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March 22, 2011

Bob Whittier, On-Scene Coordinator
United States Environmental Protection Agency, Region 10
Alaska Operations Office
222 West 7th Avenue, #19
Anchorage, Alaska 99513

RE: Contract No. EP-S7-06-02, Technical Direction Document No. 10-12-0003
Removal Site Evaluation Report, Post Road Drum Site, Anchorage, Alaska

Dear Mr. Whittier:

Enclosed please find the final Removal Site Evaluation Report for the Post Road Drum Site in Anchorage, Alaska. If you have any questions or comments, please call Len Marcus at (907) 257-5000 or me at (206) 920-1739.

Sincerely,

ECOLOGY AND ENVIRONMENT, INC.

Steven G. Hall
START-3 Project Leader

enclosure

cc: Len Marcus, START-3 Project Manager, Anchorage, Alaska

REMOVAL SITE EVALUATION REPORT

**Post Road Drum Site
Anchorage, Alaska
TDD: 10-12-0003**



Prepared for:

U.S. Environmental Protection Agency, Region 10
222 W. 7th Avenue, # 19
Anchorage, Alaska 99513

Prepared by:

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March 2011

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List of Abbreviations

Abbreviation	Definition
%	percent
%R	percent recovery
ARRC	Alaska Railroad Corporation
BS	blank spike
BTEX	benzene, toluene, ethylbenzene, and xylenes
CID	Criminal Investigation Division
DQO	data quality objective
E & E	Ecology and Environment, Inc.
EPA	United States Environmental Protection Agency
°F	degrees Fahrenheit
J	estimated concentration
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MS	matrix spike
MSD	matrix spike duplicate
MSDS	material safety data sheet
MSSI	Midnight Sun Services, Inc.
PID	photo-ionization detector
PPMI	Precision Pavement Markings, Inc.
PRP	Potentially Responsible Party
QA	quality assurance
QC	quality control
RCRA	Resource Conservation and Recovery Act
RPD	relative percent difference
RSE	Removal Site Evaluation
RS&E	Restoration Science & Engineering
SSSP	site-specific sampling plan
START	Superfund Technical Assessment and Response Team
SVOC	semi-volatile organic compound

List of Abbreviations (continued)

Abbreviation	Definition
TAL	Target Analyte List
TCLP	Toxicity Characteristic Leaching Procedure
TDD	Technical Direction Document
µg/kg	micrograms per kilogram
UJ	estimated sample quantitation limit
VOC	volatile organic compound

1 Introduction

The United States Environmental Protection Agency (EPA) performed a removal site evaluation (RSE) at the Post Road Drum Site in Anchorage, Alaska. The site consists of an outdoor storage lot where several hundred 55-gallon drums and other containers have been stored since 2005 or 2006. The site is leased by Precision Pavement Markings, Inc. (PPMI), a pavement marking company specializing in the application of highway, runway, and parking lot markings. PPMI and its owner William Duran Vizzerra Jr is considered the potentially responsible party (PRP) for the Post Road Drum Site; however, the containers at this site are attributed to Midnight Sun Services, Inc. (MSSI), a company also operated by Mr. Vizzerra prior to PPMI. In late 2010, EPA learned that Mr. Vizzerra had stopped making rental payments for the storage lot in 2009 and had also attempted to improperly dispose of some of the drums at a municipal landfill. Information provided to EPA by the PRP before the RSE indicated that containers at the site included hazardous materials. Visual observations made by EPA during pre-RSE site visits corroborated this information. Therefore, there were concerns that abandonment or improper disposal of hazardous materials was taking place.

EPA tasked Ecology and Environment, Inc. (E & E) to perform the RSE under Superfund Technical Assessment and Response Team (START)-3 contract number EP-S7-06-02, Technical Direction Document (TDD) 10-12-0003. Field work for the RSE was performed from December 15 through 17, 2010. The scope of the RSE field work was to inventory the containers on site, collect samples from selected containers and perform on-site hazard categorization sample screening, and submit representative samples for off-site laboratory confirmation analysis. The resulting sample data were used in determining whether materials at the site meet the EPA's Resource Conservation and Recovery Act (RCRA) hazardous waste criteria. No EPA hazardous waste generation or storage permits are known to be associated with the MSSI or PPMI businesses or the site address. The EPA Criminal Investigation Division (CID) performed site activities separate to, but concurrent with, the RSE. CID activities at the site are not addressed in this report.

This report is organized into the following sections: Introduction (Section 1), Site Description and Background (Section 2), Removal Site Evaluation Activities (Section 3), Quality Assurance / Quality Control (Section 4), Summary and Conclusions (Section 5), and References (Section 6). Selected photographs of the site and RSE activities are included in Appendix A.

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2 Site Description and Background

2.1 Site Location

Site Name	Post Road Drum Site
Property Owner	Alaska Railroad Corporation; leased to SAN, LLC; rented to Precision Pavement Markings, Inc.
Business Information	Operated by Precision Pavement Markings, Inc. Business owner: William Duran Vizzerra Jr.
SSID #	10ZZ
CERCLIS #	Not applicable
Location	200 N. Post Road, Anchorage, Alaska 99501
Latitude	61.223464°
Longitude	-149.861306°

The Post Road Drum Site is at 200 N. Post Road, within Anchorage, Alaska (Figure 2-1). The site is located several hundred feet west of N. Post Road behind a warehouse building that fronts the road. The site consists of an outdoor, fenced storage lot. The storage lot has been used to store drums and other containers of paint-related material since 2005 or 2006 by PPMI, a road painting business. PPMI conducted road painting operations at jobsite locations in Alaska and it is believed that the site itself was only used for materials storage.

2.2 Site Layout

Figure 2-2 illustrates the site as it was found during the RSE. The entire site is located within an approximate 90-foot by 100-foot fenced yard. The site area is flat and there are no permanent structures. The ground surface was covered with snow at the time of the RSE but is believed to be unpaved and without any engineered drainage features or pathways. The following vehicles and trailers were found within the site during the RSE:

1. A parked flatbed trailer displaying Alaska license plate number 4927SE
2. A white, Chevrolet flatbed truck displaying Alaska license plate number DVK334
3. An orange, Ford flatbed truck displaying Alaska license plate number DVN368
4. A parked box trailer displaying Alaska license plate number 2888SJ
5. A parked box trailer displaying Washington license plate number 7774LR

The drums and other containers found at this site during the RSE were either located on the ground (individually, tightly-grouped, or stacked) or were situated on top of or under the vehicles listed above. The elevated or stacked condition of most of the containers deemed it necessary to move them to provide safe conditions for inventorying and sampling during the RSE. In order to track the point of origin of any containers moved during the RSE, the following area-specific location identifiers were used during inventorying:

- **GRE:** “ground east,” for containers originating on the ground in the east portion of the site;

- **GRW:** “ground west,” for containers originating on the ground in the west portion of the site;
- **SE:** for containers originating from the flatbed trailer displaying Alaska license plate number 4927SE.

2.3 Surrounding Land Uses

The site is located within a commercial and industrial portion of Anchorage. Several active businesses are located as close as 50 feet away. None of these other businesses are affiliated with the site. Ship Creek is located approximately 200 feet south of the site. Alaska Railroad Corporation (ARRC) rail lines and key railroad support facilities lie within one mile of the site. The public-use Ship Creek trail passes within several hundred feet of the site. Residential neighborhoods begin approximately one-half mile from the site, though it is possible that there may be intermittent residents closer to the site.

2.4 Site History, Operations, and Ownership¹

The site is located on private land owned by the ARRC. ARRC leases the property to SAN, LLC, and SAN, LLC has subleased the site property to PPMI since 2006. PPMI is a pavement marking company specializing in the application of highway, runway, and parking lot markings (EPA 2010).

In November 2010, EPA received a citizen complaint that the owner of PPMI, Mr. William Duran Vizzerra Jr., had moved away from Alaska, leaving containers of unknown materials leaking onto the ground at the 200 N. Post Road storage lot site. On November 10, 2010, EPA visited the site and noticed an estimated 400 containers (mostly 55-gallon drums) present. The containers appeared to be in poor condition (damaged or bulging) and drum labels including “flammable liquid” and “organic peroxide” were observed. The five vehicles listed in Section 2.2 were noted present (EPA 2010).

During the CID investigation, Bruce Chambers, the owner of SAN, LLC, advised EPA CID personnel that his company subleased the site property to PPMI beginning on May 31, 2006. Mr. Chambers informed CID that the monthly rent for the lot had not been paid by PPMI for over a year, since October 1, 2009. Mr. Chambers also stated that the sublease was set to expire on November 30, 2010 (EPA 2010).

On November 18, 2010, an EPA CID agent interviewed PPMI owner Mr. Vizzerra in Arizona. Site photographs taken by EPA CID personnel on November 10, 2010, were shown to Mr. Vizzerra then. Mr. Vizzerra indicated that all of the wastes depicted in the photographs were generated by MSSSI, a company he previously owned but closed due to financial difficulties. Mr. Vizzerra stated that about one-half of the containers visible in the photographs contained hazardous waste and that, in 2004 or 2005, he received an estimate of approximately \$60,000 for the disposal of that waste. He took no disposal action at the time and MSSSI closed sometime after that. He later started up the PPMI business. Mr. Vizzerra volunteered that in or around 2005, he transported at least one flatbed truck of drums and some pallets from his former

¹ All investigative information in this report attributable to EPA CID is referenced from the publically-available search warrant affidavit filed for the Post Road Drum Site by EPA CID Special Agent Frank Powers (EPA 2010).

business location, at 1702 Ship Avenue, Anchorage, Alaska, to the 200 N. Post Road storage lot site. He stated that the materials transported then included toluene and methyl paint from road stripping operations as well as some non-hazardous materials. During this interview, Mr. Vizzerra indicated that the drums depicted in the November 10, 2010, photographs had been stored at the 200 N. Post Road site since approximately 2005. He also indicated, though, that during summer 2010 he directed an employee to make between five and six trips to the landfill to dispose of some of the drums, but the employee returned with some of the drums because the landfill did not accept hazardous waste. Mr. Vizzerra confirmed that he had stopped paying rent at the 200 N. Post Road storage lot site (EPA 2010).

EPA CID later spoke to a representative of the Matanuska-Susitna Borough's Central Landfill in Palmer, Alaska, and learned that on October 15, 2009, a truck and trailer with "Precision Pavement Markings" identification arrived at the landfill with approximately 40 drums, some of which displayed "flammable" and "corrosive" labels. The landfill is a municipal solid waste facility, and while household hazardous waste and hazardous wastes from conditionally exempt small quantity generators are accepted, the PPMI load did not qualify as either and was turned away (EPA 2010).

In late November 2010, following the EPA CID interview, Mr. Vizzerra contacted the 200 N. Post Road storage lot landlord (Bruce Chambers) and requested a month-to-month renewal of his sublease of that property. Mr. Vizzerra reportedly stated that he was not abandoning the drums located there and wanted the extra time to look into disposing of the drums (EPA 2010).

There is no available information on site usage prior to the 2005 involvement of MSSSI.

A business license search under the State of Alaska Department of Commerce, Community and Economic Development's website revealed that MSSSI maintained a business license in Alaska from 1997 to 2004. Two business licenses appear under the PPMI name: one was active from 2004 to 2006 and the other from 2005 to 2009. A website for PPMI indicates the company is based in Gilbert, Arizona (<http://www.precisionpmi.com>). The website includes references to projects in Alaska.



2.5 Regulatory and Enforcement History

EPA research determined that neither MSSSI or PPMI, or the 200 N. Post Road address, has filed for or received a RCRA permit or notified regulatory authorities about the waste stored there (EPA 2010).

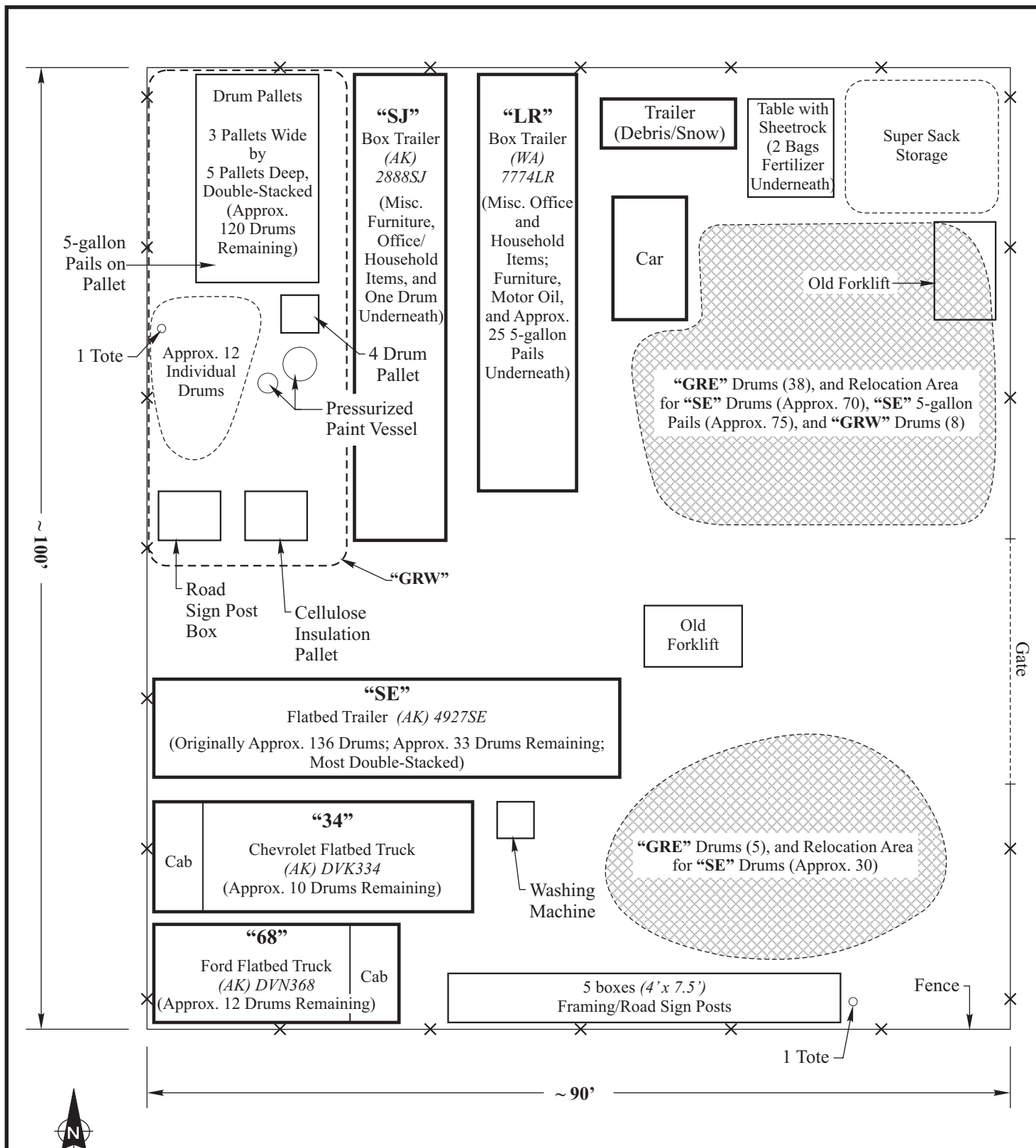
There are no known environmental or regulatory investigations of this site by EPA or other agencies prior to implementation of this RSE project and the related EPA CID investigation.

