.256 U	0.808 U	-	-
	09/17/99	PLF-MW25S-0999	SW8260	1 U	10 U	1 U	10 U	10 U	5 U	-	1 U	1 U	1 UJ	1 U	1 U	1 UJ	1 U	0.02 U	1 U	1 UJ	1 U	5 UJ	1 U	1 U	1 U	1 UJ	5 U	-	-
	12/17/99	PLF-MW25S-1299	SW8260	1 U	10 U	1 U	10 U	10 U	5 UJ	-	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	0.02 U	1 U	1 UJ	1 U	5 U	1 U	1 U	1 U	1 UJ	5 U	-	-
	03/10/00	PLF-MW25S-0300	SW8260	1 U	10 U	1 U	10 U	10 U	10 U	-	1 U	1 U	1 U	1 U	1 U	R	1 U	0.02 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
	06/15/00	PLF-MW25S-0600	SW8260	1 UJ	10 UJ	1 UJ	10 UJ	10 UJ	5 UJ	-	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	0.02 U	1 UJ	1 UJ	1 UJ	5 UJ	1 UJ	1 UJ	1 UJ	1 UJ	5 UJ	-	-
	09/11/00	PLF-MW25S-0900	SW8260	1 U	10 U	1 U	10 U	10 U	25 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.02 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
	11/17/00	PLF-MW25S-1100	SW8260	1 U	10 UJ	1 U	10 U	10 U	5 U	-	1 U	1 U	1 U	1 UJ	1 U	1 UJ	1 U	0.02 UJ	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 UJ	5 U	-	-
	03/16/01	PLF-MW25S-0301	SW8260	1 U	10 U	1 U	10 U	10 U	5 U	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	**15.4**	-	-
	06/08/01	PLF-MW25S-0601	SW8260	1 U	10 U	1 U	10 U	10 U	5 U	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	0.02 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	**12.9**	-	-
	09/12/01	PLF-MW25S-0901	SW8260	1 U	10 U	1 U	10 U	10 U	5 U	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	0.02 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
	12/14/01	PLF-MW25S-1201	SW8260	1 U	10 U	1 U	10 U	10 U	5 U	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	0.02 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
	03/28/02	PLF-MW25S-0302	SW8260	1 U	10 U	1 U	10 U	10 U	5 U	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	0.05 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 UJ	-	-
	06/13/02	PLF-MW25S-0602	SW8260	1 U	10 UJ	1 U	10 U	10 U	5 U	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	0.05 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 UJ	5 U	-	-
	09/12/02	PLF-MW25S-0902	SW8260	1 U	10 U	1 U	10 U	10 U	5 U	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	0.05 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
	12/17/02	PLF-MW-25S-1202	SW8260	1 U	10 UJ	1 U	10 U	10 UJ	R	-	1 U	1 U	1 UJ	1 U	1 UJ	2 U	1 U	0.05 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
	01/23/03	PLF-MW25S-0103	SW8260B	1 U	10 U	1 U	10 U	10 U	R	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	-	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-
	04/03/03	PLF-MW25S-0403	SW8260B	1 U	10 U	1 U	10 U	10 UJ	R	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	-	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-
	07/25/03	PLF-MW25S-0703	SW8260B	1 U	10 U	1 U	10 U	10 U	R	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	-	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-
	10/10/03	PLF-MW25S-1003	SW8260B	1 U	10 U	1 U	10 U	10 U	R	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	-	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-
	01/28/04	PLF-MW25S-0104	SW8260	1 U	10 U	1 U	10 U	10 U	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 U	-	-
		PLF-MW-925S-0104_FDUP	SW8260	1 U	10 U	1 U	10 U	10 U	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 U	-	-
	04/21/04	PLF-MW25S-0404	SW8260	1 U	10 U	1 U	10 U	10 U	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 U	-	-
			SW8260SIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	07/13/04	PLF-MW25S-0704	SW8260	1 U	10 U	1 U	10 U	10 U	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 U	-	-
	10/13/04	PLF-MW25S-1004	SW8260	1 UJ	10 UJ	1 UJ	10 UJ	10 UJ	-	-	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	2 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	5 UJ	1 UJ	1 UJ	1 UJ	-	5 UJ	-	-
	04/26/12	PLF-MW25S-0412	SW8260B	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260BSIM	-	-	-	-	-	-	-	0.028 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/15/12	PLF-MW25S-1012	SW8260B	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U

Table O-9
Pasco Landfill Zone B Groundwater Sample Results
Volatile Organic Compounds

Location	Date	Sample ID	Method	Ethyl tert-butyl ether (ETBE)	Ethylbenzene	Ethylene dibromide (1,2-Dibromoethane)	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	Isopropylbenzene (Cumene)	m,p-Xylene	Methyl ethyl ketone (2-Butanone)	Methyl iodide (Iodomethane)	Methyl tert-butyl ether (MTBE)	m-Xylene	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Amyl methyl ether (TAME)	tert-Butyl alcohol (2-Methyl-2-propanol)	tert-Butylbenzene	Tetrachloroethene (PCE)	Toluene	Total xylene (reported, not calculated)	Trichloroethene (TCE)	Trichlorofluoromethane (Fluorotrichloromethane)	Vinyl acetate	Vinyl chloride
			Groundwater Cleanup Levels							--													0.69	615		2.5	--		0.069
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-25S	05/31/95	PLF-MW25S-0695	SW8260	-	0.1 U	0.1 U	-	-	-	**0.21**	0.1 U	-	-	-	-	-	0.1 U	-	0.1 U	-	-	-	0.1 U	**0.23**	0.1 U	**0.19**	0.1 U	0.1 U	0.02 U
	09/22/95	PLF-MW25S-0995	SW8260	-	0.1 UJ	0.1 U	-	-	-	0.5 UJ	0.1 U	-	-	-	-	-	0.1 UJ	-	0.1 UJ	-	-	-	0.1 U	0.1 UJ	0.1 UJ	0.1 U	**0.087**	0.1 U	0.02 U
	12/05/95	PLF-MW25S-1295	SW8260	-	0.05 U	0.05 U	-	-	-	5.3 UJ	0.05 UJ	-	-	-	-	-	0.05 U	-	0.05 U	-	-	-	0.05 U	0.05 U	0.05 U	0.05 U	0.1 U	5 U	0.02 U
	03/23/96	PLF-MW25S-0396	SW8260	-	0.1 U	0.1 U	-	-	-	R	1 U	-	-	-	-	-	0.1 U	-	0.1 U	-	-	-	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.02 U
	07/26/96	PLF-MW25S-0796	SW8260	-	0.5 U	0.8 U	-	-	-	R	1 UJ	-	-	-	-	-	0.5 U	-	0.4 U	-	-	-	0.5 U	0.5 U	0.5 U	0.6 U	4 U	10 U	0.02 U
	09/18/96	PLF-MW25S-0996	SW8260	-	0.5 U	0.8 U	-	-	-	3 U	1 U	-	-	-	-	-	0.5 U	-	0.4 U	-	-	-	0.5 U	0.5 U	0.5 U	0.6 U	4 U	10 U	0.02 U
	12/05/96	PLF-MW25S-1296	SW8260	-	0.5 U	0.8 U	-	-	-	3 U	1 U	-	-	-	-	-	0.5 U	-	0.4 UJ	-	-	-	0.5 U	0.4 U	0.5 U	0.6 U	4 U	10 U	0.02 U
	02/28/97	PLF-MW25S-0297	SW8260	-	0.5 U	0.8 U	-	-	-	3 U	1 U	-	-	-	-	-	0.5 U	-	0.4 U	-	-	-	0.5 U	0.4 U	0.5 U	0.6 U	4 U	10 U	0.02 U
	06/20/97	PLF-MW25S-0697	SW8260	-	0.5 U	0.8 U	-	-	-	3 UJ	1 U	-	-	-	-	-	0.5 U	-	0.4 U	-	-	-	0.5 U	0.5 U	0.5 U	0.6 U	4 U	10 U	0.02 U
	09/26/97	PLF-MW25S-0997	SW8260	-	0.5 U	0.8 U	-	-	-	3 U	1 U	-	-	-	-	-	0.5 U	-	0.4 U	-	-	-	0.5 U	0.4 U	0.5 U	0.6 U	4 U	10 U	0.02 U
			UNKNOWN	-	-	-	0.5 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12/05/97	PLF-MW25S-1297	SW8260	-	0.5 U	0.8 U	-	-	-	3 U	1 U	-	-	-	-	-	0.5 U	-	0.4 U	-	-	-	0.5 U	0.4 U	0.5 U	0.6 U	4 U	10 U	0.02 U
	03/06/98	PLF-MW25S-0398	SW8260	-	0.5 U	0.8 U	-	-	-	3 U	1 U	-	-	-	-	-	0.5 U	-	0.4 U	-	-	-	0.5 U	0.4 U	0.5 U	0.6 U	4 U	10 U	0.02 U
	06/08/98	PLF-MW25S-0698	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 UJ	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	**0.264**
	09/11/98	PLF-MW25S-0998	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	-	**0.0185**
	12/09/98	PLF-MW25S-1298	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 UJ	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 UJ	0.05 U
	03/12/99	PLF-MW25S-0399	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	1 U
	06/11/99	PLF-MW25S-0699	SW8260	-	0.122 U	0.124 U	-	0.083 U	-	3.4 U	-	-	-	-	0.08 U	0.096 U	0.286 U	0.134 U	0.135 U	-	-	0.097 U	0.282 U	0.177 U	0.721 U	0.145 U	0.172 U	-	0.05 U
	09/17/99	PLF-MW25S-0999	SW8260	-	1 U	1 U	1 UJ	1 U	-	10 UJ	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 UJ	5 U	0.05 U
	12/17/99	PLF-MW25S-1299	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 UJ	0.05 U
	03/10/00	PLF-MW25S-0300	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	1 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	R	0.05 U
	06/15/00	PLF-MW25S-0600	SW8260	-	1 UJ	1 UJ	1 UJ	1 UJ	-	10 UJ	5 UJ	-	-	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	-	-	1 UJ	1 UJ	1 UJ	2 UJ	1 UJ	1 UJ	5 UJ	**0.012**
	09/11/00	PLF-MW25S-0900	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	0.05 U
	11/17/00	PLF-MW25S-1100	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 UJ	-	-	1 UJ	1 UJ	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	0.05 U
	03/16/01	PLF-MW25S-0301	SW8260	-	1 U	1 U	-	1 U	-	10 U	5 U	-	-	-	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	1 U
	06/08/01	PLF-MW25S-0601	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	0.1 U
	09/12/01	PLF-MW25S-0901	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	0.1 U
	12/14/01	PLF-MW25S-1201	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	0.1 U
	03/28/02	PLF-MW25S-0302	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	0.03 UJ
	06/13/02	PLF-MW25S-0602	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	0.02 U
	09/12/02	PLF-MW25S-0902	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	0.02 U
	12/17/02	PLF-MW-25S-1202	SW8260	-	1 U	1 U	1 U	1 U	-	10 UJ	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	0.02 U
	01/23/03	PLF-MW25S-0103	SW8260B	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U
	04/03/03	PLF-MW25S-0403	SW8260B	-	1 U	1 U	1 U	1 U	-	10 UJ	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 UJ
	07/25/03	PLF-MW25S-0703	SW8260B	-	1 U	1 U	1 U	1 U	-	10 U	5 UJ	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 UJ
	10/10/03	PLF-MW25S-1003	SW8260B	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U
	01/28/04	PLF-MW25S-0104	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	-	R
		PLF-MW-925S-0104_FDUP	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	-	R
	04/21/04	PLF-MW25S-0404	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	-	R
			SW8260SIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U
	07/13/04	PLF-MW25S-0704	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 UJ	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	-	R
	10/13/04	PLF-MW25S-1004	SW8260	-	1 UJ	1 UJ	1 UJ	1 UJ	-	10 UJ	-	-	-	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	-	-	1 UJ	1 UJ	1 UJ	2 UJ	1 UJ	1 UJ	-	R
	04/26/12	PLF-MW25S-0412	SW8260B	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	2 U	2 U	2 U	2 U	2 U	1.5 U	2 U	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260BSIM	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U	-	-	0.053 U	-	-	0.032 U
	10/15/12	PLF-MW25S-1012	SW8260B	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	2 U	2 U	2 U	2 U	2 U	1.5 U	2 U	13 U	2 U	-	2 U	-	-	2 U	-	-

Table O-9
Pasco Landfill Zone B Groundwater Sample Results
Volatile Organic Compounds

Location	Date	Sample ID	Method	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloroethene, cis-	1,2-Dichloroethene, trans-	1,2-Dichloropropane	1,3,5-Trimethylbenzene (Mesitylene)	1,3-Dichlorobenzene	1,3-Dichloropropane	1,3-Dichloropropene, cis-	1,3-Dichloropropene, trans-	1,4-Dichloro-2-butene, trans-	1,4-Dichlorobenzene	2,2-Dichloropropane
		Groundwater Cleanup Levels			**200**		--	--	**0.057**	--							**0.38**		**16**		--								
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-25S (cont.)			SW8260BSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.023 U	-	-	0.1 U	-	0.014 U	-	-	-	-	-	-	-	-	-	-	-	-
	04/16/13	PLF-MW25S-0413	SW8260C	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260CSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.02 U	-	-	0.1 U	-	0.01 U	-	-	-	-	-	-	-	-	-	-	-	-
MW-25SR	10/23/13	PLF-MW25SR-1013	SW8260C	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260CSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.02 U	-	-	0.1 U	-	0.01 U	-	-	-	-	-	-	-	-	-	-	-	-
	04/22/14	PLF-MW25SR-0414	SW8260C	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260CSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.023 U	-	-	0.1 U	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
	10/21/14	PLF-MW25SR-1014	SW8260C	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260CSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.023 U	-	-	0.1 U	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
	04/21/15	PLF-MW25SR-0415	SW8260C	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	-	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260CSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.023 U	-	-	0.1 U	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
	10/27/15	PLF-MW25SR-1015	SW8260C	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260CSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.023 U	-	-	0.1 U	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
	04/28/16	PLF-MW25SR-0416	SW8260C	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 UJ	-	2 UJ	2 UJ	-	2 UJ	-	-	2 U	2 U	0.64 U	2 UJ	2 UJ	2 U	2 U	2 U	-	1.8 UJ	2 U
			SW8260CSIM	-	-	0.22 UJ	-	-	0.02 U	-	-	0.023 UJ	-	-	0.1 UJ	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
	10/18/16	PLF-25SR-1016	SW8260C	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260CSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.023 U	-	-	0.1 U	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
MW-26S	06/03/95	PLF-MW26S-0695	SW8260	0.1 UJ	0.1 U	0.1 UJ	**0.13**	**0.13**	0.07 UJ	-	-	R	-	-	R	0.1 UJ	**0.35**	-	**0.24**	0.1 UJ	**0.021**	-	0.1 UJ	-	0.1 UJ	0.1 UJ	-	0.1 UJ	-
	09/22/95	PLF-MW26S-0995	SW8260	0.1 U	0.1 U	0.1 UJ	**0.099**	0.1 U	0.07 U	-	-	0.1 U	-	-	0.5 UJ	0.1 UJ	0.1 U	-	0.1 UJ	0.1 U	0.1 U	-	0.1 UJ	-	0.1 U	0.1 U	0.5 UJ	0.1 UJ	-
	12/05/95	PLF-MW26S-1295	SW8260	0.05 U	0.05 U	0.05 U	0.11 UJ	5 U	0.05 U	-	-	0.05 U	-	-	5 UJ	0.05 U	0.05 U	-	5 U	0.05 U	0.05 U	-	-	-	5 U	0.05 U	0.05 U	0.05 U	-
	03/23/96	PLF-MW26S-0396	SW8260	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	0.07 U	-	-	0.1 U	-	-	0.5 UJ	0.1 U	0.1 U	-	0.1 U	0.1 U	0.1 U	-	0.1 U	-	0.1 U	0.1 U	0.5 U	0.1 U	-
	07/26/96	PLF-MW26S-0796	SW8260	2 U	0.7 U	0.07 U	0.5 U	0.7 U	0.01 U	-	-	0.7 U	-	-	0.5 U	0.5 U	0.5 U	-	0.4 U	0.7 U	0.5 U	-	-	-	0.4 U	0.3 U	2 U	0.4 U	-
	09/18/96	PLF-MW26S-0996	SW8260	2 U	0.7 U	0.07 U	0.5 U	0.7 U	0.01 U	-	-	0.7 U	-	-	0.5 U	0.5 U	0.5 U	-	0.4 U	0.7 U	0.5 U	-	-	-	0.4 U	0.3 U	2 U	0.4 U	-
	12/05/96	PLF-MW26S-1296	SW8260	2 U	0.7 U	0.07 U	0.5 U	0.7 U	0.01 U	-	-	0.7 U	-	-	0.5 U	0.5 U	0.5 U	-	0.4 U	0.7 U	0.5 U	-	-	-	0.4 U	0.3 U	2 U	0.4 U	-
	02/28/97	PLF-MW26S-0297	SW8260	2 U	0.7 U	0.07 U	0.5 U	0.7 U	0.01 U	-	-	0.7 U	-	-	0.5 U	0.5 U	0.5 U	-	0.4 U	0.7 U	0.5 U	-	-	-	0.4 U	0.3 U	2 UJ	0.4 U	-
	06/20/97	PLF-MW26S-0697	SW8260	2 U	0.7 U	0.07 U	0.5 U	0.7 U	0.01 U	-	-	0.7 U	-	-	0.5 UJ	0.5 U	0.5 U	-	0.4 UJ	0.7 U	0.5 U	-	-	-	0.4 U	0.3 U	2 UJ	0.4 U	-
	09/26/97	PLF-MW26S-0997	SW8260	2 U	0.7 U	0.07 U	0.5 U	0.7 U	0.01 U	-	-	0.7 U	-	-	0.5 U	0.5 U	0.5 U	-	0.4 U	0.7 U	0.5 U	-	-	-	0.4 U	0.3 U	2 U	0.4 U	-
	12/05/97	PLF-MW26S-1297	SW8260	2 U	0.7 U	0.07 U	**0.6**	0.7 U	0.01 U	-	-	0.7 U	-	-	0.5 U	0.5 U	0.5 U	-	0.4 U	0.7 U	0.5 U	-	-	-	0.4 U	0.3 U	2 U	0.4 U	-
		PLF-MW926S-1297_FDUP	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	03/06/98	PLF-MW26S-0398	SW8260	2 U	0.7 U	0.07 U	**0.7**	0.7 U	0.01 U	-	-	0.7 U	-	-	5 U	0.5 U	0.5 U	-	0.4 U	0.7 U	0.5 U	-	-	-	0.4 U	0.3 U	2 U	0.4 U	-
	06/08/98	PLF-MW26S-0698	SW8260	1 U	1 U	0.02 U	**0.533**	1 U	0.01 U	1 U	1 U	1 U	1 U	1 U	0.05 UJ	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
	09/11/98	PLF-MW26S-0998	SW8260	1 U	1 U	0.05 UJ	1 U	1 U	0.01 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	-
	12/09/98	PLF-MW26S-1298	SW8260	1 U	1 U	0.05 U	**0.663**	1 U	0.01 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 UJ	1 U	-
	03/12/99	PLF-MW26S-0399	SW8260	1 U	1 U	0.05 U	**1.01**	1 U	0.01 UJ	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
	06/11/99	PLF-MW26S-0699	SW8260	0.198 U	0.159 U	0.05 U	0.192 U	0.127 U	0.01 U	0.157 U	0.234 U	0.418 U	-	0.369 U	0.347 U	-	0.123 U	-	0.221 U	0.225 U	0.183 U	0.139 U	-	0.195 U	0.156 U	0.069 U	-	-	-
	09/17/99	PLF-MW26S-0999	SW8260	1 U	1 UJ	0.05 U	1 U	1 UJ	0.01 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
	12/17/99	PLF-MW26S-1299	SW8260	1 U	1 U	0.05 U	1 U	1 U	0.01 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
	03/10/00	PLF-MW26S-0300	SW8260	1 U	1 U	0.05 U	1 U	1 U	0.01 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	-
			SW8260SIM	-	-	-	-	-	-	-	0.05 U	-	-	-	0.05 U	-	0.02 U	-	0.05 U	0.05 U	-	-	-	-	-	-	-	-	-
	06/15/00	PLF-MW26S-0600	SW8260	1 UJ	1 UJ	0.05 U	1 UJ	1 UJ	0.01 U	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	5 UJ	1 UJ	1 UJ	-	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	5 UJ	1 UJ	-
	09/11/00	PLF-MW26S-0900	SW8260	1 U	1 U	0.05 U	1 U	1 U	**0.012**	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
	11/17/00	PLF-MW26S-1200	SW8260	1 U	1 U	0.05 U	1 U	1 U	0.01 U	1 U	1 U	1 U	1 UJ	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	5 U	1 U	-
	03/16/01	PLF-MW26S-0301	SW8260	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	5 U	-	1 U	-	1 U	1 U	1 U	1 U	-	1 U	1 U	1 U	5 U	-	-
	06/08/01	PLF-MW26S-0601	SW8260	1 U	1 U	0.1 U	1 U	1 U	0.05 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
	09/12/01	PLF-MW26S-0901	SW8260	1 U	1 U	0.1 U	1 U	1 U	0.05 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
	12/14/01	PLF-MW26S-1201	SW8260	1 U	1 U	0.1 U	1 U	1 U	0.05 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
	03/28/02	PLF-MW26S-0302	SW8260	1 U	1 U	0.1 U	1 U	1 U	0.05 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
		PLF-MW926S-0302_FDUP	SW8260	1 U	1 U	0.1 U	1 U	1 U	0.05 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
	06/13/02	PLF-MW26S-0602	SW8260	1 U	1 U	0.1 UJ	1 U	1 U	0.05 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
		PLF-MW926S-0602_FDUP	SW8260	1 U	1 U	0.1 UJ	1 U	1 U	0.05 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-