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 ecology and environment, inc. Global Specialists in the Environment Seattle, Washington	POST ROAD DRUM SITE Anchorage, Alaska		Figure 2-1 SITE LOCATION MAP		
	 Approximate Scale in Feet		Date: 2/22/10	Drawn by: AES	10:START-3\10120003\fig 2-1

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Note: Some features are not to scale.

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3 Removal Site Evaluation Activities

Field activities for the Post Road Drum RSE occurred from December 15 through 17, 2010, with demobilization from the site occurring on December 18, 2010. EPA CID personnel were also on site during the RSE conducting separate site investigation activities. Access to the site was obtained under an EPA access agreement with both the PRP and the current site property lease holder (Bruce Chambers/SAN, LLC). Photographs of site conditions and RSE activities are contained in Appendix A.

No persons directly affiliated with the MSSSI or PPMI businesses were present during the RSE. However, Restoration Science & Engineering (RS&E) of Anchorage, Alaska, was retained as a PRP representative. An employee of RS&E observed EPA activities from outside the site fence line each day of the RSE project.

Ambient conditions at the time of the RSE consisted of short daylight hours (approximately 5 hours, 30 minutes) and low temperatures (ranging from at or below 0 degrees Fahrenheit [°F] to approximately 10 degrees °F).

Except as noted elsewhere in this section, the RSE was performed in accordance with the site-specific sampling plan (SSSP; E & E 2010).

3.1 Container Staging

Pre-RSE observations showed that a majority of the site's containers were either elevated on top of flatbed trucks and trailers or were on the ground in tightly-packed groups. Many of these drums were also double-stacked (two levels high), and icy conditions existed around all vehicles. Only a few drums on the ground appeared to be spaced apart enough for adequate examination and sampling access. Due to a lack of safe access for inspecting, inventorying, or sampling the majority of the containers at the site, START retained a subcontractor to lower and stage the elevated, stacked, or tightly-packed drums. Containers in need of staging were moved to the eastern portion of the site where open space allowed for placement for easier access.

Drum staging work began on December 15, 2010. Two subcontracted personnel with a forklift were utilized for this effort. Staging work began at the flatbed trailer with license plate 4927SE ("SE" trailer), which held the most containers of all the vehicles and which was also the most accessible for container removal. Almost all containers on this vehicle were found to be already sitting on pallets. However, upon commencing the staging work, the pallets were found to be too degraded or damaged to allow safe movement while still holding containers. As a result, the drums and smaller containers on this trailer had to be moved by forklift one at a time, which extended the time needed for this effort.

Staging work was concluded on December 16, 2010, when, in accordance with project objectives and based on the project schedule, a representative portion of the containers had been successfully re-located on site for inventorying and sampling. Table 3-1 summarizes the status of container staging activities accomplished during the RSE.

3.2 Container Inventorying

Container inventorying occurred on December 15 and 16, 2010, concurrent with drum staging activities. In general, only containers that were staged were inventoried, while containers that were not staged, such as those on the flatbed trucks, and some of the “SE” trailer and GRW area containers, were not inventoried or included in the sampling program. Therefore, inventorying was conducted only on containers that were safely accessible. START personnel performed the inventorying, which consisted of issuing unique inventory numbers to the accessible containers and filling out a corresponding inventory data sheet per container. Each inventory number was formatted as “## - XXX”, which represented a discrete number followed by an area locator code (described in Section 2-2). Inventory numbers started consecutively at “1” within each location area. Inventory numbers were applied using grease pens or similar markers to the outside of each inventoried container. The status of the inventory effort is summarized in Table 3-1.

Table 3-1 Container Staging and Inventorying Summary Post Road Drum Site, Anchorage, Alaska				
Area of Site or Storage Vehicle	Number of Containers	Staging Results	Number of Containers Inventoried	Inventory Numbers Applied
Ground-based containers found in the eastern portion of site (designated as “GRE” containers)	43 drums (38 in north group and 5 in south group)	left in original areas (north group separated out)	43 drums	1-GRE through 43-GRE
Ground-based containers found in the western portion of site (designated as “GRW” containers)	Approximately 135 drums, 15 x 5-gallon pails, 1 tote, 2 pressurized paint vessels	8 drums moved to northern relocation area	32 drums, 4 x 5-gallon pails, 1 pressurized paint vessel	1-GRW through 37-GRW
Flatbed trailer; license plate AK #4927SE (designated as “SE” containers)	Approximately 136 drums, 100 x 5-gallon pails	103 drums and approx. 75 x 5-gallon pails staged at two relocation areas	103 drums	1-SE through 103-SE
Flatbed truck; white Chevrolet, license plate #DVK334 (AK)	Approximately 10 drums	None staged	0	Not applicable
Flatbed truck; orange Ford, license plate #DVN368 (AK)	Approximately 12 drums	None staged	0	Not applicable
Parked box trailer; license plate #2888SJ (AK)	none observed inside; approx. 25 x 5-gallon pails underneath	None staged	0	Not applicable
Parked box trailer; license plate #7774LR (WA)	none observed inside; 1 drum underneath	None staged	0	Not applicable

Drum conditions ranged from good to poor. Many drums exhibited obvious signs of damage (dented or distorted surfaces) and some displayed holes or other signs of being breached. Most drums were found sealed, though some had no lid and appeared to contain non-hazardous solid waste (i.e. plastic bottles, paper). At least one-half of the containers appeared to contain some

original-content markings or identification on the outside. The more common markings observed on drums were for the TMT-Pathway products DURA-STRIPE[®], NORLINE[®], and MORLINE[®] paints, DURA-STRIPE[®] PLUS initiator, and DURA-STRIPE[®] catalyst. The drums with these product names also displayed flammable liquid or organic peroxide labels. Some 5-gallon pails were labeled as 3M's STAMARK[™] P-50 surface preparation adhesive. Labeling for Ennis Paint company's traffic paint and Duraset products were also noted on containers. Some of these product names matched material data safety sheets that had been provided to EPA and START prior to implementing the RSE. Numerous drums also displayed spray-painted markings or words. The letter "W" in spray paint was commonly noticed. RSE field personnel surmised this may have stood for "waste," though this was never confirmed. The word "waste" was also noted spray-painted on some drums.

In preparation for container sampling, numerous drums were opened to view the amount and appearance of the contents. An estimated 50 drums were opened and visually examined. Because of the winter conditions, it was not always possible to determine if the contents were a solid material to begin with or were frozen solid. However, many drums contained liquids (some brightly colored, indicating a likely paint material) that were found in a fluid, though possibly thicker than normal, state. Container content levels varied from near-empty to near-full. During drum opening, air monitoring readings were taken over the openings using a photoionization detector (PID) instrument. Instrument readings varied from no readings to readings of several hundred parts per million and were typically detectable only immediately surrounding the drum opening.

As indicated in Table 3-1, START inventoried 183 containers (178 drums, four 5-gallon pails, and one pressurized paint vessel). The majority of those had to be staged to be made accessible for inventorying. It is estimated that there are another approximately 160 drums, 130 5-gallon pails, two approximately 250-gallon storage totes, and one more pressurized paint vessel at the site that did not get inventoried (or sampled) due to access and time constraints.

3.3 Container Sampling: Hazard Categorization Screening

The initial RSE objectives involved opening approximately 10 percent of the containers present and collecting samples for on-site hazard categorization screening. The screening was intended to identify a sub-set of containers from which to submit representative samples for laboratory conformation analysis. Due to time constraints, only three drums were sampled for on-site hazard categorization screening: container numbers 1-SE (displayed only a "W" marking and contained a yellow liquid), 9-SE (marked as MORLINE[®] white paint and contained a tan-gray liquid), and 22-SE (marked as DURA-STRIPE[®] catalyst, organic peroxide, flammable, and "W", and contained a white and brown chunky solid). These containers were selected based on their differing outside markings and contents. START performed sampling and hazard categorization screening of these three drums on December 16, 2010.

The hazard categorization samples were collected as individual grab samples using dedicated, clean sampling devices consisting either of glass thieving tubes or stainless steel spoons. The type of device used for sampling was based on the matrix or consistency of the material being sampled. Sample material was immediately transferred into a new, pre-cleaned 4 or 8-ounce

glass sample jar upon extraction. Additionally, the hazard categorization samples were collected as split samples for PRP submittal purposes (see Section 3.7).

A copy of the hazard categorization data summary sheet containing the screening results is contained in Appendix B. The only hazard categorization screening results of note are that the samples from container numbers 1-SE and 9-SE displayed flammable characteristics.

The wintertime conditions during the RSE likely affected the physical or chemical properties of container contents, and thus RSE findings. The cold or frozen nature of most containers often inhibited the ability to examine or sample the entire profile of material in a drum. As a result, it was not always possible to discern whether a container contained homogenized material or multiple phases, and in some cases, the frozen material could not be penetrated very deeply for sampling. Because of these limitations, all collected samples were obtained typically from the top six inches of material, and there was little or no ability to detect phases. Similarly, on-site hazard categorization screening results, air monitoring instrument readings, and container content descriptions were likely all influenced by the prevailing ambient conditions.

3.4 Container Sampling: Laboratory Confirmation Analysis

All confirmation laboratory analysis samples were collected by START on December 17, 2010. Seven drums were selected for collection of confirmation laboratory analysis samples. One drum, number SE-72, was selected for field duplicate sample collection, resulting in the submittal and laboratory analysis of a total of eight samples. Table 3-2 summarizes the sample collection information and the analytical parameters for each sample. The samples appeared to be product material, though it could not be determined whether the product was unused or was used or otherwise altered.

Factors used in the selection of laboratory confirmation analysis samples included hazard categorization screening results, representativeness of the different drum identification markings, representativeness of the different type of materials observed in the drums, and a bias towards those containers exhibiting higher PID readings.

All laboratory confirmation analysis samples were collected in a manner similar to that described for the hazard categorization samples in Section 3.3. All laboratory confirmation analysis samples were also collected as split samples for PRP submittal purposes (see Section 3.7).

All drums that had been opened during the RSE for examination or sampling were sealed closed at the conclusion of the project.

Table 3-2 Laboratory Sample Collection Summary Post Road Drum Site, Anchorage, Alaska					
Container No.	Sample No.	Container Markings	Contents	Laboratory Analyses (see Section 3.5 for analytical methods)	Comments
1-SE	1012-0001	Spray-painted “W”	Yellow, pasty gel	VOC, SVOC, Flashpoint, Oxidizer Screening	55-gallon drum
3-SE	1012-0002	Ennis Paint, Duraset Comp B, organic peroxide	Amber-colored pasty gel	VOC, SVOC, Flashpoint, Oxidizer Screening	55-gallon drum
22-GRE	1012-0003	Dura-Stripe® yellow traffic paint. Spray-painted “W”	Thick yellow liquid	VOC, SVOC, TAL Metals, Flashpoint, Oxidizer Screening	55-gallon drum
8-GRE	1012-0004	White paint, flammable	Thick white liquid	VOC, SVOC, TAL Metals, Flashpoint, Oxidizer Screening	55-gallon drum
84-SE	1012-0005	Dura-Stripe® Catalyst, yellow, organic peroxide; spray-painted “W”	Amber-colored sludge	VOC, SVOC, Flashpoint, Oxidizer Screening	55-gallon drum
85-SE	1012-0006	Spray-painted “HW”; flammable liquid	Thick yellow liquid; amber top liquid layer	VOC, SVOC, TAL Metals, Flashpoint, Oxidizer Screening	55-gallon drum
72-SE	1012-0007	Stenciled on lid: S80277 T9243B	Viscous, black oily liquid	VOC, SVOC, TAL Metals, Flashpoint	55-gallon drum. Field duplicate samples.
272-SE	1012-0008				

3.5 Laboratory Analysis Results

Laboratory confirmation analysis of the RSE samples was performed by TestAmerica Laboratories, Inc. in Tacoma, Washington. The following analytical methods were utilized:

- Volatile Organic Compounds (VOC) - EPA SW846 Method (EPA 8260)
- Semi Volatile Organic Compounds (SVOC) - EPA SW846 Method (EPA 8270)
- Target Analyte List (TAL) Metals - EPA 6000/7000
- Flashpoint - EPA Method 1020A
- Oxidizer Screen (hazard categorization test method)

Table 3-2 indicates the analytical methods applied to each sample. Results for each analytical procedure are discussed in the subsections below and are contained in Tables 3-3 through 3-6. Appendix C contains the analytical data results and accompanying data validation memos. The data is arranged in Appendix C in the same order as described below.

3.5.1 VOC Results

VOC results are listed in Table 3-3. All eight RSE samples were analyzed for VOCs. Sixteen different VOCs were detected in all, with the number detected per sample ranging between four

and 14 compounds. The duplicate samples from container number 72-SE (used oil-like material) yielded the most VOC detections at 14 compounds each (the same 14 compounds).

The VOC compounds benzene, toluene, ethylbenzene, and o- and m,p-xylene (BTEX) were detected along with 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 4-isopropyltoluene, chlorobenzene, isopropylbenzene, methylene chloride, naphthalene, n-butylbenzene, n-propylbenzene, sec-butylbenzene, and tetrachloroethene. Almost all of these compounds are petroleum-related chemicals. These VOCs are not unexpected in the RSE samples given the nature of the materials at the site.

The only VOC detections other than the petroleum-related compounds are methylene chloride and tetrachloroethene. Methylene chloride is known as a solvent or paint stripper compound. Tetrachloroethene (also known as PERC, tetrachloroethylene, perchloroethylene, or PCE) was detected only in the field duplicate samples numbers 72-SE and 272-SE. That sample had a used oil-like appearance. Tetrachloroethene is used for degreasing metal parts and in manufacturing other chemicals. Common use as a parts degreaser often leads to tetrachloroethene being found in used oil.

Benzene is the only VOC regulated by EPA under the Toxicity Characteristic Leaching Procedure (TCLP) toxicity characteristic that was detected in concentrations that could exceed regulatory limits. Although TCLP analysis was not performed on RSE samples, the RSE sample results were used for the TCLP comparison below in accordance with EPA guidance. This comparison is based on applying total waste analytical results to make a TCLP determination and also based on the classification of the sample material as a solid (no filterable liquid). The TCLP regulatory limit for benzene is 0.5 milligrams per liter (mg/L).

Benzene was detected in container number 1-SE at 100,000 micrograms per kilogram ($\mu\text{g/kg}$; or 100 milligrams per kilogram [mg/kg]), in container number 3-SE at 2,700,000 $\mu\text{g/kg}$ (or 2,700 mg/kg), and in container number 84-SE at 960,000 $\mu\text{g/kg}$ (or 960 mg/kg). When dividing the RSE sample concentrations in mg/kg units by 20, providing a maximum theoretical leachate concentration that reflects the 20:1 ratio of extraction fluid to solid used in TCLP analysis, the benzene results for those three samples become 5, 135, and 48 mg/kg (equivalent to mg/L for this comparison) respectively and are all above the TCLP regulatory limit.

Two other VOCs detected in RSE samples are regulated as TCLP contaminants: chlorobenzene and tetrachloroethene. However, comparisons as described above to obtain theoretical leachate concentrations found that the results of these two other VOCs were not high enough to exceed the TCLP regulatory limits.

3.5.2 SVOC Results

SVOC results are listed in Table 3-4. All eight RSE samples were analyzed for SVOCs. Eight different SVOCs were detected: 1-methylnaphthalene, 2-chlorophenol, 2-methylnaphthalene, benzoic acid, bis(2-ethylhexyl)phthalate, naphthalene, phenanthrene, and phenol. Two samples contained no detected SVOCs, while the other five samples contained between one and five of the detected SVOCs. The field duplicate samples from container number 72-SE (used oil-like material) yielded the most SVOC detections at five compounds each (the same five compounds).

The polycyclic aromatic hydrocarbons naphthalene and phenanthrene were both detected only in the field duplicate samples from container number 72-SE (used oil-like material). These two compounds, along with two naphthalene-related compounds (1-methylnaphthalene and 2-methylnaphthalene), comprise four of the eight detected SVOC chemicals. Both naphthalene and phenanthrene are petroleum derivatives and are not unexpected in either oil or paint-related materials.

Two phenol compounds were detected in two different samples. Phenol is used in the production of plastics and resins and as a disinfectant and antiseptic

Bis(2-ethylhexyl)phthalate was detected in three different samples. This chemical is a plasticizer and is found in inks, coatings, pesticides, cosmetics, and vacuum pump oil.

Benzoic acid was detected in three different samples and is used in polymerization and as a plasticizer in adhesive formulations.

The detected SVOC compounds are expected components of oil or paint-related materials and are likely constituents of the various original products held in the sampled drums. None of the SVOCs detected in the RSE samples are regulated as TCLP contaminants.

3.5.3 TAL Metals Results

TAL metal results are listed in Table 3-5. Five of the eight RSE samples were analyzed for the 23 TAL metals, and 18 different metals were detected in RSE samples. All samples contained between 10 and 13 detected metals each. The suspected product samples (container numbers 8-GRE, 22-GRE, and 85-SE) typically contained higher metals concentrations than the suspected used oil duplicate samples (from container number 72-SE).

Metals are known to be used as pigments in paints and paint-related materials and are not unexpected in RSE samples. They can also appear in used oil as shavings from metal engine parts.

Chromium and lead are the only metals regulated by EPA under the TCLP toxicity characteristic that were detected in concentrations that could exceed regulatory limits. Although TCLP analysis was not performed on RSE samples, the total metals results were used for the TCLP comparison below in accordance with EPA guidance. This comparison is based on applying total waste analytical results to make a TCLP determination and the classification of the sample material as a solid (no filterable liquid).

Chromium was detected in container number 22-GRE at 10,000 mg/kg and in container number 85-SE at 1,600 mg/kg. The TCLP regulatory limit for chromium is 5.0 mg/L. When dividing the RSE sample concentrations by 20, providing a maximum theoretical leachate concentration that reflects the 20:1 ratio of extraction fluid to solid used in TCLP analysis, the chromium results for those two samples become 500 and 80 mg/kg (equivalent to mg/L) respectively, above the TCLP regulatory limit.

Lead was detected in container number 22-GRE at 37,000 mg/kg and in container number 85-SE at 15,000 mg/kg. Data validation, however, found these lead data to be estimated with an unknown bias. The TCLP regulatory limit for lead is 5.0 mg/L. When dividing the RSE sample concentrations by 20, the lead results for those two samples become 1,850 and 750 mg/kg (equivalent to mg/L) respectively and are above the TCLP regulatory limit.

Three other metals detected in RSE samples are regulated as TCLP contaminants: barium, cadmium, and silver. However, comparisons as previously described to obtain theoretical leachate concentrations found that the results of these other metals were not high enough to exceed the TCLP regulatory limits.

3.5.4 Flashpoint Results

Flashpoint results are listed in Table 3-6. All eight RSE samples were tested for flashpoint. Three samples (from container numbers 1-SE, 22-GRE, and 8-GRE) displayed a flash point temperature less than 140 °F, which is the criteria for the hazardous waste characteristic of ignitability under EPA's RCRA regulations (40 CFR § 261.21). The other five samples had flashpoints higher than the RCRA criteria. Therefore, it appears that three samples meet EPA's RCRA characteristic hazardous waste criteria for ignitability.

Of the seven containers that were the source of the laboratory analysis samples, three contained flammable liquid markings on the outside. Of these three containers, two yielded ignitability results meeting the RCRA criteria, and the third did not.

The strong yellow or white coloration of the three ignitability-positive samples indicates they are probably paint materials, though at least one other paint-like sample (container number 85-SE) did not yield a flashpoint meeting the RCRA ignitability criteria.

3.5.5 Oxidizer Screening Results

Oxidizer screen results are listed in Table 3-6. Six of the eight RSE samples underwent oxidizer screening. The two samples not tested for this parameter consisted of the duplicate used oil-like samples (container number 72-SE). Two samples, from container numbers 22-GRE and 85-SE, revealed positive oxidizer screening results. The material inside these two drums was similar (thick yellow liquid; likely paint) but exterior markings between the two were less similar. Of the seven containers sampled for laboratory confirmation analysis, two displayed "organic peroxide" markings on the outside (numbers 3-SE and 84-SE). Samples from both of these containers underwent oxidizer screen testing but neither provided a positive oxidizer result.

The oxidizing property can be one of the criteria meeting the RCRA hazardous waste characteristic of ignitability. The oxidizer screening performed under the RSE was qualitative to indicate the general presence or absence of the oxidizing property.

3.6 Summary of RCRA Threshold Exceedences

Field screening and laboratory analysis of RSE samples indicates that the contents of some of the site containers are RCRA hazardous wastes for the ignitibility characteristic, and others are likely RCRA hazardous wastes for the toxicity characteristic (based on the total analytical results and a calculated potential TCLP concentration). A summary of the samples that exhibited these RCRA hazardous waste characteristics is contained in Table 3-7.

3.7 Split Sampling For Potentially Responsible Party

All samples were collected by the START as split samples. At the completion of container sampling, the split samples were offered to RS&E, who had been on site during the RSE to monitor activities as representatives of the PRP. An RS&E employee accepted and signed for the samples on December 17, 2010. The split samples accepted by RS&E consisted of both the laboratory confirmation analysis samples as well as the separate field screening samples. A copy of the Receipt for Samples form used to document the transfer of these samples to the PRP representative is contained in Appendix D.

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Table 3-3

Summary of Volatile Organic Compounds Results
Post Road Drum Site
Anchorage, Alaska

EPA Sample Identification	10120001	10120002	10120003	10120004	10120005	10120006	10120007	10120008
Container ID	1-SE	3-SE	22-GRE	8-GRE	84-SE	85-SE	72-SE	272-SE
Volatile Organic Compounds (ug/kg)								
1,1-Dichloroethane	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
1,1-Dichloroethene	19000 U	19000 U	1900 U	19000 U	18000 U	18000 U	2000 U	1900 U
1,1-Dichloropropene	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
1,1,1-Trichloroethane	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
1,1,2-Trichloroethane	11000 U	11000 U	1200 U	12000 U	11000 U	11000 U	1200 U	1200 U
1,1,1,2-Tetrachloroethane	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
1,1,2,2-Tetrachloroethane	9400 U	9400 U	970 U	9600 U	9100 U	9200 U	990 U	970 U
1,2-Dibromo-3-Chloropropane	190000 U	190000 U	19000 U	190000 U	180000 U	180000 U	20000 U	19000 U
1,2-Dibromoethane	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
1,2-Dichlorobenzene	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
1,2-Dichloroethane	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
1,2-Dichloropropane	11000 U	11000 U	1200 U	12000 U	11000 U	11000 U	1200 U	1200 U
1,2,3-Trichlorobenzene	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
1,2,3-Trichloropropane	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
1,2,4-Trichlorobenzene	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
1,2,4-Trimethylbenzene	78000	38000 U	110000	39000 U	290000	37000 U	85000	66000
1,3-Dichlorobenzene	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
1,3,5-Trimethylbenzene	25000 JQ	38000 U	33000	39000 U	97000	37000 U	31000	23000
1,3-Dichloropropane	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
1,4-Dichlorobenzene	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
2-Chlorotoluene	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
2,2-Dichloropropane	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
4-Chlorotoluene	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
4-Isopropyltoluene	38000 U	38000 U	980 JQ	39000 U	36000 U	37000 U	7000	5500
Benzene	100000	2700000	1600 U	15000 U	960000	15000 U	3000	2400
Bromobenzene	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
Bromochloromethane	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
Bromodichloromethane	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
Bromoform	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
Bromomethane	R	R	14000 U	R	R	R	14000 U	14000 U
Carbon Tetrachloride	19000 U	19000 U	1900 U	19000 U	18000 U	18000 U	2000 U	1900 U
Chlorobenzene	38000 U	13000 JQ	3900 U	39000 U	12000 JQ	9300 JQ	4000 U	970 U
Chloroethane	R	R	R	R	R	R	R	R
Chloroform	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
Chloromethane	380000 U	380000 U	39000 U	390000 U	360000 U	370000 U	40000 U	39000 U
Cis-1,2-Dichloroethene	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
Cis-1,3-Dichloropropene	15000 U	15000 U	1600 U	15000 U	15000 U	15000 U	1600 U	1600 U
Dibromochloromethane	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
Dibromomethane	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
Dichlorodifluoromethane	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
Ethylbenzene	2000000	940000	3900 U	260000	660000	180000	19000	14000
Hexachlorobutadiene	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
Isopropylbenzene	17000 JQ	38000 U	3700 JQ	39000 U	10000 JQ	37000 U	8700	7100
Methyl Tert-Butyl Ether	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
Methylene Chloride	960000	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
m,p-Xylene	7800000	2200000	2900 JQ	870000	2600000	460000	81000	61000
Naphthalene	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	28000	21000
N-Butylbenzene	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	9200	7400
N-Propylbenzene	17000 JQ	38000 U	17000	39000 U	47000	37000 U	18000	13000
O-Xylene	2200000	400000	5700	200000	540000	110000	40000	30000
sec-Butylbenzene	38000 U	38000 U	2000 JQ	39000 U	36000 U	37000 U	8200	6000
Styrene	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
Tert-Butylbenzene	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
Tetrachloroethene	19000 U	19000 U	1900 U	19000 U	18000 U	18000 U	4100	2600
Toluene	29000000	38000 U	26000	19000 JQ	36000 U	31000 JQ	45000	34000
Trans-1,2-Dichloroethene	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
Trans-1,3-Dichloropropene	15000 U	15000 U	1600 U	15000 U	15000 U	15000 U	1600 U	1600 U
Trichloroethene	15000 U	15000 U	1600 U	15000 U	15000 U	15000 U	1600 U	1600 U
Trichlorofluoromethane	38000 U	38000 U	3900 U	39000 U	36000 U	37000 U	4000 U	3900 U
Vinyl Chloride	7500 U	7500 U	780 U	7700 U	7300 U	7300 U	790 U	780 U

Notes:

A **BOLD** value indicates a positive result.