Table O-9
Pasco Landfill Zone B Groundwater Sample Results
Volatile Organic Compounds

				2-Chlorotoluene	2-Hexanone (Methyl butyl ketone)	4-Chlorotoluene	4-Methyl-2-pentanone (Methyl isobutyl ketone)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform (Tribromomethane)	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride (Tetrachloromethane)	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Cymene, p- (4-Isopropyltoluene)	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane	Dichloromethane (Methylene chloride)	Diisopropylether (Isopropyl Ether)	Ethanol
		Groundwater Cleanup Levels			--		--	--			**0.79**						--		--	--	--						**5**		
Location	**Date**	**Sample ID**	**Method**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-25S			SW8260BSIM	-	-	-	-	-	-	-	0.028 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(cont.)	04/16/13	PLF-MW25S-0413	SW8260C	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-25SR	10/23/13	PLF-MW25SR-1013	SW8260C	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/22/14	PLF-MW25SR-0414	SW8260C	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.028 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/21/14	PLF-MW25SR-1014	SW8260C	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.028 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/21/15	PLF-MW25SR-0415	SW8260C	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.028 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/27/15	PLF-MW25SR-1015	SW8260C	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 UJ	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.028 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/28/16	PLF-MW25SR-0416	SW8260C	2 UJ	10 U	2 UJ	10 U	25 U	-	10 U	-	2 UJ	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 UJ	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.028 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/18/16	PLF-25SR-1016	SW8260C	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.028 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-26S	06/03/95	PLF-MW26S-0695	SW8260	-	**0.16**	-	R	**4.4**	-	R	0.1 UJ	-	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	R	0.1 U	**0.018**	-	0.1 UJ	0.1 UJ	-	0.1 U	-	-
	09/22/95	PLF-MW26S-0995	SW8260	-	0.5 UJ	-	R	0.83 UJ	-	0.5 U	0.1 UJ	-	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 UJ	0.1 UJ	0.1 U	-	0.1 U	0.1 U	-	0.53 UJ	-	-
	12/05/95	PLF-MW26S-1295	SW8260	-	5 UJ	-	5 U	5 U	-	5 U	0.05 U	-	5 U	0.05 U	0.05 U	0.1 U	0.05 U	0.05 U	0.05 U	0.1 UJ	0.056 U	0.1 UJ	-	0.05 U	0.05 U	-	0.05 UJ	-	-
	03/23/96	PLF-MW26S-0396	SW8260	-	R	-	R	R	-	R	0.1 U	-	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	R	0.1 U	0.1 U	-	0.1 U	0.1 U	-	0.1 U	-	-
	07/26/96	PLF-MW26S-0796	SW8260	-	3 U	-	**2**	**7**	-	4 U	0.5 U	-	0.9 U	0.5 U	0.4 U	3 U	1 U	0.02 UJ	0.5 U	4 U	0.6 U	1 U	-	0.4 U	0.9 U	-	0.9 U	-	-
	09/18/96	PLF-MW26S-0996	SW8260	-	3 UJ	-	2 UJ	6 UJ	-	4 UJ	0.5 U	-	0.9 U	0.5 U	0.4 U	3 U	1 U	0.02 U	0.5 U	4 U	0.6 U	1 U	-	0.4 U	0.9 U	-	1.2 UJ	-	-
	12/05/96	PLF-MW26S-1296	SW8260	-	3 U	-	2 U	6 UJ	-	4 U	0.5 U	-	0.9 U	0.5 U	0.4 U	3 U	1 U	0.02 UJ	0.5 U	4 U	0.6 U	1 U	-	0.4 U	0.9 U	-	0.91 U	-	-
	02/28/97	PLF-MW26S-0297	SW8260	-	3 U	-	2 U	6 U	-	4 U	0.5 U	-	0.9 U	0.5 U	0.4 U	3 U	1 U	0.02 UJ	0.5 U	4 U	0.6 U	1 U	-	0.4 U	0.9 U	-	0.91 U	-	-
	06/20/97	PLF-MW26S-0697	SW8260	-	3 U	-	2 U	6 UJ	-	4 U	0.5 U	-	0.9 U	0.5 U	0.4 U	3 U	1 U	0.02 U	0.5 U	4 U	0.6 U	1 U	-	0.4 U	0.9 U	-	0.9 U	-	-
	09/26/97	PLF-MW26S-0997	SW8260	-	3 U	-	2 U	6 U	-	4 U	0.5 U	-	0.9 U	0.5 U	0.4 U	3 U	1 U	0.02 U	0.5 U	4 U	0.6 U	1 U	-	0.4 U	0.9 U	-	0.91 U	-	-
	12/05/97	PLF-MW26S-1297	SW8260	-	3 U	-	2 U	6 UJ	-	4 U	0.5 U	-	0.9 U	0.5 U	0.4 U	3 U	1 U	0.02 U	0.5 U	4 U	0.6 U	1 U	-	0.4 U	0.9 U	-	0.91 U	-	-
		PLF-MW926S-1297_FDUP	UNKNOWN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	03/06/98	PLF-MW26S-0398	SW8260	-	3 U	-	2 U	6 UJ	-	4 U	0.5 U	-	0.9 U	0.5 U	0.4 U	3 U	1 U	0.02 U	0.5 U	4 U	0.6 U	1 U	-	0.4 U	0.9 U	-	0.91 U	-	-
	06/08/98	PLF-MW26S-0698	SW8260	1 U	10 U	1 U	10 U	10 U	-	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.02 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	**1.15**	-	-
	09/11/98	PLF-MW26S-0998	SW8260	1 U	10 U	1 U	10 U	10 U	-	-	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	0.02 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 UJ	-	-
	12/09/98	PLF-MW26S-1298	SW8260	1 U	10 U	1 U	10 U	10 UJ	5 UJ	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.02 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	5 UJ	-	-
	03/12/99	PLF-MW26S-0399	SW8260	1 U	10 U	1 U	10 UJ	10 U	5 U	-	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	0.02 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	-	-
	06/11/99	PLF-MW26S-0699	SW8260	0.217 U	2.83 U	0.165 U	2.04 U	5.59 U	-	-	0.094 U	0.112 U	0.117 U	0.088 U	0.208 UJ	0.364 U	0.17 U	0.02 U	0.07 U	0.295 U	0.212 U	2.35 UJ	0.137 U	0.073 U	0.244 U	0.256 U	0.808 U	-	-
	09/17/99	PLF-MW26S-0999	SW8260	1 U	10 U	1 U	10 U	10 U	5 U	-	1 U	1 U	1 UJ	1 U	1 U	1 UJ	1 U	0.02 U	1 U	1 UJ	1 U	5 UJ	1 U	1 U	1 U	1 UJ	5 U	-	-
	12/17/99	PLF-MW26S-1299	SW8260	1 U	10 U	1 U	10 U	10 U	5 UJ	-	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	0.02 U	1 U	1 UJ	1 U	5 U	1 U	1 U	1 U	1 UJ	5 U	-	-
	03/10/00	PLF-MW26S-0300	SW8260	1 U	10 U	1 U	10 U	10 U	10 U	-	1 U	1 U	1 U	1 U	1 U	R	1 U	0.02 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
			SW8260SIM	-	-	-	-	-	-	-	0.05 U	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-
	06/15/00	PLF-MW26S-0600	SW8260	1 UJ	10 UJ	1 UJ	10 UJ	10 UJ	5 UJ	-	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	0.02 U	1 UJ	1 UJ	1 UJ	5 UJ	1 UJ	1 UJ	1 UJ	1 UJ	5 UJ	-	-
	09/11/00	PLF-MW26S-0900	SW8260	1 U	10 U	1 U	10 U	10 U	25 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.02 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
	11/17/00	PLF-MW26S-1200	SW8260	1 U	10 UJ	1 U	10 U	10 U	5 U	-	1 U	1 U	1 U	1 UJ	1 U	1 UJ	1 U	0.02 UJ	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 UJ	5 U	-	-
	03/16/01	PLF-MW26S-0301	SW8260	1 U	10 U	1 U	10 U	10 U	5 U	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	**12.8**	-	-
	06/08/01	PLF-MW26S-0601	SW8260	1 U	10 U	1 U	10 U	10 U	5 U	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	0.02 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	**11.6**	-	-
	09/12/01	PLF-MW26S-0901	SW8260	1 U	10 U	1 U	10 U	10 U	5 U	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	0.02 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
	12/14/01	PLF-MW26S-1201	SW8260	1 U	10 U	1 U	10 U	10 U	5 U	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	0.02 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
	03/28/02	PLF-MW26S-0302	SW8260	1 U	10 U	1 U	10 U	10 U	5 U	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	0.05 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
		PLF-MW926S-0302_FDUP	SW8260	1 U	10 U	1 U	10 U	10 U	5 U	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	0.05 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
	06/13/02	PLF-MW26S-0602	SW8260	1 U	10 U	1 U	10 U	10 U	5 U	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	0.05 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 UJ	5 U	-	-
		PLF-MW926S-0602_FDUP	SW8260	1 U	10 UJ	1 U	10 U	10 U	5 U	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	0.05 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 UJ	5 U	-	-