Key:

EPA = Environmental Protection Agency

ID = Identification

J = Estimated value.

ug/kg = Micrograms per kilogram

Q = The associated estimated positive result is less than the reporting limit but greater than the method detection limit.

R = The associated result is rejected.

U = Not detected (at the indicated reporting limit).

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Table 3-4								
Summary of Semivolatile Organic Compounds Results								
Post Road Drum Site								
Anchorage, Alaska								
EPA Sample Identification	10120001	10120002	10120003	10120004	10120005	10120006	10120007	10120008
Container ID	1-SE	3-SE	22-GRE	8-GRE	84-SE	85-SE	72-SE	272-SE
Semivolatile Organic Compounds (ug/kg)								
1-Methylnaphthalene	1800 U	17000 U	11000 U	17000 U	20000 U	20000 U	47000	47000
1,2-Dichlorobenzene	3000 U	28000 U	18000 U	28000 U	34000 U	33000 U	44000 U	43000 U
1,2,4-Trichlorobenzene	3000 U	28000 U	18000 U	28000 U	34000 U	33000 U	44000 U	43000 U
1,3-Dichlorobenzene	3000 U	28000 U	18000 U	28000 U	34000 U	33000 U	44000 U	43000 U
1,4-Dichlorobenzene	3000 U	28000 U	18000 U	28000 U	34000 U	33000 U	44000 U	43000 U
2-Chloronaphthalene	1200 U	11000 U	7000 U	11000 U	14000 U	13000 U	17000 U	17000 U
2-Chlorophenol	5900 U	57000 U	35000 U	57000 U	8200 JQ	65000 U	87000 U	85000 U
2-Methylnaphthalene	1200 U	11000 U	7000 U	11000 U	14000 U	13000 U	60000	64000
2-Methylphenol	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
2-Nitroaniline	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
2-Nitrophenol	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
2,4-Dichlorophenol	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
2,4-Dimethylphenol	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
2,4-Dinitrophenol	59000 U	570000 U	350000 U	570000 U	680000 U	650000 U	870000 U	850000 U
2,4-Dinitrotoluene	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
2,4,5-Trichlorophenol	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
2,4,6-Trichlorophenol	5900 U	85000 U	53000 U	85000 U	100000 U	98000 U	130000 U	130000 U
2,6-Dinitrotoluene	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
3-Nitroaniline	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
3,3'-Dichlorobenzidine	12000 U	110000 U	70000 U	110000 U	140000 U	130000 U	170000 U	170000 U
3 & 4 Methylphenol	12000 U	110000 U	70000 U	110000 U	140000 U	130000 U	170000 U	170000 U
4-Bromophenyl-phenylether	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
4-Chloro-3-Methylphenol	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
4-Chlorophenol phenyl ether	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
4-Chloroaniline	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
4-Nitroaniline	5900 UJL	57000 UJL	35000 UJL	57000 UJL	68000 UJL	65000 UJL	87000 UJL	85000 UJL
4-Nitrophenol	59000 U	570000 U	350000 U	570000 U	680000 U	650000 U	870000 U	850000 U
4,6-Dinitro-2-methylphenol	59000 U	570000 U	350000 U	570000 U	680000 U	650000 U	870000 U	850000 U
Acenaphthene	1200 U	11000 U	7000 U	11000 U	14000 U	13000 U	17000 U	17000 U
Acenaphthylene	1200 U	11000 U	7000 U	11000 U	14000 U	13000 U	17000 U	17000 U
Anthracene	1200 U	11000 U	7000 U	11000 U	14000 U	13000 U	17000 U	17000 U
Benzo(a)anthracene	1500 U	14000 U	8800 U	14000 U	17000 U	16000 U	22000 U	21000 U
Benzoic Acid	370000 JH	27000000	880000 U	1400000 U	40000000	1600000 U	2200000 U	2100000 U
Benzo(a)pyrene	1800 U	17000 U	11000 U	17000 U	20000 U	20000 U	26000 U	26000 U
Benzo(b)fluoranthene	1200 U	11000 U	7000 U	11000 U	14000 U	13000 U	17000 U	17000 U
Benzo(g,h,i)perylene	1500 U	14000 U	8800 U	14000 U	17000 U	16000 U	22000 U	21000 U
Benzo(k)fluoranthene	1500 U	14000 U	8800 U	14000 U	17000 U	16000 U	22000 U	21000 U
Benzyl alcohol	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
Bis(2-chloroethyl) Ether	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
Bis(2-chloroisopropyl) Ether	8900 U	85000 U	53000 U	85000 U	100000 U	98000 U	130000 U	130000 U
Bis(2-chloroethoxy) Methane	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
Bis(2-ethylhexyl) Phthalate	89000 U	850000 U	1300000	850000 U	1000000 U	980000 U	220000 JQ	200000 JQ
Butylbenzyl Phthalate	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
Carbazole	8900 U	85000 U	53000 U	85000 U	100000 U	98000 U	130000 U	130000 U
Chrysene	1500 U	14000 U	8800 U	14000 U	17000 U	16000 U	22000 U	21000 U
Dibenzo(a,h)anthracene	2400 U	23000 U	14000 U	23000 U	27000 U	26000 U	35000 U	34000 U
Dibenzofuran	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
Diethyl Phthalate	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
Dimethyl Phthalate	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
Di-n-butyl Phthalate	12000 U	110000 U	70000 U	110000 U	140000 U	130000 U	170000 U	170000 U
Di-n-octyl Phthalate	12000 U	110000 U	70000 U	110000 U	140000 U	130000 U	170000 U	170000 U
Fluoranthene	1200 U	11000 U	7000 U	11000 U	14000 U	13000 U	17000 U	17000 U
Fluorene	1200 U	11000 U	7000 U	11000 U	14000 U	13000 U	17000 U	17000 U
Hexachlorobenzene	3000 U	28000 U	18000 U	28000 U	34000 U	33000 U	44000 U	43000 U
Hexachlorobutadiene	3000 U	28000 U	18000 U	28000 U	34000 U	33000 U	44000 U	43000 U
Hexachloroethane	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
Hexachlorocyclopentadiene	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
Indeno(1,2,3-cd)pyrene	2400 U	23000 U	14000 U	23000 U	27000 U	26000 U	35000 U	34000 U
Isophorone	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
Naphthalene	1200 U	11000 U	7000 U	11000 U	14000 U	13000 U	38000	38000
Nitrobenzene	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
N-Nitroso-di-n-propylamine	5900 U	57000 U	35000 U	57000 U	68000 U	65000 U	87000 U	85000 U
N-Nitrosodiphenylamine	3000 U	28000 U	18000 U	28000 U	34000 U	33000 U	44000 U	43000 U
Pentachlorophenol	12000 U	110000 U	70000 U	110000 U	140000 U	130000 U	170000 U	170000 U
Phenanthrene	1200 U	11000 U	7000 U	11000 U	14000 U	13000 U	10000 JQ	11000 JQ
Phenol	5900 U	540000	35000 U	57000 U	530000	65000 U	87000 U	85000 U
Pyrene	1200 U	11000 U	7000 U	11000 U	14000 U	13000 U	17000 U	17000 U

Notes:

A BOLD value indicates a positive result.

Key:

EPA = Environmental Protection Agency

H = The associated estimated value has a likely high bias.

ID = Identification

J = Estimated value.

L = The associated estimated value has a likely low bias.

ug/kg = Micrograms per kilogram

Q = The associated estimated positive result is less than the reporting limit but greater than the method detection limit.

U = Not detected (at the indicated reporting limit).

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<p align="center">Table 3-5</p> <p align="center">Summary of Target Analyte List Metals Results</p> <p align="center">Post Road Drum Site</p> <p align="center">Anchorage, Alaska</p>					
EPA Sample Identification	10120003	10120004	10120006	10120007	10120008
Container ID	22-GRE	8-GRE	85-SE	72-SE	272-SE
Target Analyte List Metals (mg/kg)					
Aluminum	1300	1300	190	16 JQ	17 JQ
Antimony	0.52 JK	0.35 JK	0.15 JQ	0.52 JK	0.5 JK
Arsenic	0.5 U	0.49 U	0.49 U	0.51 U	0.49 U
Barium	4.6	1.4	6	0.51 U	0.49 U
Beryllium	0.25 UJL	0.25 UJL	0.25 UJL	0.26 UJL	0.25 UJL
Cadmium	0.2 U	0.2 U	0.069 JQ	0.041 JQ	0.035 JQ
Calcium	180000	65000	26000	420	400
Chromium	10000	1.3 U	1600	1.3 U	1.3 U
Cobalt	0.5 U	1.1 U	0.49 U	0.51 U	0.49 U
Copper	0.99 U	0.98 U	0.98 U	13	13
Iron	190 JK	91 JK	6.3 JK	35 JK	34 JK
Lead	37000 JK	0.52 JK	15000 JK	5 JK	4.5 JK
Magnesium	1400 JK	1300 JK	620 JK	78 JK	78 JK
Manganese	38 JL	20 JL	8.1 JL	1 UJL	0.99 UJL
Mercury	0.015 U	0.017 U	0.016 U	0.014 U	0.016 U
Nickel	0.99 U	2.5	0.98 U	1 U	0.99 U
Potassium	67 JK	36 JK	160 U	16 JQ	17 JQ
Selenium	0.7 U	0.69 U	0.69 U	0.72 U	0.69 U
Silver	0.59 JQ	0.98 U	0.98 U	1 U	0.99 U
Sodium	260 JH	52 JK	98 U	24 JQ	26 JQ
Thallium	0.081 JQ	0.39 U	0.39 U	0.41 U	0.4 U
Vanadium	0.5 UJL	0.39 JQ	0.49 UJL	0.51 UJL	0.49 UJL
Zinc	2 UJL	2 UJL	2 UJL	260 JL	250 JL

Notes:

A **BOLD** value indicates a positive result.

Key:

EPA = Environmental Protection Agency

H = The associated estimated value has a likely high bias.

ID = Identification

J = Estimated value.

K = The associated estimated value has an unknown bias.

L = The associated estimated value has a likely low bias.

mg/kg = Milligrams per kilogram

Q = The associated estimated positive result is less than the reporting limit but greater than the method detection limit.

U = Not detected (at the indicated reporting limit).

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Table 3-6

**Summary of Flashpoint and Oxidizer Screen Results
Post Road Drum Site
Anchorage, Alaska**

EPA Sample Identification	10120001	10120002	10120003	10120004	10120005	10120006	10120007	10120008
Container ID	1-SE	3-SE	22-GRE	8-GRE	84-SE	85-SE	72-SE	272-SE
Flashpoint and Oxidizer Screen Results								
Flashpoint (degrees Fahrenheit)	<70	>212	<70	<70	>212	>212	>212	>212
Oxidizer Screen	Negative	Negative	Positive	Negative	Negative	Positive	na	na

Notes: A **BOLD** value indicates a positive result.

Key:

EPA = Environmental Protection Agency
ID = Identification
na = not analyzed
> = greater than
< = less than

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Table 3-7 Summary of RCRA Threshold Exceedences						
		RCRA Characteristic Hazardous Waste Criteria				
		TOXICITY			IGNITABILITY	
Parameter:		Benzene	Chromium	Lead	Flashpoint	Oxidizer
RCRA Limit:		0.5 mg/L TCLP	5 mg/L TCLP	5 mg/L TCLP	< 140 °F	Positive
Container No.	Corresponding Lab Sample No.					
Laboratory Analysis Samples						
1-SE	1012-0001	100 mg/kg total 5 mg/L calculated TCLP ¹	not analyzed	not analyzed	< 70°F	no exceedence
3-SE	1012-0002	2,700 mg/kg total 135 mg/L calculated TCLP ¹	not analyzed	not analyzed	no exceedence	no exceedence
22-GRE	1012-0003	no exceedence	10,000 mg/kg total 500 mg/L calculated TCLP ¹	37,000 mg/kg total 1,850 mg/L calculated TCLP ¹	< 70°F	Positive
8-GRE	1012-0004	no exceedence	no exceedence	no exceedence	< 70°F	no exceedence
84-SE	1012-0005	960 mg/kg total 48 mg/L calculated TCLP ¹	not analyzed	not analyzed	no exceedence	no exceedence
85-SE	1012-0006	no exceedence	1,600 mg/kg total 80 mg/L calculated TCLP ¹	15,000 mg/kg total 750 mg/L calculated TCLP ¹	no exceedence	Positive
72-SE	1012-0007	no exceedence	no exceedence	no exceedence	no exceedence	not analyzed
272-SE	1012-0008	no exceedence	no exceedence	no exceedence	no exceedence	not analyzed
Field Screening Samples						
1-SE	1012-0001	not applicable	not applicable	not applicable	Positive ²	no exceedence
9-SE	not applicable	not applicable	not applicable	not applicable	Positive ²	no exceedence
22-SE	not applicable	not applicable	not applicable	not applicable	no exceedence	no exceedence

A **BOLDED** entry indicates criteria are met

Key:

°F = degrees Fahrenheit

mg/kg = milligrams per kilogram

mg/L = milligrams per liter

RCRA = Resource Conservation and Recovery Act

TCLP = Toxicity Characteristic Leaching Procedure

< = less than

¹ maximum calculated potential leachate concentration derived from total waste analytical results per 20:1 TCLP ratio of extraction, with units changed from mg/kg to mg/L (equivalent for the purpose of this comparison) to reflect TCLP criteria units.