Table O-9
Pasco Landfill Zone B Groundwater Sample Results
Volatile Organic Compounds

Location	Date	Sample ID	Method	Ethyl tert-butyl ether (ETBE)	Ethylbenzene	Ethylene dibromide (1,2-Dibromoethane)	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	Isopropylbenzene (Cumene)	m,p-Xylene	Methyl ethyl ketone (2-Butanone)	Methyl iodide (Iodomethane)	Methyl tert-butyl ether (MTBE)	m-Xylene	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Amyl methyl ether (TAME)	tert-Butyl alcohol (2-Methyl-2-propanol)	tert-Butylbenzene	Tetrachloroethene (PCE)	Toluene	Total xylene (reported, not calculated)	Trichloroethene (TCE)	Trichlorofluoromethane (Fluorotrichloromethane)	Vinyl acetate	Vinyl chloride
		Groundwater Cleanup Levels								--													**0.69**	**615**		**2.5**	--		**0.069**
Location	**Date**	**Sample ID**	**Method**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-25S (cont.)			SW8260BSIM	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U	-	-	0.053 U	-	-	0.032 U
	04/16/13	PLF-MW25S-0413	SW8260C	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	2 U	2 U	2 U	2 U	2 U	1.5 U	-	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U	-	-	0.05 U	-	-	0.03 U
MW-25SR	10/23/13	PLF-MW25SR-1013	SW8260C	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	2 U	2 U	2 U	2 U	2 U	1.5 U	-	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U	-	-	0.05 U	-	-	0.03 U
	04/22/14	PLF-MW25SR-0414	SW8260C	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	2 UJ	2 U	2 U	2 U	2 U	1.5 U	-	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2 U	-	-	0.053 U	-	-	0.032 U
	10/21/14	PLF-MW25SR-1014	SW8260C	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	2 U	2 U	2 U	2 U	2 U	1.5 U	-	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2 U	-	-	0.053 U	-	-	0.032 U
	04/21/15	PLF-MW25SR-0415	SW8260C	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	2 U	2 U	2 U	2 U	2 U	1.5 U	-	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2 U	-	-	0.053 U	-	-	0.032 U
	10/27/15	PLF-MW25SR-1015	SW8260C	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	2 U	2 U	2 U	2 U	2 U	1.5 U	-	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2 U	-	-	**0.14**	-	-	0.032 U
	04/28/16	PLF-MW25SR-0416	SW8260C	4.1 U	2 U	-	0.56 UJ	2 U	4 U	10 U	-	2 U	-	2 UJ	2 UJ	2 UJ	2 U	2 UJ	1.5 U	-	13 U	2 UJ	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2 U	-	-	0.053 U	-	-	0.032 U
	10/18/16	PLF-25SR-1016	SW8260C	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	2 U	2 U	2 U	2 U	2 U	1.5 U	-	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2 U	-	-	0.053 U	-	-	0.032 U
MW-26S	06/03/95	PLF-MW26S-0695	SW8260	-	0.1 UJ	0.1 UJ	-	-	-	R	0.1 UJ	-	-	-	-	-	0.1 UJ	-	0.1 UJ	-	-	-	**0.039**	**0.03**	0.1 UJ	**0.13**	0.1 UJ	0.1 UJ	0.02 UJ
	09/22/95	PLF-MW26S-0995	SW8260	-	0.1 UJ	0.1 U	-	-	-	0.5 UJ	0.1 U	-	-	-	-	-	0.1 UJ	-	0.1 UJ	-	-	-	0.1 U	0.1 UJ	0.1 UJ	0.1 U	**0.087**	0.1 UJ	0.02 U
	12/05/95	PLF-MW26S-1295	SW8260	-	0.05 U	0.05 U	-	-	-	5.1 UJ	0.05 UJ	-	-	-	-	-	0.05 U	-	0.05 U	-	-	-	0.05 U	0.05 U	0.05 U	0.05 U	0.1 U	5 U	0.02 U
	03/23/96	PLF-MW26S-0396	SW8260	-	0.1 U	0.1 U	-	-	-	R	1 U	-	-	-	-	-	0.1 U	-	0.1 U	-	-	-	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.02 U
	07/26/96	PLF-MW26S-0796	SW8260	-	0.5 U	0.8 U	-	-	-	R	1 U	-	-	-	-	-	0.5 U	-	0.4 U	-	-	-	0.5 U	0.5 U	0.5 U	0.6 U	4 U	10 U	0.02 U
	09/18/96	PLF-MW26S-0996	SW8260	-	0.5 U	0.8 U	-	-	-	3 U	1 U	-	-	-	-	-	0.5 U	-	0.4 U	-	-	-	0.5 U	0.5 U	0.5 U	0.6 U	4 U	10 U	0.02 U
	12/05/96	PLF-MW26S-1296	SW8260	-	0.5 U	0.8 U	-	-	-	3 U	1 U	-	-	-	-	-	0.5 U	-	0.4 UJ	-	-	-	0.5 U	0.4 U	0.5 U	0.6 U	4 U	10 U	0.02 U
	02/28/97	PLF-MW26S-0297	SW8260	-	0.5 U	0.8 U	-	-	-	3 U	1 U	-	-	-	-	-	0.5 U	-	0.4 U	-	-	-	0.5 U	0.4 U	0.5 U	0.6 U	4 U	10 U	0.02 U
	06/20/97	PLF-MW26S-0697	SW8260	-	0.5 U	0.8 U	-	-	-	3 UJ	1 U	-	-	-	-	-	0.5 U	-	0.4 U	-	-	-	0.5 U	0.5 U	0.5 U	0.6 U	4 U	10 U	0.02 U
	09/26/97	PLF-MW26S-0997	SW8260	-	0.5 U	0.8 U	-	-	-	3 U	1 U	-	-	-	-	-	0.5 U	-	0.4 U	-	-	-	0.5 U	0.4 U	0.5 U	0.6 U	4 U	10 U	0.02 U
	12/05/97	PLF-MW26S-1297	SW8260	-	0.5 U	0.8 U	-	-	-	3 U	1 U	-	-	-	-	-	0.5 U	-	0.4 U	-	-	-	0.5 U	0.4 U	0.5 U	0.6 U	4 U	10 U	0.02 U
		PLF-MW926S-1297_FDUP	UNKNOWN	-	-	-	0.5 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	03/06/98	PLF-MW26S-0398	SW8260	-	0.5 U	0.8 U	-	-	-	3 U	1 U	-	-	-	-	-	0.5 U	-	0.4 U	-	-	-	0.5 U	0.4 U	0.5 U	0.6 U	4 U	10 U	0.02 U
	06/08/98	PLF-MW26S-0698	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 UJ	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	**0.103**
	09/11/98	PLF-MW26S-0998	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	-	0.05 UJ
	12/09/98	PLF-MW26S-1298	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 UJ	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 UJ	0.05 U
	03/12/99	PLF-MW26S-0399	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	0.05 U
	06/11/99	PLF-MW26S-0699	SW8260	-	0.122 U	0.124 U	-	0.083 U	-	3.4 U	-	-	-	-	0.08 U	0.096 U	0.286 U	0.134 U	0.135 U	-	-	0.097 U	0.282 U	0.177 U	0.721 U	0.145 U	0.172 U	-	0.05 U
	09/17/99	PLF-MW26S-0999	SW8260	-	1 U	1 U	1 UJ	1 U	-	10 UJ	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 UJ	5 U	0.05 U
	12/17/99	PLF-MW26S-1299	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 UJ	0.05 U
	03/10/00	PLF-MW26S-0300	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	1 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	R	0.05 U
			SW8260SIM	-	0.05 U	0.02 U	0.05 U	-	-	-	-	-	-	-	-	-	0.05 U	-	-	-	-	-	**0.018**	0.05 U	0.1 U	0.05 U	-	-	-
	06/15/00	PLF-MW26S-0600	SW8260	-	1 UJ	1 UJ	1 UJ	1 UJ	-	10 UJ	5 UJ	-	-	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	-	-	1 UJ	1 UJ	1 UJ	2 UJ	1 UJ	1 UJ	5 UJ	0.05 U
	09/11/00	PLF-MW26S-0900	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	0.05 U
	11/17/00	PLF-MW26S-1200	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 UJ	-	-	1 UJ	1 UJ	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	0.05 U
	03/16/01	PLF-MW26S-0301	SW8260	-	1 U	1 U	-	1 U	-	10 U	5 U	-	-	-	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	1 U
	06/08/01	PLF-MW26S-0601	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	0.1 U
	09/12/01	PLF-MW26S-0901	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	0.1 U
	12/14/01	PLF-MW26S-1201	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	0.1 U
	03/28/02	PLF-MW26S-0302	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	0.03 UJ
		PLF-MW926S-0302_FDUP	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	0.03 UJ
	06/13/02	PLF-MW26S-0602	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	0.02 U
		PLF-MW926S-0602_FDUP	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	2 U	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	-	1 U	1 U	5 U	0.02 U

Table O-9
Pasco Landfill Zone B Groundwater Sample Results
Volatile Organic Compounds

Location	Date	Sample ID	Method	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloroethene, cis-	1,2-Dichloroethene, trans-	1,2-Dichloropropane	1,3,5-Trimethylbenzene (Mesitylene)	1,3-Dichlorobenzene	1,3-Dichloropropane	1,3-Dichloropropene, cis-	1,3-Dichloropropene, trans-	1,4-Dichloro-2-butene, trans-	1,4-Dichlorobenzene	2,2-Dichloropropane
			Groundwater Cleanup Levels		**200**		--	--	**0.057**	--							**0.38**		**16**		--								
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26S (cont.)	09/12/02	PLF-MW26S-0902	SW8260	1 U	1 U	0.1 U	1 U	1 U	0.05 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
		PLF-MW926S-0902_FDUP	SW8260	1 U	1 U	0.1 U	1 U	1 U	0.05 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
	12/17/02	PLF-MW-26S-1202	SW8260	1 U	1 U	0.1 U	1 U	1 U	0.05 U	1 U	1 UJ	1 U	1 UJ	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
		PLF-MW926S-1202_FDUP	SW8260	1 U	1 U	0.1 U	1 U	1 U	0.05 U	1 U	1 UJ	1 U	1 UJ	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
	01/23/03	PLF-MW26S-0103	SW8260B	1 U	1 U	-	**1.13**	1 U	-	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
			SW8260BM	-	-	0.1 U	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926S-0103_FDUP	SW8260B	1 U	1 U	-	**1.15**	1 U	-	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
			SW8260BM	-	-	0.1 U	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/02/03	PLF-MW26S-0403	SW8260B	1 U	1 U	-	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	5 UJ	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
			SW8260BM	-	-	0.1 U	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926S-0403_FDUP	SW8260B	1 U	1 U	-	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	5 UJ	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
			SW8260BM	-	-	0.1 UJ	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	07/25/03	PLF-MW26S-0703	SW8260B	1 U	1 U	-	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
			SW8260BM	-	-	0.1 U	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926S-0703_FDUP	SW8260B	1 U	1 U	-	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
			SW8260BM	-	-	0.1 U	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/10/03	PLF-MW26S-1003	SW8260B	1 U	1 U	-	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
			SW8260BM	-	-	0.1 U	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926S-1003_FDUP	SW8260B	1 U	1 U	-	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	-
			SW8260BM	-	-	0.1 U	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	01/28/04	PLF-MW26S-0104	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
	04/21/04	PLF-MW26S-0404	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
			SW8260SIM	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926S-0404_FDUP	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
	07/13/04	PLF-MW26S-0704	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
	07/14/04	PLF-MW926S-0704_FDUP	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
	10/13/04	PLF-MW26S-1004	SW8260	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	R	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	5 UJ	1 UJ	1 UJ	-	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	-	1 UJ	1 UJ
		PLF-MW926S-1004_FDUP	SW8260	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	R	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	5 UJ	1 UJ	1 UJ	-	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	-	1 UJ	1 UJ
	01/27/05	PLF-MW26S-0105	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
		PLF-MW926S-0105_FDUP	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
	04/21/05	PLF-MW26S-0405	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
		PLF-MW926S-0205_FDUP	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
	07/13/05	PLF-MW26S-0705	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
		PLF-MW926S-0705_FDUP	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
	10/12/05	PLF-MW26S-1005	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
		PLF-MW926S-1005_FDUP	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
	01/11/06	PLF-MW26S-0106	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 UJ	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
		PLF-MW926S-0106_FDUP	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
			SW8260SIM	-	-	-	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/12/06	PLF-MW26S-0406	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
		PLF-MW926S-0406_FDUP	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
	07/12/06	PLF-MW26S-0706	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 UJ	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
		PLF-MW926S-0706_FDUP	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
	10/17/06	PLF-MW26S-1006	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
		PLF-MW926S-1006_FDUP	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
	01/10/07	PLF-MW26S-0107	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
		PLF-MW926S-0107_FDUP	SW8260	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	-	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	1 U	1 U
	01/26/12	PLF-MW26S-0112	SW8270SIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table O-9
Pasco Landfill Zone B Groundwater Sample Results
Volatile Organic Compounds

Location	Date	Sample ID	Method	2-Chlorotoluene	2-Hexanone (Methyl butyl ketone)	4-Chlorotoluene	4-Methyl-2-pentanone (Methyl isobutyl ketone)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform (Tribromomethane)	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride (Tetrachloromethane)	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Cymene, p- (4-Isopropyltoluene)	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane	Dichloromethane (Methylene chloride)	Diisopropylether (Isopropyl Ether)	Ethanol
			Groundwater Cleanup Levels		--		--	--			**0.79**						--		--	--	--						**5**		
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26S (cont.)	09/12/02	PLF-MW26S-0902	SW8260	1 U	10 U	1 U	10 U	10 U	5 U	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	0.05 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
		PLF-MW926S-0902_FDUP	SW8260	1 U	10 U	1 U	10 U	10 U	5 U	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	0.05 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
	12/17/02	PLF-MW-26S-1202	SW8260	1 U	10 UJ	1 U	10 U	10 UJ	R	-	1 U	1 U	1 UJ	1 U	1 UJ	2 U	1 U	0.05 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
		PLF-MW926S-1202_FDUP	SW8260	1 U	10 UJ	1 U	10 U	10 UJ	R	-	1 U	1 U	1 UJ	1 U	1 UJ	2 U	1 U	0.05 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
	01/23/03	PLF-MW26S-0103	SW8260B	1 U	10 U	1 U	10 U	10 U	R	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	-	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926S-0103_FDUP	SW8260B	1 U	10 U	1 U	10 U	10 U	R	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	-	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-
	04/02/03	PLF-MW26S-0403	SW8260B	1 U	10 U	1 U	10 U	10 U	R	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	-	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926S-0403_FDUP	SW8260B	1 U	10 U	1 U	10 U	10 UJ	R	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	-	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-
	07/25/03	PLF-MW26S-0703	SW8260B	1 U	10 U	1 U	10 U	10 U	R	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	-	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926S-0703_FDUP	SW8260B	1 U	10 U	1 U	10 U	10 U	R	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	-	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-
	10/10/03	PLF-MW26S-1003	SW8260B	1 U	10 U	1 U	10 U	10 U	R	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	-	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926S-1003_FDUP	SW8260B	1 U	10 U	1 U	10 U	10 U	R	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	-	1 U	1 U	1 U	5 U	1 U	1 U	1 U	1 U	5 U	-	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U	-	-	-	-	-	-	-	-	-	-	-
	01/28/04	PLF-MW26S-0104	SW8260	1 U	10 U	1 U	10 U	10 U	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 U	-	-
	04/21/04	PLF-MW26S-0404	SW8260	1 U	10 U	1 U	10 U	10 U	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 U	-	-
			SW8260SIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926S-0404_FDUP	SW8260	1 U	10 U	1 U	10 U	10 U	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 U	-	-
	07/13/04	PLF-MW26S-0704	SW8260	1 U	10 U	1 U	10 U	10 U	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 U	-	-
	07/14/04	PLF-MW926S-0704_FDUP	SW8260	1 U	10 U	1 U	10 U	10 U	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 U	-	-
	10/13/04	PLF-MW26S-1004	SW8260	1 UJ	10 UJ	1 UJ	10 UJ	10 UJ	-	-	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	2 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	5 UJ	1 UJ	1 UJ	1 UJ	-	5 UJ	-	-
		PLF-MW926S-1004_FDUP	SW8260	1 UJ	10 UJ	1 UJ	10 UJ	10 UJ	-	-	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	2 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	5 UJ	1 UJ	1 UJ	1 UJ	-	5 UJ	-	-
	01/27/05	PLF-MW26S-0105	SW8260	1 U	10 U	1 U	10 U	10 U	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 U	-	-
		PLF-MW926S-0105_FDUP	SW8260	1 U	10 U	1 U	10 U	10 U	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 U	-	-
	04/21/05	PLF-MW26S-0405	SW8260	1 U	10 U	1 U	10 U	10 UJ	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 UJ	-	-
		PLF-MW926S-0205_FDUP	SW8260	1 U	10 U	1 U	10 U	10 UJ	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 UJ	-	-
	07/13/05	PLF-MW26S-0705	SW8260	1 U	10 U	1 U	10 U	10 UJ	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 U	-	-
		PLF-MW926S-0705_FDUP	SW8260	1 U	10 U	1 U	10 U	10 UJ	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 U	-	-
	10/12/05	PLF-MW26S-1005	SW8260	1 U	10 U	1 U	10 U	10 U	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 U	-	-
		PLF-MW926S-1005_FDUP	SW8260	1 U	10 U	1 U	10 U	10 U	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 U	-	-
	01/11/06	PLF-MW26S-0106	SW8260	1 U	10 U	1 U	10 U	10 U	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 U	-	-
		PLF-MW926S-0106_FDUP	SW8260	1 U	10 UJ	1 U	10 U	10 UJ	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 U	-	-
			SW8260SIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/12/06	PLF-MW26S-0406	SW8260	1 U	10 U	1 U	10 U	10 UJ	-	-	1 U	1 U	1 U	1 U	1 UJ	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 U	-	-
		PLF-MW926S-0406_FDUP	SW8260	1 U	10 U	1 U	10 U	10 UJ	-	-	1 U	1 U	1 U	1 U	1 UJ	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 U	-	-
	07/12/06	PLF-MW26S-0706	SW8260	1 U	10 U	1 U	10 U	10 U	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 UJ	-	-
		PLF-MW926S-0706_FDUP	SW8260	1 U	10 U	1 U	10 U	10 U	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 UJ	-	-
	10/17/06	PLF-MW26S-1006	SW8260	1 U	10 U	1 U	10 U	10 U	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 U	-	-
		PLF-MW926S-1006_FDUP	SW8260	1 U	10 U	1 U	10 U	10 U	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 U	-	-
	01/10/07	PLF-MW26S-0107	SW8260	1 U	10 U	1 U	10 U	10 U	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 U	-	-
		PLF-MW926S-0107_FDUP	SW8260	1 U	10 U	1 U	10 U	10 U	-	-	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U	-	5 U	-	-
	01/26/12	PLF-MW26S-0112	SW8270SIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table O-9
Pasco Landfill Zone B Groundwater Sample Results
Volatile Organic Compounds