² result is based on flame exposure test and not flashpoint testing

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4 Quality Assurance / Quality Control

Quality Assurance (QA) / Quality Control (QC) data are necessary to determine precision and accuracy and to demonstrate the absence of interferences and/or contamination of sampling equipment, glassware and reagents. Specific QC requirements for laboratory analyses are incorporated in the *Contract Laboratory Program Statement of Work for Inorganic Analyses* (EPA 2007b) and *Contract Laboratory Program Statement of Work for Organic Analyses* (EPA 2007a). These QC requirements or equivalent requirements found in the analytical methods were followed for analytical work on the project. This section describes the QA/QC measures taken for the project and provides an evaluation of the usability of data presented in this report.

Data from the START-subcontracted commercial laboratory were reviewed and validated by a START chemist. Data qualifiers were applied as necessary according to the following guidance:

- EPA (2004) *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*; and
- EPA (2008) *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*.

In the absence of other QC guidance, method- and/or standard operating procedure-specific QC limits were also utilized to apply qualifiers to the data.

4.1 Satisfaction of Data Quality Objectives

The following EPA (EPA 2000) guidance document was used to establish data quality objectives (DQOs) for this project:

- *Guidance for the Data Quality Objectives Process* (EPA QA/G-4), EPA/600/R-96/055.

EPA determined that definitive data without error and bias determination would be used for the sampling and analyses conducted during the field activities. The data quality achieved during the field work produced sufficient data that met the DQOs stated in the SSSP (E & E 2010). A detailed discussion of accomplished project objectives is presented in the following sections.

4.2 QA/QC Samples

Rinsate blank and trip blank QA samples were not collected. Rinsate blank samples were not required as all samples were collected using dedicated sampling equipment. A trip blank sample was not collected for product samples. QC samples included matrix spike/matrix spike duplicate (MS/MSD) and/or blank spike (BS) samples for organic analyses at a rate of one MS/MSD and/or BS per 20 samples per matrix and MS/duplicate samples for inorganic analyses at a rate of one MS/duplicate per 20 samples per matrix.

4.3 Project-Specific Data Quality Objectives

The laboratory data were reviewed to ensure that DQOs for the project were met. The following describes the laboratories' abilities to meet project DQOs for precision, accuracy and

completeness and the field team's ability to meet project DQOs for representativeness and comparability. The laboratories and the field team were able to meet DQOs for the project.

4.3.1 Precision

Precision measures the reproducibility of the sampling and analytical methodology. Laboratory and field precision is defined as the relative percent difference (RPD) between duplicate sample analyses. The laboratory duplicate samples or MS/MSD samples measure the precision of the analytical method. The RPD values were reviewed for all commercial laboratory samples. A total of 15 sample results (approximately 1.3 percent [%] of the data) were qualified as estimated quantities (J or UJ) based on duplicate outliers. Therefore, the precision analyses results were within the QC limits of 90%.

4.3.2 Accuracy

Accuracy indicates the conformity of the measurements to fact. Laboratory accuracy is defined as the surrogate spike percent recovery (%R) or the MS/MSD/BS %Rs for all laboratory analyses. The surrogate %R values were reviewed for all appropriate sample analyses. All surrogate results were within QC limits.

The spike %R values were reviewed for all MS/MSD/BS analyses. A total of 29 sample results (approximately 2.5 % of the data) were qualified as estimated quantities (J or UJ) based on spike QC outliers. Therefore the accuracy analyses results were within the QC limits of 90%.

4.3.3 Completeness

Data completeness is defined as the percentage of usable data (usable data divided by the total possible data). All laboratory data were reviewed for data validation and usability. A total of 13 sample results (approximately 1.1 % of the data) were rejected; therefore the project DQO for completeness of 90 % was met.

4.3.4 Representativeness

Data representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or environmental condition. The number and selection of samples were determined in the field to account accurately for site variations and sample matrices. The DQO for representativeness was met.

4.3.5 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another. Data produced for this site followed applicable field sampling techniques and specific analytical methodology. The DQO for comparability was met.

4.4 Laboratory QA/QC Parameters

The laboratory data also were reviewed for holding times/temperatures/sample containers, laboratory blank samples, serial dilution analyses, and interference check sample analyses. These QA/QC parameters are summarized below. In general, the laboratory and field QA/QC parameters were considered acceptable.

4.4.1 Holding Times/Temperatures/Sample Containers

All holding times, sample temperatures, and containers were acceptable.

4.4.2 Laboratory Blanks

All laboratory blanks met the frequency criteria. The following potential contaminants of concern were detected in the laboratory blanks:

- TAL metals: barium, cobalt, mercury, manganese, nickel, thallium, and zinc.

See the data validation memoranda in Appendix C for results qualified based on blank contamination.

4.4.3 Serial Dilution

Serial dilution analyses were performed at a frequency of one per 20 samples per matrix, meeting QC frequency criteria. A total of 10 sample results (approximately 0.9 % of the data) were qualified as estimated quantities (J or UJ). Therefore the serial dilution analyses results were within the QC limits of 90%.

4.4.4 Interference Check Samples

Interference check sample analyses were performed at a frequency of one per 20 samples per matrix, meeting QC frequency criteria. All interference check sample results were within QC limits.

4.5 Field Duplicate Samples

Samples 10120007 (72-SE) and 10120008 (272-SE) were field duplicates. Positive sample results for these samples were compared to determine sample variability. All sample results were within 35 % relative percent difference except the tetrachloroethene results; the associated tetrachloroethene results should be viewed with caution.

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5 Summary and Conclusions

EPA has completed an RSE at the Post Road Drum Site, the location of several hundred containers stored at an outdoor, secured storage lot. The containers have reportedly been left in storage since 2005 or 2006 and are known to have originated from MSSI, a pavement painting business that is no longer in business. The extended period of storage for the containers, some of which were known to contain hazardous materials, and reported PRP financial difficulties led to EPA concerns that abandonment or improper disposal of hazardous materials was taking place.

There are approximately 340 55-gallon drums, 140 5-gallon pails, several pressurized paint vessels, and several approximately 250-gallon liquid storage totes at this site. Most appear to contain paint or paint-related material used by MSSI. The material appears to consist of both product as well as mixed or waste materials generated from painting projects. Some, but not all, of the containers contain product labeling information. RSE evidence suggests that container contents do not always match labeling information. Container conditions range from fair to poor and some containers showed obvious signs of compromised integrity or penetration, including holes and leakage.

Field work for the RSE was performed from December 15 through 17, 2010, and demobilization from the site took place on December 18, 2010. The scope of the RSE field work was to obtain a representative inventory of the containers present, collect samples from selected containers, perform on-site hazard categorization screening, and submit representative samples for off-site laboratory confirmation analysis.

Under the RSE, three drums were sampled for on-site field screening, and one of those drums plus six others were sampled for laboratory analysis. Five of nine sampled drums displayed results (field screening or confirmed by laboratory analysis) to meet EPA's RCRA characteristic hazardous waste criteria for ignitability based on flashpoint or oxidizer testing. Additionally, five of the seven drums sampled for laboratory analysis displayed either a VOC (benzene) or metal (chromium or lead) in confirmed or estimated concentrations that may exceed TCLP regulatory limits, thus meeting the EPA's RCRA characteristic hazardous waste criteria for toxicity. Based on container labeling and container contents observed during the RSE and knowledge of the type of materials present, one half or more of the drums at the site may contain material that meets EPA RCRA characteristic hazardous waste criteria.

Flammables and oxidizers are chemical incompatibles that, when mixed, can pose significant health and safety concerns. Drums displaying flammable liquid labeling and drums displaying oxidizer labeling were observed in close proximity to each other throughout the site, and some drums were found damaged or leaking. The businesses that are reported to be the source of the containers, MSSI and PPMI, do not have EPA permits for the generation or storage of RCRA hazardous wastes. Therefore, there appears to be improper storage of hazardous waste at this site, and previous but unsuccessful container disposal efforts made by the PRP acknowledges that further usage of the containerized materials at this site is not intended or desired. Proper off-site disposal of these containers is recommended; or, as an interim measure, stabilization of the containers is recommended to prevent further leakage or potential contact between incompatibles. Snow cover at the time of the RSE prevented examination of the site's ground surface. Investigation of potential surface or subsurface contamination caused by container spillage or leakage should take place when weather conditions permit.

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6 References

Ecology and Environment, Inc. (E & E), December 2010, *Site-Specific Sampling Plan, Post Road Drum Site, Anchorage, Alaska*, prepared for the United States Environmental Protection Agency, Seattle, Washington, under Contract No. EP-S7-06-02, TDD No. 10-12-0003.

Google Earth, 2010, Global positioning system coordinates obtained for the Post Road Drum Site.

United States Environmental Protection Agency (EPA), December 10, 2010, *Affidavit in Support of Application for Search Warrant; Case Number: 3:10-mj-00176-JDR*.

_____, June 2008, *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*, OSWER 9240.1-48, EPA-540-R-08-001.

_____, August 2007a, *USEPA Contract Laboratory Program Statement of Work for Organics Analysis, Multi-Media, Multi-Concentration, SOM01.2*.

_____, January 2007b, *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, Multi-Media, Multi-Concentration, ILM05.4*.

_____, October 2004, *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, OSWER 9240.1-45, EPA 540-R-04-004.

_____, August 2000, *Guidance for the Data Quality Objectives Process*, EPA QA/G-4, Office of Research and Development, Washington, D.C., EPA/600/R-96/055.

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A Photographs

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POST ROAD DRUM SITE - REMOVAL SITE EVALUATION
Anchorage, Alaska



Photo 1 Site area viewed from Post Road. Ship Creek is to the left. The site is several hundred feet in from the road, at the right-center portion of the photograph and just after the end of the warehouse building to the right.

Direction: West Date: 12/18/10 Time: 13:33 Taken by: LM



Photo 3 Closeup of some of the northern "GRE" area drums as found at the start of the project. Drum labels indicating flammables and oxidizers are visible.

Direction: West Date: 12/15/10 Time: 10:51 Taken by: LM

TDD Number: I0-I2-0003

Photographed by: Len Marcus (LM), Brad Martin (BM),
Vivian Melde (VM), Liza Sanden (LS)



Photo 2 Drums in the northern "GRE" area, as found at the start of the project. Drums were later separated out.

Direction: Northwest Date: 12/15/10 Time: 12:15 Taken by: LM



Photo 4 "SE" flatbed trailer prior to the start of the project.

Direction: West Date: 12/09/10 Time: 15:39 Taken by: LM

POST ROAD DRUM SITE - REMOVAL SITE EVALUATION
Anchorage, Alaska

TDD Number: 10-I2-0003

Photographed by: Len Marcus (LM), Brad Martin (BM),
Vivian Melde (VM), Liza Sanden (LS)



Photo 5 Example of containers found on the "SE" flatbed trailer. Note different size containers, stacked pallets, and apparent leakage.

Direction: South Date: 12/15/10 Time: 10:58 Taken by: LM



Photo 6 Examples of damaged drums and poor-condition pallets found on the "SE" flatbed trailer.

Direction: South Date: 12/15/10 Time: 11:06 Taken by: LM



Photo 7 5-gallon containers of paint found underneath the "SE" flatbed trailer.

Direction: South Date: 12/15/10 Time: 11:10 Taken by: LM

POST ROAD DRUM SITE - REMOVAL SITE EVALUATION
Anchorage, Alaska



Photo 8 "GRW" portion of the site as initially found. The "SJ" box trailer is at the right.

Direction: North Date: 12/15/10 Time: 11:06 Taken by: LM



Photo 10 Drums in the "GRW" area that displayed apparent spillage or leakage of a material inconsistent with the type of product indicated by drum labeling information.

Direction: Down Date: 12/15/10 Time: 12:23 Taken by: LM

TDD Number: 10-I2-0003

Photographed by: Len Marcus (LM), Brad Martin (BM),
Vivian Melde (VM), Liza Sanden (LS)



Photo 9 Drums found stacked in the "GRW" area.

Direction: North Date: 12/18/10 Time: 12:49 Taken by: LM



Photo 11 5-gallon containers of various products found under the "LR" box trailer. Note DOT placard on trailer.

Direction: Northwest Date: 12/15/10 Time: 12:19 Taken by: LM

POST ROAD DRUM SITE - REMOVAL SITE EVALUATION
Anchorage, Alaska



Photo 12 A drum labeled "toluene" found under the "SJ" box trailer.

Direction: Northwest Date: 12/15/10 Time: 12:22 Taken by: LM

TDD Number: 10-I2-0003

Photographed by: Len Marcus (LM), Brad Martin (BM),
Vivian Melde (VM), Liza Sanden (LS)



Photo 13 Drums found on the orange Ford flatbed truck. Viewed from outside the site fence.

Direction: North Date: 12/18/10 Time: 12:42 Taken by: LM



Photo 14 Some of the southern "GRE" area drums as found at the start of the project. Drum labels indicating flammables and oxidizers are visible.

Direction: Southwest Date: 12/15/10 Time: 12:25 Taken by: LM

POST ROAD DRUM SITE - REMOVAL SITE EVALUATION
Anchorage, Alaska



Photo 15 Container inventorying taking place at the northern "GRE" area. Box trailer "LR" is at left.

Direction: Northwest Date: 12/15/10 Time: 10:57 Taken by: LM



Photo 17 Common markings noted on many drums. "W" is presumed to indicate waste, though not confirmed.

Direction: Down Date: 12/18/10 Time: 12:50 Taken by: LM

TDD Number: 10-I2-0003
Photographed by: Len Marcus (LM), Brad Martin (BM),
Vivian Melde (VM), Liza Sanden (LS)



Photo 16 Container inventorying taking place in the "GRW" area. The container in the foreground is a pressurized paint vessel and is marked with a project inventory number.

Direction: North Date: 12/15/10 Time: 15:10 Taken by: LS

POST ROAD DRUM SITE - REMOVAL SITE EVALUATION
Anchorage, Alaska

TDD Number: 10-12-0003

Photographed by: Len Marcus (LM), Brad Martin (BM),
Vivian Melde (VM), Liza Sanden (LS)



Photo 18 Example of materials found inside the "LR" box trailer upon opening the trailer.