Location	Date	Sample ID	Method	Ethyl tert-butyl ether (ETBE)	Ethylbenzene	Ethylene dibromide (1,2-Dibromoethane)	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	Isopropylbenzene (Cumene)	m,p-Xylene	Methyl ethyl ketone (2-Butanone)	Methyl iodide (Iodomethane)	Methyl tert-butyl ether (MTBE)	m-Xylene	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Amyl methyl ether (TAME)	tert-Butyl alcohol (2-Methyl-2-propanol)	tert-Butylbenzene	Tetrachloroethene (PCE)	Toluene	Total xylene (reported, not calculated)	Trichloroethene (TCE)	Trichlorofluoromethane (Fluorotrichloromethane)	Vinyl acetate	Vinyl chloride
		Groundwater Cleanup Levels								--													0.69	615		2.5	--		0.069
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26S	09/12/02	PLF-MW26S-0902	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	0.02 U
(cont.)		PLF-MW926S-0902_FDUP	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	0.02 U
	12/17/02	PLF-MW-26S-1202	SW8260	-	1 U	1 U	1 U	1 U	-	10 UJ	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	0.02 U
		PLF-MW926S-1202_FDUP	SW8260	-	1 U	1 U	1 U	1 U	-	10 UJ	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	0.02 U
	01/23/03	PLF-MW26S-0103	SW8260B	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U
		PLF-MW926S-0103_FDUP	SW8260B	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U
	04/02/03	PLF-MW26S-0403	SW8260B	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U
		PLF-MW926S-0403_FDUP	SW8260B	-	1 U	1 U	1 U	1 U	-	10 UJ	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 UJ
	07/25/03	PLF-MW26S-0703	SW8260B	-	1 U	1 U	1 U	1 U	-	10 U	5 UJ	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U
		PLF-MW926S-0703_FDUP	SW8260B	-	1 U	1 U	1 U	1 U	-	10 U	5 UJ	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 UJ
	10/10/03	PLF-MW26S-1003	SW8260B	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U
		PLF-MW926S-1003_FDUP	SW8260B	-	1 U	1 U	1 U	1 U	-	10 U	5 U	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	5 U	-
			SW8260BM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U
	01/28/04	PLF-MW26S-0104	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	-	R
	04/21/04	PLF-MW26S-0404	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	-	R
			SW8260SIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U
		PLF-MW926S-0404_FDUP	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	-	R
	07/13/04	PLF-MW26S-0704	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 UJ	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	-	R
	07/14/04	PLF-MW926S-0704_FDUP	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 UJ	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	-	R
	10/13/04	PLF-MW26S-1004	SW8260	-	1 UJ	1 UJ	1 UJ	1 UJ	-	10 UJ	-	-	-	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	-	-	1 UJ	1 UJ	1 UJ	2 UJ	1 UJ	1 UJ	-	R
		PLF-MW926S-1004_FDUP	SW8260	-	1 UJ	1 UJ	1 UJ	1 UJ	-	10 UJ	-	-	-	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	-	-	1 UJ	1 UJ	1 UJ	2 UJ	1 UJ	1 UJ	-	R
	01/27/05	PLF-MW26S-0105	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	-	R
		PLF-MW926S-0105_FDUP	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	-	R
	04/21/05	PLF-MW26S-0405	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 UJ	1 U	2 U	1 U	1 U	-	R
		PLF-MW926S-0205_FDUP	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	-	R
	07/13/05	PLF-MW26S-0705	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 UJ	1 U	2 U	1 U	1 U	-	R
		PLF-MW926S-0705_FDUP	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 UJ	1 U	2 U	1 U	1 U	-	R
	10/12/05	PLF-MW26S-1005	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 UJ	1 U	2 U	1 U	1 U	-	R
		PLF-MW926S-1005_FDUP	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 UJ	1 U	2 U	1 U	1 U	-	R
	01/11/06	PLF-MW26S-0106	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	-	R
		PLF-MW926S-0106_FDUP	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	-	R
			SW8260SIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02 U
	04/12/06	PLF-MW26S-0406	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 UJ	1 U	2 U	1 U	1 U	-	R
		PLF-MW926S-0406_FDUP	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 UJ	1 U	2 U	1 U	1 U	-	R
	07/12/06	PLF-MW26S-0706	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	-	R
		PLF-MW926S-0706_FDUP	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	-	R
	10/17/06	PLF-MW26S-1006	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	-	R
		PLF-MW926S-1006_FDUP	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	-	R
	01/10/07	PLF-MW26S-0107	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	-	R
		PLF-MW926S-0107_FDUP	SW8260	-	1 U	1 U	1 U	1 U	-	10 U	-	-	-	1 U	1 U	1 U	1 U	1 U	1 U	-	-	1 U	1 U	1 U	2 U	1 U	1 U	-	R
	01/26/12	PLF-MW26S-0112	SW8270SIM	-	-	-	0.56 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table O-9
Pasco Landfill Zone B Groundwater Sample Results
Volatile Organic Compounds

Location	Date	Sample ID	Method	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloroethene, cis-	1,2-Dichloroethene, trans-	1,2-Dichloropropane	1,3,5-Trimethylbenzene (Mesitylene)	1,3-Dichlorobenzene	1,3-Dichloropropane	1,3-Dichloropropene, cis-	1,3-Dichloropropene, trans-	1,4-Dichloro-2-butene, trans-	1,4-Dichlorobenzene	2,2-Dichloropropane
			Groundwater Cleanup Levels		**200**		--	--	**0.057**	--							**0.38**		**16**		--								
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26S (cont.)	04/26/12	PLF-MW26S-0412	SW8260B	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260BSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.023 U	-	-	0.1 U	-	0.014 U	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270SIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	07/24/12	PLF-MW26S-0712	SW8260B	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260BSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.023 U	-	-	0.1 U	-	0.014 U	-	-	-	-	-	-	-	-	-	-	-	-
	07/24/12	PLF-MW926S-0712_FDUP	SW8270SIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/15/12	PLF-MW26S-1012	SW8260B	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260BSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.023 U	-	-	0.1 U	-	0.014 U	-	-	-	-	-	-	-	-	-	-	-	-
	01/30/13	PLF-MW26S-0113	SW8260C	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260CSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.02 U	-	-	0.1 U	-	0.01 U	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926S-0113	SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/16/13	PLF-MW26S-0413	SW8260C	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260CSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.02 U	-	-	0.1 U	-	0.01 U	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	01/23/14	PLF-MW926SR-0114	SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	07/24/13	PLF-MW26S-0713	SW8260C	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260CSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.02 U	-	-	0.1 U	-	0.01 U	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926SR-0713	SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/23/13	PLF-MW26SR-1013	SW8260C	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260CSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.02 U	-	-	0.1 U	-	0.01 U	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	01/23/14	PLF-MW26SR-0114	SW8260C	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260CSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.023 U	-	-	0.1 U	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/22/14	PLF-MW26SR-0414	SW8260C	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260CSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.023 U	-	-	0.1 U	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
	07/22/14	PLF-MW26SR-0714	SW8260C	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260CSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.023 U	-	-	0.1 U	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
	10/21/14	PLF-MW26SR-1014	SW8260C	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	-	2 U	-	-	-	-	2 U	2 U	0.64 U	2 U	-	2 U	2 U	2 U	-	-	2 U
			SW8260CSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.023 U	-	-	0.1 U	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
	01/21/15	PLF-MW26SR-0115	SW8260C	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260CSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.023 U	-	-	0.1 U	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
	04/21/15	PLF-MW26SR-0415	SW8260C	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	-	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260CSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.023 U	-	-	0.1 U	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
	07/16/15	PLF-MW26SR-0715	SW8260C	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260CSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.023 U	-	-	0.1 U	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
	10/27/15	PLF-MW26SR-1015	SW8260C	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260CSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.023 U	-	-	0.1 U	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
	01/28/16	PLF-MW26SR-0116	SW8260C	1.7 U	2 U	-	**0.86**	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260CSIM	-	-	0.22 U	-	-	**0.025**	-	-	0.023 U	-	-	0.1 UJ	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
	04/27/16	PLF-MW26SR-0416	SW8260C	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260CSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.023 U	-	-	0.1 U	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
	07/19/16	PLF-MW26SR-0716	SW8260C	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260CSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.023 U	-	-	0.1 U	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-
	10/20/16	PLF-MW26SR-1016	SW8260C	1.7 U	2 U	-	0.77 U	2 U	-	2 U	2 U	-	2 U	2 U	-	2 U	-	-	2 U	2 U	0.64 U	2 U	2 U	2 U	2 U	2 U	-	1.8 U	2 U
			SW8260CSIM	-	-	0.22 U	-	-	0.02 U	-	-	0.023 U	-	-	0.1 U	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-

Table O-9
Pasco Landfill Zone B Groundwater Sample Results
Volatile Organic Compounds