Direction: North Date: 12/15/10 Time: 12:21 Taken by: LM



Photo 19 Example of materials found inside the "SJ" box trailer upon opening the trailer.

Direction: North Date: 12/15/10 Time: 12:22 Taken by: LM



Photo 20 Staging drums off of the "SE" flatbed trailer for inventory and sampling access.

Direction: Northwest Date: 12/15/10 Time: 16:09 Taken by: LM

POST ROAD DRUM SITE - REMOVAL SITE EVALUATION
Anchorage, Alaska



Photo 21 Staging drums off of the "SE" flatbed trailer for inventory and sampling access.

Direction: North Date: 12/16/10 Time: 15:00 Taken by: LM



Photo 23 START collecting a field screening sample from container number 22-SE.

Direction: Down Date: 12/16/10 Time: 15:00 Taken by: BM

TDD Number: 10-I2-0003

Photographed by: Len Marcus (LM), Brad Martin (BM),
Vivian Melde (VM), Liza Sanden (LS)



Photo 22 START collecting a field screening sample from container number 9-SE.

Direction: North Date: 12/16/10 Time: 14:48 Taken by: BM



Photo 24 START collecting a laboratory analysis sample from container number 84-SE.

Direction: Down Date: 12/17/10 Time: 14:37 Taken by: VM

POST ROAD DRUM SITE - REMOVAL SITE EVALUATION
Anchorage, Alaska

TDD Number: 10-I2-0003

Photographed by: Len Marcus (LM), Brad Martin (BM),
Vivian Melde (VM), Liza Sanden (LS)



Photo 25 START collecting a laboratory analysis sample from container number 22-GRE.

Direction: Down Date: 12/17/10 Time: 14:02 Taken by: VM

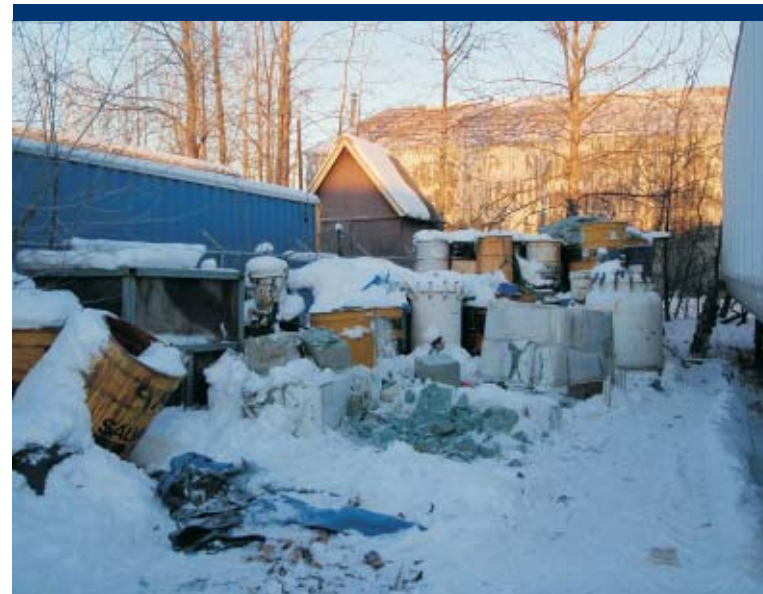


Photo 26 "GRW" area at the end of the project.

Direction: North Date: 12/17/10 Time: 11:52 Taken by: LM



Photo 27 "GRE", "SE" flatbed trailer, and "GRW" containers staged in the northern relocation area.

Direction: Southwest Date: 12/18/10 Time: 13:00 Taken by: LM



Photo 28 "SE" flatbed trailer drums staged in the southern relocation area along with "GRE" drums.

Direction: South Date: 12/18/10 Time: 13:01 Taken by: LM

B Hazard Categorization Data Summary Sheet

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Hazard Categorization Data Summary Sheet

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C Analytical Data

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MEMORANDUM

DATE: January 24, 2011

TO: Len Marcus, Project Manager, E & E, Anchorage, Alaska

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington *MW*

SUBJ: **Organic Data Quality Assurance Review, Post Road Drum Site, Anchorage, Alaska**

REF: TDD: 10-12-0003 PAN: 002233.0623.01SF

The data quality assurance review of 8 waste samples collected from the Post Road Drum site in Anchorage, Alaska, has been completed. Volatile Organic Compound (VOC) analysis (EPA Method 8260) was performed by Test America Seattle, Tacoma, Washington.

The samples were numbered:

10120001	10120002	10120003	10120004
10120005	10120006	10120007	10120008

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained and received within the QC limits of $< 6^{\circ}\text{C}$. The samples were collected on December 17, 2010, and were analyzed by January 3, 2011, therefore meeting QC criteria of less than 14 days between collection and analysis for soil samples (soil holding time limits were used in the absence of waste holding time limits).

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Satisfactory.

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050 except chloroethane; associated sample quantitation limits were rejected (R). All Relative Standard Deviations (RSDs) were less than the QC limits of 30%.

4. Continuing Calibration: Satisfactory.

All RRFs were greater than the QC limit of 0.050 except chloroethane in the December 21 calibration, bromomethane and chloroethane in the December 29 calibration, and chloroethane in the January 3 calibration; associated positive sample results were qualified as estimated quantities and sample quantitation limits were rejected (R). All % differences were less than the QC limit of 25% except chloromethane (high recovery) and bromomethane (low recovery) in the December 29 calibration, and chloromethane, chloroethane, and tetrachloroethane (high recoveries), and bromomethane (low recovery); Positive results associated with high recovery outliers were qualified as estimated quantities with a high bias (JH) and positive results and sample quantitation limits for non-detects associated with low recovery outliers were qualified as estimated results with a low bias (JL or UJL).

5. Blanks: Acceptable.

A method blank was analyzed for each 20 sample batch per matrix. There were no detections in any method blank.

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

7. Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS) Analysis: Satisfactory.

MS, MSD, and BS analyses were performed per SDG or per matrix per concentration level, whichever was more frequent. All recoveries were within QC limits except toluene with a high recovery. No action was taken based on the spike outlier alone.

8. Duplicate Analysis: Acceptable.

Laboratory duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. All spike duplicate results were within QC limits.

9. Internal Standards: Acceptable.

All internal standards were within ± 30 seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

Positive sample results greater than the method detection limit but less than the reporting limit.

The overall usefulness of the data is based on the criteria outlined in the Site-Specific Sampling Plan and/or Sampling and Quality Assurance Plan, the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical method, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA Contract Laboratory Program National Functional

Guidelines for Organic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

- H - The associated result has a likely high bias.
- J - The associated numerical value is an estimated quantity because the reported concentrations were less than the sample quantitation limits or because quality control criteria limits were not met.
- L - The associated result has a likely low bias.
- Q - The associated positive analytical result is greater than the method detection limit and less than the reporting limit.
- R - The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. Any reported value is unusable. Resampling and/or reanalysis is necessary for verification.
- U - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
- UJ - The material was analyzed for, but not detected. The reported detection limit is estimated because quality control criteria were not met.

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0001

Lab Sample ID: 580-23697-1

Client Matrix: Waste

Date Sampled: 12/17/2010 1335

Date Received: 12/22/2010 1200

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 580-78331	Instrument ID:	TAC043
Preparation:	5035	Prep Batch: 580-78307	Lab File ID:	VB00133177.D
Dilution:	100		Initial Weight/Volume:	1.061 g
Date Analyzed:	12/29/2010 2043	Run Type: DL	Final Weight/Volume:	400 mL
Date Prepared:	12/29/2010 1251			

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Dichlorodifluoromethane		ND		9400	38000
Chloromethane		ND		94000	380000
Vinyl chloride		ND		1900	7500
Bromomethane		ND		35000	130000
Chloroethane		ND		94000	380000
Trichlorofluoromethane		ND		9400	38000
1,1-Dichloroethene		NDW		4700	19000
Methylene Chloride		960000		9400	38000
trans-1,2-Dichloroethene		ND		9400	38000
1,1-Dichloroethane		ND		9400	38000
2,2-Dichloropropane		ND		9400	38000
cis-1,2-Dichloroethene		ND		9400	38000
Chlorobromomethane		ND		11000	38000
Chloroform		ND		9400	38000
1,1,1-Trichloroethane		ND		9400	38000
Carbon tetrachloride		ND		4700	19000
1,1-Dichloropropene		NDW		9400	38000
Benzene		1000000		3800	15000
1,2-Dichloroethane		ND		9400	38000
Trichloroethene		ND		3800	15000
1,2-Dichloropropane		ND		3700	11000
Dibromomethane		ND		9400	38000
Dichlorobromomethane		ND		9400	38000
cis-1,3-Dichloropropene		ND		3800	15000
trans-1,3-Dichloropropene		ND		3800	15000
1,1,2-Trichloroethane		ND		2800	11000
Tetrachloroethene		ND		4700	19000
1,3-Dichloropropane		ND		9400	38000
Chlorodibromomethane		ND		9400	38000
Ethylene Dibromide		ND		9400	38000
Chlorobenzene		NDW		9400	38000
Ethylbenzene		2000000		9400	38000
1,1,1,2-Tetrachloroethane		ND		9400	38000
1,1,2,2-Tetrachloroethane		ND		3100	9400
m-Xylene & p-Xylene		7800000		9400	38000
o-Xylene		2200000		9400	38000
Styrene		ND		9400	38000
Bromoform		NDW		10000	38000
Isopropylbenzene		17000	JQ	9400	38000
Bromobenzene		NDW		9400	38000
N-Propylbenzene		17000	JQ	9400	38000
1,2,3-Trichloropropane		ND		11000	38000
2-Chlorotoluene		NDW		9400	38000
1,3,5-Trimethylbenzene		25000	JQ	9400	38000
4-Chlorotoluene		ND		12000	38000
tert-Butylbenzene		NDW		9400	38000

MW 1-24-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0001

Lab Sample ID: 580-23697-1

Date Sampled: 12/17/2010 1335

Client Matrix: Waste

Date Received: 12/22/2010 1200

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch:	580-78331	Instrument ID:	TAC043
Preparation:	5035	Prep Batch:	580-78307	Lab File ID:	VB00133177.D
Dilution:	100			Initial Weight/Volume:	1.061 g
Date Analyzed:	12/29/2010 2043	Run Type:	DL	Final Weight/Volume:	400 mL
Date Prepared:	12/29/2010 1251				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
1,2,4-Trimethylbenzene		78000		9400	38000
sec-Butylbenzene		ND		9400	38000
1,3-Dichlorobenzene		ND		9400	38000
4-Isopropyltoluene		ND		9400	38000
1,4-Dichlorobenzene		ND		9400	38000
n-Butylbenzene		ND		9400	38000
1,2-Dichlorobenzene		ND		9400	38000
1,2-Dibromo-3-Chloropropane		ND		62000	190000
1,2,4-Trichlorobenzene		ND		9400	38000
1,2,3-Trichlorobenzene		ND		9400	38000
Hexachlorobutadiene		ND		9400	38000
Naphthalene		ND		9400	38000
Methyl tert-butyl ether		ND		9400	38000

Surrogate	%Rec	Qualifier	Acceptance Limits
Fluorobenzene (Surr)	100		75 - 125
Toluene-d8 (Surr)	97		85 - 115
Ethylbenzene-d10	93		75 - 125
4-Bromofluorobenzene (Surr)	104		85 - 120
Trifluorotoluene (Surr)	106		75 - 125

mw
12411

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0001

Lab Sample ID: 580-23697-1

Client Matrix: Waste

Date Sampled: 12/17/2010 1335

Date Received: 12/22/2010 1200

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 580-78491	Instrument ID:	TAC043
Preparation:	5035	Prep Batch: 580-78307	Lab File ID:	VB00133210.D
Dilution:	1000		Initial Weight/Volume:	1.061 g
Date Analyzed:	01/03/2011 1812	Run Type: DL2	Final Weight/Volume:	400 mL
Date Prepared:	12/29/2010 1251			

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Toluene		29000000		94000	380000

mw
124.11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0002

Lab Sample ID: 580-23697-2

Date Sampled: 12/17/2010 1345

Client Matrix: Waste

Date Received: 12/22/2010 1200

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 580-78331	Instrument ID:	TAC043
Preparation:	5035	Prep Batch: 580-78307	Lab File ID:	VB00133185.D
Dilution:	100		Initial Weight/Volume:	1.061 g
Date Analyzed:	12/29/2010 2340	Run Type: DL	Final Weight/Volume:	400 mL
Date Prepared:	12/29/2010 1251			

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Dichlorodifluoromethane		ND		9400	38000
Chloromethane		ND		94000	380000
Vinyl chloride		ND		1900	7500
Bromomethane		ND		33000	130000
Chloroethane		ND		94000	380000
Trichlorofluoromethane		ND		9400	38000
1,1-Dichloroethene		ND		4700	19000
Methylene Chloride		ND		9400	38000
trans-1,2-Dichloroethene		ND		9400	38000
1,1-Dichloroethane		ND		9400	38000
2,2-Dichloropropane		ND		9400	38000
cis-1,2-Dichloroethene		ND		9400	38000
Chlorobromomethane		ND		11000	38000
Chloroform		ND		9400	38000
1,1,1-Trichloroethane		ND		9400	38000
Carbon tetrachloride		ND		4700	19000
1,1-Dichloropropene		ND ^W		9400	38000
Benzene		2700000		3800	15000
1,2-Dichloroethane		ND		9400	38000
Trichloroethene		ND		3800	15000
1,2-Dichloropropane		ND		3700	11000
Dibromomethane		ND		9400	38000
Dichlorobromomethane		ND		9400	38000
cis-1,3-Dichloropropene		ND		3800	15000
Toluene		ND		9400	38000
trans-1,3-Dichloropropene		ND		3800	15000
1,1,2-Trichloroethane		ND		2800	11000
Tetrachloroethene		ND		4700	19000
1,3-Dichloropropane		ND		9400	38000
Chlorodibromomethane		ND		9400	38000
Ethylene Dibromide		ND ^W		9400	38000
Chlorobenzene		13000	J Q	9400	38000
Ethylbenzene		940000		9400	38000
1,1,1,2-Tetrachloroethane		ND		9400	38000
1,1,2,2-Tetrachloroethane		ND ^W		3100	9400
m-Xylene & p-Xylene		2200000		9400	38000
o-Xylene		400000		9400	38000
Styrene		ND		9400	38000
Bromoform		ND		10000	38000
Isopropylbenzene		ND		9400	38000
Bromobenzene		ND		9400	38000
N-Propylbenzene		ND		9400	38000
1,2,3-Trichloropropane		ND		11000	38000
2-Chlorotoluene		ND		9400	38000
1,3,5-Trimethylbenzene		ND		9400	38000
4-Chlorotoluene		ND ^W		12000	38000

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0002

Lab Sample ID: 580-23697-2

Date Sampled: 12/17/2010 1345

Client Matrix: Waste

Date Received: 12/22/2010 1200

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch:	580-78331	Instrument ID:	TAC043
Preparation:	5035	Prep Batch:	580-78307	Lab File ID:	VB00133185.D
Dilution:	100			Initial Weight/Volume:	1.061 g
Date Analyzed:	12/29/2010 2340	Run Type:	DL	Final Weight/Volume:	400 mL
Date Prepared:	12/29/2010 1251				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
tert-Butylbenzene		ND		9400	38000
1,2,4-Trimethylbenzene		ND		9400	38000
sec-Butylbenzene		ND		9400	38000
1,3-Dichlorobenzene		ND		9400	38000
4-Isopropyltoluene		ND		9400	38000
1,4-Dichlorobenzene		ND		9400	38000
n-Butylbenzene		ND		9400	38000
1,2-Dichlorobenzene		ND		9400	38000
1,2-Dibromo-3-Chloropropane		ND		62000	190000
1,2,4-Trichlorobenzene		ND		9400	38000
1,2,3-Trichlorobenzene		ND		9400	38000
Hexachlorobutadiene		ND		9400	38000
Naphthalene		ND		9400	38000
Methyl tert-butyl ether		ND		9400	38000

Surrogate	%Rec	Qualifier	Acceptance Limits
Fluorobenzene (Surr)	98		75 - 125
Toluene-d8 (Surr)	92		85 - 115
Ethylbenzene-d10	93		75 - 125
4-Bromofluorobenzene (Surr)	101		85 - 120
Trifluorotoluene (Surr)	93		75 - 125

mw
1-24-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0003

Lab Sample ID: 580-23697-3

Date Sampled: 12/17/2010 1400

Client Matrix: Waste

Date Received: 12/22/2010 1200

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch:	580-78491	Instrument ID:	TAC043
Preparation:	5035	Prep Batch:	580-78307	Lab File ID:	VB00133211.D
Dilution:	10			Initial Weight/Volume:	1.030 g
Date Analyzed:	01/03/2011 1834	Run Type:	DL2	Final Weight/Volume:	400 mL
Date Prepared:	12/29/2010 1251				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Dichlorodifluoromethane		ND		970	3900
Chloromethane		ND		9700	39000
Vinyl chloride		ND		190	780
Bromomethane		ND		3400	14000
Chloroethane		ND		9700	39000
Trichlorofluoromethane		ND		970	3900
1,1-Dichloroethene		ND		490	1900
Methylene Chloride		ND		970	3900
trans-1,2-Dichloroethene		ND		970	3900
1,1-Dichloroethane		ND		970	3900
2,2-Dichloropropane		ND		970	3900
cis-1,2-Dichloroethene		ND		970	3900
Chlorobromomethane		ND		1200	3900
Chloroform		ND		970	3900
1,1,1-Trichloroethane		ND		970	3900
Carbon tetrachloride		ND		490	1900
1,1-Dichloropropene		ND		970	3900
Benzene		ND		390	1600
1,2-Dichloroethane		ND		970	3900
Trichloroethene		ND		390	1600
1,2-Dichloropropane		ND		380	1200
Dibromomethane		ND		970	3900
Dichlorobromomethane		ND		970	3900
cis-1,3-Dichloropropene		ND		390	1600
Toluene		26000		970	3900
trans-1,3-Dichloropropene		ND		390	1600
1,1,2-Trichloroethane		ND		290	1200
Tetrachloroethene		ND		490	1900
1,3-Dichloropropane		ND		970	3900
Chlorodibromomethane		ND		970	3900
Ethylene Dibromide		ND		970	3900
Chlorobenzene		ND		970	3900
Ethylbenzene		ND		970	3900
1,1,1,2-Tetrachloroethane		ND		970	3900
1,1,2,2-Tetrachloroethane		ND		320	970
m-Xylene & p-Xylene		2900	JQ	970	3900
o-Xylene		5700		970	3900
Styrene		ND		970	3900
Bromoform		ND		1100	3900
Isopropylbenzene		3700	JQ	970	3900
Bromobenzene		ND		970	3900
N-Propylbenzene		17000		970	3900
1,2,3-Trichloropropane		ND		1100	3900
2-Chlorotoluene		ND		970	3900
1,3,5-Trimethylbenzene		33000		970	3900
4-Chlorotoluene		ND		1300	3900

MW
12411

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0003

Lab Sample ID: 580-23697-3

Date Sampled: 12/17/2010 1400

Client Matrix: Waste

Date Received: 12/22/2010 1200

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 580-78491	Instrument ID:	TAC043
Preparation:	5035	Prep Batch: 580-78307	Lab File ID:	VB00133211.D
Dilution:	10		Initial Weight/Volume:	1.030 g
Date Analyzed:	01/03/2011 1834	Run Type: DL2	Final Weight/Volume:	400 mL
Date Prepared:	12/29/2010 1251			

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
tert-Butylbenzene		ND <i>mw</i>		970	3900 U
1,2,4-Trimethylbenzene		110000		970	3900
sec-Butylbenzene		2000	JQ	970	3900
1,3-Dichlorobenzene		ND <i>mw</i>		970	3900 U
4-Isopropyltoluene		980	JQ	970	3900
1,4-Dichlorobenzene		ND		970	3900 U
n-Butylbenzene		ND		970	3900
1,2-Dichlorobenzene		ND		970	3900
1,2-Dibromo-3-Chloropropane		ND		6400	19000
1,2,4-Trichlorobenzene		ND		970	3900
1,2,3-Trichlorobenzene		ND		970	3900
Hexachlorobutadiene		ND		970	3900
Naphthalene		ND		970	3900
Methyl tert-butyl ether		ND <i>mw</i>		970	3900

Surrogate	%Rec	Qualifier	Acceptance Limits
Fluorobenzene (Surr)	90		75 - 125
Toluene-d8 (Surr)	105		85 - 115
Ethylbenzene-d10	102		75 - 125
4-Bromofluorobenzene (Surr)	99		85 - 120
Trifluorotoluene (Surr)	107		75 - 125

mw
124-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0004

Lab Sample ID: 580-23697-4

Client Matrix: Waste

Date Sampled: 12/17/2010 1425

Date Received: 12/22/2010 1200

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 580-78331	Instrument ID:	TAC043
Preparation:	5035	Prep Batch: 580-78307	Lab File ID:	VB00133181.D
Dilution:	100		Initial Weight/Volume:	1.038 g
Date Analyzed:	12/29/2010 2212	Run Type: DL	Final Weight/Volume:	400 mL
Date Prepared:	12/29/2010 1251			

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Dichlorodifluoromethane		ND		9600	39000
Chloromethane		ND		96000	390000
Vinyl chloride		ND		1900	7700
Bromomethane		ND		34000	130000
Chloroethane		ND		96000	390000
Trichlorofluoromethane		ND		9600	39000
1,1-Dichloroethene		ND		4800	19000
Methylene Chloride		ND		9600	39000
trans-1,2-Dichloroethene		ND		9600	39000
1,1-Dichloroethane		ND		9600	39000
2,2-Dichloropropane		ND		9600	39000
cis-1,2-Dichloroethene		ND		9600	39000
Chlorobromomethane		ND		12000	39000
Chloroform		ND		9600	39000
1,1,1-Trichloroethane		ND		9600	39000
Carbon tetrachloride		ND		4800	19000
1,1-Dichloropropene		ND		9600	39000
Benzene		ND		3900	15000
1,2-Dichloroethane		ND		9600	39000
Trichloroethene		ND		3900	15000
1,2-Dichloropropane		ND		3800	12000
Dibromomethane		ND		9600	39000
Dichlorobromomethane		ND		9600	39000
cis-1,3-Dichloropropene		ND		3900	15000
Toluene		19000	JQ	9600	39000
trans-1,3-Dichloropropene		ND		3900	15000
1,1,2-Trichloroethane		ND		2900	12000
Tetrachloroethene		ND		4800	19000
1,3-Dichloropropane		ND		9600	39000
Chlorodibromomethane		ND		9600	39000
Ethylene Dibromide		ND		9600	39000
Chlorobenzene		ND		9600	39000
Ethylbenzene		260000		9600	39000
1,1,1,2-Tetrachloroethane		ND		9600	39000
1,1,2,2-Tetrachloroethane		ND		3200	9600
m-Xylene & p-Xylene		870000		9600	39000
o-Xylene		200000		9600	39000
Styrene		ND		9600	39000
Bromoform		ND		11000	39000
Isopropylbenzene		ND		9600	39000
Bromobenzene		ND		9600	39000
N-Propylbenzene		ND		9600	39000
1,2,3-Trichloropropane		ND		11000	39000
2-Chlorotoluene		ND		9600	39000
1,3,5-Trimethylbenzene		ND		9600	39000
4-Chlorotoluene		ND		13000	39000

mw
124-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0004

Lab Sample ID: 580-23697-4

Client Matrix: Waste

Date Sampled: 12/17/2010 1425

Date Received: 12/22/2010 1200

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 580-78331	Instrument ID:	TAC043
Preparation:	5035	Prep Batch: 580-78307	Lab File ID:	VB00133181.D
Dilution:	100		Initial Weight/Volume:	1.038 g
Date Analyzed:	12/29/2010 2212	Run Type: DL	Final Weight/Volume:	400 mL
Date Prepared:	12/29/2010 1251			

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
tert-Butylbenzene		ND		9600	39000
1,2,4-Trimethylbenzene		ND		9600	39000
sec-Butylbenzene		ND		9600	39000
1,3-Dichlorobenzene		ND		9600	39000
4-Isopropyltoluene		ND		9600	39000
1,4-Dichlorobenzene		ND		9600	39000
n-Butylbenzene		ND		9600	39000
1,2-Dichlorobenzene		ND		9600	39000
1,2-Dibromo-3-Chloropropane		ND		64000	190000
1,2,4-Trichlorobenzene		ND		9600	39000
1,2,3-Trichlorobenzene		ND		9600	39000
Hexachlorobutadiene		ND		9600	39000
Naphthalene		ND		9600	39000
Methyl tert-butyl ether		ND		9600	39000

Surrogate	%Rec	Qualifier	Acceptance Limits
Fluorobenzene (Surr)	95		75 - 125
Toluene-d8 (Surr)	101		85 - 115
Ethylbenzene-d10	100		75 - 125
4-Bromofluorobenzene (Surr)	99		85 - 120
Trifluorotoluene (Surr)	105		75 - 125

MW
12411

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0005

Lab Sample ID: 580-23697-5

Date Sampled: 12/17/2010 1440

Client Matrix: Waste

Date Received: 12/22/2010 1200

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 580-78331	Instrument ID:	TAC043
Preparation:	5035	Prep Batch: 580-78307	Lab File ID:	VB00133186.D
Dilution:	100		Initial Weight/Volume:	1.098 g
Date Analyzed:	12/30/2010 0002	Run Type: DL	Final Weight/Volume:	400 mL
Date Prepared:	12/29/2010 1251			

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Dichlorodifluoromethane		ND		9100	36000
Chloromethane		ND		91000	360000
Vinyl chloride		ND		1800	7300
Bromomethane		ND		32000	180000
Chloroethane		ND		91000	360000
Trichlorofluoromethane		ND		9100	36000
1,1-Dichloroethene		ND		4600	18000
Methylene Chloride		ND		9100	36000
trans-1,2-Dichloroethene		ND		9100	36000
1,1-Dichloroethane		ND		9100	36000
2,2-Dichloropropane		ND		9100	36000
cis-1,2-Dichloroethene		ND		9100	36000
Chlorobromomethane		ND		11000	36000
Chloroform		ND		9100	36000
1,1,1-Trichloroethane		ND		9100	36000
Carbon tetrachloride		ND		4600	18000
1,1-Dichloropropene		ND <i>mw</i>		9100	36000
Benzene		960000		3600	15000
1,2-Dichloroethane		ND		9100	36000
Trichloroethene		ND		3600	15000
1,2-Dichloropropane		ND		3600	11000
Dibromomethane		ND		9100	36000
Dichlorobromomethane		ND		9100	36000
cis-1,3-Dichloropropene		ND		3600	15000
Toluene		ND		9100	36000
trans-1,3-Dichloropropene		ND		3600	15000
1,1,2-Trichloroethane		ND		2700	11000
Tetrachloroethene		ND		4600	18000
1,3-Dichloropropane		ND		9100	36000
Chlorodibromomethane		ND		9100	36000
Ethylene Dibromide		ND <i>mw</i>		9100	36000
Chlorobenzene		12000	JQ	9100	36000
Ethylbenzene		660000		9100	36000
1,1,1,2-Tetrachloroethane		ND		9100	36000
1,1,2,2-Tetrachloroethane		ND <i>mw</i>		3000	9100
m-Xylene & p-Xylene		2600000		9100	36000
o-Xylene		540000		9100	36000
Styrene		ND		9100	36000
Bromoform		ND <i>mw</i>		10000	36000
Isopropylbenzene		10000	JQ	9100	36000
Bromobenzene		ND <i>mw</i>		9100	36000
N-Propylbenzene		47000		9100	36000
1,2,3-Trichloropropane		ND		11000	36000
2-Chlorotoluene		ND <i>mw</i>		9100	36000
1,3,5-Trimethylbenzene		97000		9100	36000
4-Chlorotoluene		ND <i>mw</i>		12000	36000