Location	Date	Sample ID	Method	2-Chlorotoluene	2-Hexanone (Methyl butyl ketone)	4-Chlorotoluene	4-Methyl-2-pentanone (Methyl isobutyl ketone)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform (Tribromomethane)	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride (Tetrachloromethane)	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Cymene, p- (4-Isopropyltoluene)	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane	Dichloromethane (Methylene chloride)	Diisopropylether (Isopropyl Ether)	Ethanol
			Groundwater Cleanup Levels		**--**		--	**--**			**0.79**						**--**		--	**--**	--						**5**		
Location	**Date**	**Sample ID**	**Method**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26S	04/26/12	PLF-MW26S-0412	SW8260B	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
(cont.)			SW8260BSIM	-	-	-	-	-	-	-	0.028 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270SIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	07/24/12	PLF-MW26S-0712	SW8260B	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260BSIM	-	-	-	-	-	-	-	0.028 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	07/24/12	PLF-MW926S-0712_FDUP	SW8270SIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/15/12	PLF-MW26S-1012	SW8260B	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260BSIM	-	-	-	-	-	-	-	0.028 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	01/30/13	PLF-MW26S-0113	SW8260C	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926S-0113	SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/16/13	PLF-MW26S-0413	SW8260C	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	01/23/14	PLF-MW926SR-0114	SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	07/24/13	PLF-MW26S-0713	SW8260C	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926SR-0713	SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/23/13	PLF-MW26SR-1013	SW8260C	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	01/23/14	PLF-MW26SR-0114	SW8260C	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.028 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SW8270DSIM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/22/14	PLF-MW26SR-0414	SW8260C	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.028 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	07/22/14	PLF-MW26SR-0714	SW8260C	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.028 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/21/14	PLF-MW26SR-1014	SW8260C	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.028 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	01/21/15	PLF-MW26SR-0115	SW8260C	2 U	10 UJ	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.028 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/21/15	PLF-MW26SR-0415	SW8260C	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.028 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	07/16/15	PLF-MW26SR-0715	SW8260C	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.028 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/27/15	PLF-MW26SR-1015	SW8260C	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 UJ	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.028 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	01/28/16	PLF-MW26SR-0116	SW8260C	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.028 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/27/16	PLF-MW26SR-0416	SW8260C	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 UJ	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.028 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	07/19/16	PLF-MW26SR-0716	SW8260C	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 UJ	2 U	2 U	2 U	2 U	2 U	0.52 UJ	2 U	2 U	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.028 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/20/16	PLF-MW26SR-1016	SW8260C	2 U	10 U	2 U	10 U	25 U	-	10 U	-	2 U	2 U	0.71 U	2 U	2 U	2 U	0.34 U	2 U	2 U	2 U	2 U	2 U	0.52 U	2 U	2 U	5 U	3.5 U	710 U
			SW8260CSIM	-	-	-	-	-	-	-	0.028 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table O-9
Pasco Landfill Zone B Groundwater Sample Results
Volatile Organic Compounds

Location	Date	Sample ID	Method	Ethyl tert-butyl ether (ETBE)	Ethylbenzene	Ethylene dibromide (1,2-Dibromoethane)	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	Isopropylbenzene (Cumene)	m,p-Xylene	Methyl ethyl ketone (2-Butanone)	Methyl iodide (Iodomethane)	Methyl tert-butyl ether (MTBE)	m-Xylene	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Amyl methyl ether (TAME)	tert-Butyl alcohol (2-Methyl-2-propanol)	tert-Butylbenzene	Tetrachloroethene (PCE)	Toluene	Total xylene (reported, not calculated)	Trichloroethene (TCE)	Trichlorofluoromethane (Fluorotrichloromethane)	Vinyl acetate	Vinyl chloride
			Groundwater Cleanup Levels							--													0.69	615		2.5	--		0.069
Location	Date	Sample ID	Method	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-26S (cont.)	04/26/12	PLF-MW26S-0412	SW8260B	4.1 U	2 U	-	-	2 U	4 U	10 U	-	2 U	-	2 U	2 U	2 U	2 U	2 U	1.5 U	2 U	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260BSIM	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U	-	-	0.053 U	-	-	0.032 U
			SW8270SIM	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	07/24/12	PLF-MW26S-0712	SW8260B	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	2 U	2 U	2 U	2 U	2 U	1.5 U	2 U	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260BSIM	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U	-	-	0.053 U	-	-	0.032 U
	07/24/12	PLF-MW926S-0712_FDUP	SW8270SIM	-	-	-	0.56 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/15/12	PLF-MW26S-1012	SW8260B	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	2 U	2 U	2 U	2 U	2 U	1.5 U	2 U	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260BSIM	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U	-	-	0.053 U	-	-	0.032 U
	01/30/13	PLF-MW26S-0113	SW8260C	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	2 U	2 U	2 U	2 U	2 U	1.5 U	-	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U	-	-	0.05 U	-	-	0.03 U
			SW8270DSIM	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926S-0113	SW8270DSIM	-	-	-	0.56 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/16/13	PLF-MW26S-0413	SW8260C	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	2 U	2 U	2 U	2 U	2 U	1.5 U	-	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U	-	-	0.05 U	-	-	0.03 U
			SW8270DSIM	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	01/23/14	PLF-MW926SR-0114	SW8270DSIM	-	-	-	0.56 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	07/24/13	PLF-MW26S-0713	SW8260C	4.1 U	2 U	-	R	2 U	4 U	10 U	-	2 U	-	2 U	2 U	2 U	2 U	2 U	1.5 U	-	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U	-	-	0.05 U	-	-	0.03 U
			SW8270DSIM	-	-	-	0.56 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		PLF-MW926SR-0713	SW8270DSIM	-	-	-	0.56 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/23/13	PLF-MW26SR-1013	SW8260C	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	2 U	2 U	2 U	2 U	2 U	1.5 U	-	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.02 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U	-	-	0.05 U	-	-	0.03 U
			SW8270DSIM	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	01/23/14	PLF-MW26SR-0114	SW8260C	4.1 U	2 U	-	-	2 U	4 U	10 U	-	2 U	-	2 U	2 U	2 U	2 U	2 U	1.5 U	-	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2 U	-	-	0.053 U	-	-	0.032 U
			SW8270DSIM	-	-	-	0.56 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	04/22/14	PLF-MW26SR-0414	SW8260C	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	2 UJ	2 U	2 U	2 U	2 U	1.5 U	-	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2 U	-	-	0.053 U	-	-	0.032 U
	07/22/14	PLF-MW26SR-0714	SW8260C	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	-	2 U	2 U	2 U	2 U	1.5 U	-	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2 UJ	-	-	0.053 U	-	-	0.032 U
	10/21/14	PLF-MW26SR-1014	SW8260C	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	-	2 U	2 U	2 U	2 U	1.5 U	-	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2 U	-	-	0.053 U	-	-	0.032 U
	01/21/15	PLF-MW26SR-0115	SW8260C	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	-	2 U	2 U	2 U	2 U	1.5 U	-	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2 U	-	-	**0.056**	-	-	0.032 U
	04/21/15	PLF-MW26SR-0415	SW8260C	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	-	2 U	2 U	2 U	2 U	1.5 U	-	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2 U	-	-	0.053 U	-	-	0.032 U
	07/16/15	PLF-MW26SR-0715	SW8260C	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	-	2 U	2 U	2 U	2 U	1.5 U	-	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2 U	-	-	0.053 U	-	-	0.032 U
	10/27/15	PLF-MW26SR-1015	SW8260C	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	-	2 U	2 U	2 U	2 U	1.5 U	-	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2 U	-	-	0.053 U	-	-	0.032 U
	01/28/16	PLF-MW26SR-0116	SW8260C	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	-	2 U	2 U	2 U	2 U	1.5 U	-	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2 U	-	-	0.053 U	-	-	0.032 U
	04/27/16	PLF-MW26SR-0416	SW8260C	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	-	2 U	2 U	2 U	2 U	1.5 U	-	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2 U	-	-	0.053 U	-	-	0.032 U
	07/19/16	PLF-MW26SR-0716	SW8260C	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	-	2 U	2 U	2 U	2 U	1.5 U	-	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2 U	-	-	0.053 U	-	-	0.032 U
	10/20/16	PLF-MW26SR-1016	SW8260C	4.1 U	2 U	-	0.56 U	2 U	4 U	10 U	-	2 U	-	2 U	2 U	2 U	2 U	2 U	1.5 U	-	13 U	2 U	-	2 U	-	-	2 U	-	-
			SW8260CSIM	-	-	0.024 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2 U	-	-	0.053 U	-	-	0.032 U

Table O-9
Pasco Landfill Zone B Groundwater Sample Results
Volatile Organic Compounds

Location	Date	Sample ID	Method	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloroethene, cis-	1,2-Dichloroethene, trans-	1,2-Dichloropropane	1,3,5-Trimethylbenzene (Mesitylene)	1,3-Dichlorobenzene	1,3-Dichloropropane	1,3-Dichloropropene, cis-	1,3-Dichloropropene, trans-	1,4-Dichloro-2-butene, trans-	1,4-Dichlorobenzene	2,2-Dichloropropane
			Groundwater Cleanup Levels		**200**		--	--	**0.057**	--							**0.38**		**16**		**--**								
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EE-4	02/12/93	PLF-GW-050	SW8240	-	5 U	5 U	5 U	5 U	5 U	-	-	-	-	-	-	-	5 U	5 U	-	-	5 U	-	-	-	5 U	5 U	-	-	-
	06/03/95	PLF-EE4-0695	SW8260	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 UJ	0.07 UJ	-	-	0.1 R	-	-	0.1 R	0.1 UJ	**0.31**	-	0.1 UJ	0.1 UJ	**0.021**	-	0.1 UJ	-	0.1 UJ	0.1 UJ	-	0.1 UJ	-
	09/23/95	PLF-EE4-0995	SW8260	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.07 U	-	-	0.1 UJ	-	-	0.5 U	0.1 UJ	0.1 U	-	0.1 U	0.1 U	0.1 U	-	0.1 UJ	-	0.1 U	0.1 U	0.5 UJ	0.1 UJ	-
	12/05/95	PLF-EE4-1295	SW8260	0.05 U	0.05 U	0.05 U	0.05 UJ	5 U	0.05 U	-	-	0.05 U	-	-	5 UJ	0.05 U	0.05 U	-	5 U	0.05 U	0.05 U	-	-	-	5 U	0.05 U	0.05 U	0.05 U	-
	03/23/96	PLF-EE4-0396	SW8260	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	0.07 U	-	-	0.1 U	-	-	0.5 UJ	0.1 U	0.1 U	-	0.1 U	0.1 U	0.1 U	-	0.1 U	-	0.1 U	0.1 U	0.5 U	0.1 U	-
EE-5	02/12/93	PLF-GW-051	SW8240	-	5 U	5 U	5 U	5 U	5 U	-	-	-	-	-	-	-	5 U	5 U	-	-	5 U	-	-	-	5 U	5 U	-	-	-
	06/03/95	PLF-EE5-0695	SW8260	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.07 UJ	-	-	0.1 R	-	-	0.1 R	0.1 UJ	**0.34**	-	0.1 UJ	0.1 UJ	0.1 UJ	-	0.1 UJ	-	0.1 UJ	0.1 UJ	-	0.1 UJ	-
	09/23/95	PLF-EE5-0995	SW8260	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.07 U	-	-	0.1 U	-	-	0.5 U	0.1 UJ	0.1 U	-	0.1 U	0.1 U	0.1 U	-	0.1 UJ	-	0.1 U	0.1 U	0.5 UJ	0.1 UJ	-
		PLF-EE95-0995_FDUP	SW8260	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.07 U	-	-	0.1 U	-	-	0.5 U	0.1 UJ	0.1 U	-	0.1 U	0.1 U	0.1 U	-	0.1 UJ	-	0.1 U	0.1 U	0.5 UJ	0.1 UJ	-
	12/05/95	PLF-EE5-1295	SW8260	0.05 U	0.05 U	0.05 U	0.05 UJ	5 UJ	0.05 U	-	-	0.05 U	-	-	5 UJ	0.05 U	0.05 U	-	5 UJ	0.05 U	0.05 U	-	-	-	5 UJ	0.05 U	0.05 U	0.05 U	-
	03/23/96	PLF-EE5-0396	SW8260	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	0.07 U	-	-	0.1 U	-	-	0.5 UJ	0.1 U	0.1 U	-	0.1 U	0.1 U	0.1 U	-	0.1 U	-	0.1 U	0.1 U	0.5 U	0.1 U	-

Table O-9
Pasco Landfill Zone B Groundwater Sample Results
Volatile Organic Compounds

Location	Date	Sample ID	Method	2-Chlorotoluene	2-Hexanone (Methyl butyl ketone)	4-Chlorotoluene	4-Methyl-2-pentanone (Methyl isobutyl ketone)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform (Tribromomethane)	Bromomethane (Methyl bromide)	Carbon disulfide	Carbon tetrachloride (Tetrachloromethane)	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Cymene, p- (4-Isopropyltoluene)	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane	Dichloromethane (Methylene chloride)	Diisopropylether (Isopropyl Ether)	Ethanol
			Groundwater Cleanup Levels		**--**		--	**--**			**0.79**						**--**		--	**--**	--						**5**		
Location	**Date**	**Sample ID**	**Method**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EE-4	02/12/93	PLF-GW-050	SW8240	-	5 U	-	5 U	**0.8 J**	-	-	5 U	-	-	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	10 U	-	5 U	-	-	**0.4 J**	-	-
	06/03/95	PLF-EE4-0695	SW8260	-	0.1 UJ	-	0.1 R	**2.9**	-	0.1 R	0.1 UJ	-	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 R	0.1 UJ	**0.18**	-	0.1 UJ	0.1 UJ	-	0.12 UJ	-	-
	09/23/95	PLF-EE4-0995	SW8260	-	0.5 UJ	-	0.5 R	0.5 UJ	-	0.5 U	0.1 UJ	-	0.1 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 UJ	0.5 UJ	0.1 U	0.1 U	-	0.1 U	0.1 U	-	**1.3**	-	-
	12/05/95	PLF-EE4-1295	SW8260	-	5 UJ	-	5 U	5 U	-	5 U	0.05 U	-	5 U	0.05 U	0.05 U	0.1 U	0.05 U	0.05 U	0.05 U	0.1 UJ	0.05 U	0.1 UJ	-	0.05 U	0.05 U	-	0.05 UJ	-	-
	03/23/96	PLF-EE4-0396	SW8260	-	0.5 R	-	0.5 R	0.5 R	-	1 R	0.1 U	-	0.1 U	0.1 U	0.1 U	0.1 U	**0.025**	0.1 U	0.1 U	0.1 R	0.1 U	0.1 U	-	0.1 U	0.1 U	-	0.1 U	-	-
EE-5	02/12/93	PLF-GW-051	SW8240	-	5 U	-	5 U	**0.2 J**	-	-	5 U	-	-	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	10 U	-	5 U	-	-	**0.4 J**	-	-
	06/03/95	PLF-EE5-0695	SW8260	-	**0.17**	-	0.1 R	**2.5**	-	0.1 UJ	0.1 UJ	-	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.1 R	0.1 UJ	**0.22**	-	0.1 UJ	0.1 UJ	-	0.13 UJ	-	-
	09/23/95	PLF-EE5-0995	SW8260	-	0.5 UJ	-	0.5 R	0.5 UJ	-	0.5 U	0.1 UJ	-	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.5 UJ	0.1 U	0.1 U	-	0.1 U	0.1 U	-	**1.4**	-	-
		PLF-EE95-0995_FDUP	SW8260	-	0.5 UJ	-	0.5 R	0.5 UJ	-	0.5 U	0.1 UJ	-	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.5 UJ	0.1 U	0.1 U	-	0.1 U	0.1 U	-	**1.2**	-	-
	12/05/95	PLF-EE5-1295	SW8260	-	5 UJ	-	5 UJ	5 UJ	-	5 UJ	0.05 U	-	5 UJ	0.05 U	0.05 U	0.1 U	0.05 U	0.05 U	0.05 U	0.1 UJ	0.05 U	0.1 UJ	-	0.05 U	0.05 U	-	0.05 UJ	-	-
	03/23/96	PLF-EE5-0396	SW8260	-	0.5 R	-	0.5 R	0.5 R	-	1 R	0.1 U	-	0.1 U	0.1 U	0.1 U	0.1 U	**0.021**	0.1 U	0.1 U	0.1 R	0.1 U	0.1 U	-	0.1 U	0.1 U	-	0.1 U	-	-

Table O-9
Pasco Landfill Zone B Groundwater Sample Results
Volatile Organic Compounds

Location	Date	Sample ID	Method	Ethyl tert-butyl ether (ETBE)	Ethylbenzene	Ethylene dibromide (1,2-Dibromoethane)	Hexachlorobutadiene (Hexachloro-1,3-butadiene)	Isopropylbenzene (Cumene)	m,p-Xylene	Methyl ethyl ketone (2-Butanone)	Methyl iodide (Iodomethane)	Methyl tert-butyl ether (MTBE)	m-Xylene	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Amyl methyl ether (TAME)	tert-Butyl alcohol (2-Methyl-2-propanol)	tert-Butylbenzene	Tetrachloroethene (PCE)	Toluene	Total xylene (reported, not calculated)	Trichloroethene (TCE)	Trichlorofluoromethane (Fluorotrichloromethane)	Vinyl acetate	Vinyl chloride
Groundwater Cleanup Levels										--													**0.69**	**615**		**2.5**	**--**		**0.069**
Location	**Date**	**Sample ID**	**Method**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EE-4	02/12/93	PLF-GW-050	SW8240	-	5 U	-	-	-	-	25 U	-	-	-	-	-	-	-	-	5 U	-	-	-	5 U	5 U	10 U	5 U	-	25 U	10 U
	06/03/95	PLF-EE4-0695	SW8260	-	0.1 UJ	0.1 UJ	-	-	-	**0.32**	0.1 UJ	-	-	-	-	-	0.1 UJ	-	0.1 UJ	-	-	-	**0.035**	**0.034**	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.02 UJ
	09/23/95	PLF-EE4-0995	SW8260	-	0.1 UJ	0.1 U	-	-	-	0.5 UJ	0.1 U	-	-	-	-	-	0.1 UJ	-	0.1 U	-	-	-	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U	0.02 U
	12/05/95	PLF-EE4-1295	SW8260	-	0.05 U	0.05 U	-	-	-	5.1 UJ	0.05 UJ	-	-	-	-	-	0.05 U	-	0.05 U	-	-	-	0.05 U	0.05 U	0.05 U	0.05 U	0.1 U	5 U	0.02 U
	03/23/96	PLF-EE4-0396	SW8260	-	0.1 U	0.1 U	-	-	-	0.5 R	1 U	-	-	-	-	-	0.1 U	-	0.1 U	-	-	-	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.02 U
EE-5	02/12/93	PLF-GW-051	SW8240	-	5 U	-	-	-	-	25 U	-	-	-	-	-	-	-	-	5 U	-	-	-	5 U	5 U	10 U	5 U	-	25 U	10 U
	06/03/95	PLF-EE5-0695	SW8260	-	0.1 UJ	0.1 UJ	-	-	-	**0.26**	0.1 UJ	-	-	-	-	-	0.1 UJ	-	0.1 UJ	-	-	-	0.1 UJ	**0.052**	0.1 UJ	0.1 UJ	0.1 UJ	0.1 UJ	0.02 UJ
	09/23/95	PLF-EE5-0995	SW8260	-	0.1 UJ	0.1 U	-	-	-	0.5 UJ	0.1 U	-	-	-	-	-	0.1 UJ	-	0.1 UJ	-	-	-	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U	0.02 U
		PLF-EE95-0995_FDUP	SW8260	-	0.1 UJ	0.1 U	-	-	-	0.5 UJ	0.1 U	-	-	-	-	-	0.1 UJ	-	0.1 UJ	-	-	-	0.1 U	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U	0.02 U
	12/05/95	PLF-EE5-1295	SW8260	-	0.05 U	0.05 U	-	-	-	5.3 UJ	0.05 UJ	-	-	-	-	-	0.05 U	-	0.05 U	-	-	-	0.05 U	0.05 U	0.05 U	0.05 U	0.1 U	5 UJ	0.02 U
	03/23/96	PLF-EE5-0396	SW8260	-	0.1 U	0.1 U	-	-	-	0.5 R	1 U	-	-	-	-	-	0.1 U	-	0.1 U	-	-	-	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.02 U

Notes:

µg/L = micrograms per liter

Bold indicates detetected concentration.

\- = not tested

Blue highlight indicates that detected concentration exceeds associated screening level (Table 4.5.1-1)

U = Analyte was not detected above the reported sample quantitation limit.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R = The result was rejected