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0005

Lab Sample ID: 580-23697-5

Date Sampled: 12/17/2010 1440

Client Matrix: Waste

Date Received: 12/22/2010 1200

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 580-78331	Instrument ID:	TAC043
Preparation:	5035	Prep Batch: 580-78307	Lab File ID:	VB00133186.D
Dilution:	100		Initial Weight/Volume:	1.098 g
Date Analyzed:	12/30/2010 0002	Run Type: DL	Final Weight/Volume:	400 mL
Date Prepared:	12/29/2010 1251			

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
tert-Butylbenzene		ND-MW		9100	36000
1,2,4-Trimethylbenzene		290000		9100	36000
sec-Butylbenzene		ND		9100	36000
1,3-Dichlorobenzene		ND		9100	36000
4-Isopropyltoluene		ND		9100	36000
1,4-Dichlorobenzene		ND		9100	36000
n-Butylbenzene		ND		9100	36000
1,2-Dichlorobenzene		ND		9100	36000
1,2-Dibromo-3-Chloropropane		ND		60000	180000
1,2,4-Trichlorobenzene		ND		9100	36000
1,2,3-Trichlorobenzene		ND		9100	36000
Hexachlorobutadiene		ND		9100	36000
Naphthalene		ND		9100	36000
Methyl tert-butyl ether		ND		9100	36000

Surrogate	%Rec	Qualifier	Acceptance Limits
Fluorobenzene (Surr)	97		75 - 125
Toluene-d8 (Surr)	92		85 - 115
Ethylbenzene-d10	97		75 - 125
4-Bromofluorobenzene (Surr)	94		85 - 120
Trifluorotoluene (Surr)	92		75 - 125

MW
1-24-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0006

Lab Sample ID: 580-23697-6

Date Sampled: 12/17/2010 1500

Client Matrix: Waste

Date Received: 12/22/2010 1200

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B
Preparation: 5035
Dilution: 100
Date Analyzed: 12/29/2010 2234
Date Prepared: 12/29/2010 1251

Analysis Batch: 580-78331
Prep Batch: 580-78307
Run Type: DL

Instrument ID: TAC043
Lab File ID: VB00133182.D
Initial Weight/Volume: 1.092 g
Final Weight/Volume: 400 mL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Dichlorodifluoromethane		ND		9200	37000
Chloromethane		ND		92000	370000
Vinyl chloride		ND		1800	7300
Bromomethane		ND		32000	130000
Chloroethane		ND		92000	370000
Trichlorofluoromethane		ND		9200	37000
1,1-Dichloroethene		ND		4600	18000
Methylene Chloride		ND		9200	37000
trans-1,2-Dichloroethene		ND		9200	37000
1,1-Dichloroethane		ND		9200	37000
2,2-Dichloropropane		ND		9200	37000
cis-1,2-Dichloroethene		ND		9200	37000
Chlorobromomethane		ND		11000	37000
Chloroform		ND		9200	37000
1,1,1-Trichloroethane		ND		9200	37000
Carbon tetrachloride		ND		4600	18000
1,1-Dichloropropene		ND		9200	37000
Benzene		ND		3700	15000
1,2-Dichloroethane		ND		9200	37000
Trichloroethene		ND		3700	15000
1,2-Dichloropropane		ND		3600	11000
Dibromomethane		ND		9200	37000
Dichlorobromomethane		ND		9200	37000
cis-1,3-Dichloropropene		ND <i>mw</i>		3700	15000
Toluene		31000	JQ	9200	37000
trans-1,3-Dichloropropene		ND		3700	15000
1,1,2-Trichloroethane		ND		2700	11000
Tetrachloroethene		ND		4600	18000
1,3-Dichloropropane		ND		9200	37000
Chlorodibromomethane		ND		9200	37000
Ethylene Dibromide		ND <i>mw</i>		9200	37000
Chlorobenzene		9300	JQ	9200	37000
Ethylbenzene		180000		9200	37000
1,1,1,2-Tetrachloroethane		ND		9200	37000
1,1,2,2-Tetrachloroethane		ND <i>mw</i>		3000	9200
m-Xylene & p-Xylene		460000		9200	37000
o-Xylene		110000		9200	37000
Styrene		ND		9200	37000
Bromoform		ND		10000	37000
Isopropylbenzene		ND		9200	37000
Bromobenzene		ND		9200	37000
N-Propylbenzene		ND		9200	37000
1,2,3-Trichloropropane		ND		11000	37000
2-Chlorotoluene		ND		9200	37000
1,3,5-Trimethylbenzene		ND		9200	37000
4-Chlorotoluene		ND <i>mw</i>		12000	37000

mw 1-24-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0006

Lab Sample ID: 580-23697-6

Date Sampled: 12/17/2010 1500

Client Matrix: Waste

Date Received: 12/22/2010 1200

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 580-78331	Instrument ID:	TAC043
Preparation:	5035	Prep Batch: 580-78307	Lab File ID:	VB00133182.D
Dilution:	100		Initial Weight/Volume:	1.092 g
Date Analyzed:	12/29/2010 2234	Run Type: DL	Final Weight/Volume:	400 mL
Date Prepared:	12/29/2010 1251			

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
tert-Butylbenzene		ND		9200	37000
1,2,4-Trimethylbenzene		ND		9200	37000
sec-Butylbenzene		ND		9200	37000
1,3-Dichlorobenzene		ND		9200	37000
4-Isopropyltoluene		ND		9200	37000
1,4-Dichlorobenzene		ND		9200	37000
n-Butylbenzene		ND		9200	37000
1,2-Dichlorobenzene		ND		9200	37000
1,2-Dibromo-3-Chloropropane		ND		60000	180000
1,2,4-Trichlorobenzene		ND		9200	37000
1,2,3-Trichlorobenzene		ND		9200	37000
Hexachlorobutadiene		ND		9200	37000
Naphthalene		ND		9200	37000
Methyl tert-butyl ether		ND		9200	37000

Surrogate	%Rec	Qualifier	Acceptance Limits
Fluorobenzene (Surr)	96		75 - 125
Toluene-d8 (Surr)	101		85 - 115
Ethylbenzene-d10	99		75 - 125
4-Bromofluorobenzene (Surr)	99		85 - 120
Trifluorotoluene (Surr)	105		75 - 125

mw
1-24-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0007

Lab Sample ID: 580-23697-7

Client Matrix: Waste

Date Sampled: 12/17/2010 1525

Date Received: 12/22/2010 1200

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 580-78491	Instrument ID:	TAC043
Preparation:	5035	Prep Batch: 580-78307	Lab File ID:	VB00133214.D
Dilution:	10.		Initial Weight/Volume:	1.007 g
Date Analyzed:	01/03/2011 1940	Run Type: DL2	Final Weight/Volume:	400 mL
Date Prepared:	12/29/2010 1251			

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Dichlorodifluoromethane		ND		990	4000
Chloromethane		ND		9900	40000
Vinyl chloride		ND		200	790
Bromomethane		ND		3500	14000
Chloroethane		ND		9900	40000
Trichlorofluoromethane		ND		990	4000
1,1-Dichloroethene		ND		500	2000
Methylene Chloride		ND		990	4000
trans-1,2-Dichloroethene		ND		990	4000
1,1-Dichloroethane		ND		990	4000
2,2-Dichloropropane		ND		990	4000
cis-1,2-Dichloroethene		ND		990	4000
Chlorobromomethane		ND		1200	4000
Chloroform		ND		990	4000
1,1,1-Trichloroethane		ND		990	4000
Carbon tetrachloride		ND		500	2000
1,1-Dichloropropene		ND		990	4000
Benzene		3000		400	1600
1,2-Dichloroethane		ND		990	4000
Trichloroethene		ND		400	1600
1,2-Dichloropropane		ND		390	1200
Dibromomethane		ND		990	4000
Dichlorobromomethane		ND		990	4000
cis-1,3-Dichloropropene		ND		400	1600
Toluene		45000		990	4000
trans-1,3-Dichloropropene		ND		400	1600
1,1,2-Trichloroethane		ND		300	1200
Tetrachloroethene		4100		500	2000
1,3-Dichloropropane		ND		990	4000
Chlorodibromomethane		ND		990	4000
Ethylene Dibromide		ND		990	4000
Chlorobenzene		ND		990	4000
Ethylbenzene		19000		990	4000
1,1,1,2-Tetrachloroethane		ND		990	4000
1,1,2,2-Tetrachloroethane		ND		330	990
m-Xylene & p-Xylene		81000		990	4000
o-Xylene		40000		990	4000
Styrene		ND		990	4000
Bromoform		ND		1100	4000
Isopropylbenzene		8700		990	4000
Bromobenzene		ND		990	4000
N-Propylbenzene		18000		990	4000
1,2,3-Trichloropropane		ND		1200	4000
2-Chlorotoluene		ND		990	4000
1,3,5-Trimethylbenzene		31000		990	4000
4-Chlorotoluene		ND		1300	4000

MW 1-24-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0007

Lab Sample ID: 580-23697-7

Date Sampled: 12/17/2010 1525

Client Matrix: Waste

Date Received: 12/22/2010 1200

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 580-78491	Instrument ID:	TAC043
Preparation:	5035	Prep Batch: 580-78307	Lab File ID:	VB00133214.D
Dilution:	10		Initial Weight/Volume:	1.007 g
Date Analyzed:	01/03/2011 1940	Run Type: DL2	Final Weight/Volume:	400 mL
Date Prepared:	12/29/2010 1251			

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
tert-Butylbenzene		ND <i>mw</i>		990	4000 U
1,2,4-Trimethylbenzene		85000		990	4000
sec-Butylbenzene		8200		990	4000
1,3-Dichlorobenzene		ND <i>mw</i>		990	4000 U
4-Isopropyltoluene		7000		990	4000
1,4-Dichlorobenzene		ND <i>mw</i>		990	4000 U
n-Butylbenzene		9200		990	4000
1,2-Dichlorobenzene		ND		990	4000 U
1,2-Dibromo-3-Chloropropane		ND		6600	20000
1,2,4-Trichlorobenzene		ND		990	4000
1,2,3-Trichlorobenzene		ND		990	4000
Hexachlorobutadiene		ND <i>mw</i>		990	4000
Naphthalene		28000		990	4000
Methyl tert-butyl ether		ND <i>mw</i>		990	4000 U

Surrogate	%Rec	Qualifier	Acceptance Limits
Fluorobenzene (Surr)	99		75 - 125
Toluene-d8 (Surr)	98		85 - 115
Ethylbenzene-d10	103		75 - 125
4-Bromofluorobenzene (Surr)	100		85 - 120
Trifluorotoluene (Surr)	100		75 - 125

MW
124-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0008

Lab Sample ID: 580-23697-8

Client Matrix: Waste

Date Sampled: 12/17/2010 1535

Date Received: 12/22/2010 1200

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B
Preparation: 5035
Dilution: 10
Date Analyzed: 01/03/2011 2002
Date Prepared: 12/29/2010 1251

Analysis Batch: 580-78491
Prep Batch: 580-78307
Run Type: DL2

Instrument ID: TAC043
Lab File ID: VB00133215.D
Initial Weight/Volume: 1.027 g
Final Weight/Volume: 400 mL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Dichlorodifluoromethane		ND		970	3900
Chloromethane		ND		9700	39000
Vinyl chloride		ND		190	780
Bromomethane		ND		3400	14000
Chloroethane		ND		9700	39000
Trichlorofluoromethane		ND		970	3900
1,1-Dichloroethene		ND		490	1900
Methylene Chloride		ND		970	3900
trans-1,2-Dichloroethene		ND		970	3900
1,1-Dichloroethane		ND		970	3900
2,2-Dichloropropane		ND		970	3900
cis-1,2-Dichloroethene		ND		970	3900
Chlorobromomethane		ND		1200	3900
Chloroform		ND		970	3900
1,1,1-Trichloroethane		ND		970	3900
Carbon tetrachloride		ND		490	1900
1,1-Dichloropropene		ND		970	3900
Benzene		2400		390	1600
1,2-Dichloroethane		ND		970	3900
Trichloroethene		ND		390	1600
1,2-Dichloropropane		ND		380	1200
Dibromomethane		ND		970	3900
Dichlorobromomethane		ND		970	3900
cis-1,3-Dichloropropene		ND		390	1600
Toluene		34000		970	3900
trans-1,3-Dichloropropene		ND		390	1600
1,1,2-Trichloroethane		ND		290	1200
Tetrachloroethene		2600		490	1900
1,3-Dichloropropane		ND		970	3900
Chlorodibromomethane		ND		970	3900
Ethylene Dibromide		ND		970	3900
Chlorobenzene		ND		970	3900
Ethylbenzene		14000		970	3900
1,1,1,2-Tetrachloroethane		ND		970	3900
1,1,2,2-Tetrachloroethane		ND		320	970
m-Xylene & p-Xylene		61000		970	3900
o-Xylene		30000		970	3900
Styrene		ND		970	3900
Bromoform		ND		1100	3900
Isopropylbenzene		7100		970	3900
Bromobenzene		ND		970	3900
N-Propylbenzene		13000		970	3900
1,2,3-Trichloropropane		ND		1100	3900
2-Chlorotoluene		ND		970	3900
1,3,5-Trimethylbenzene		23000		970	3900
4-Chlorotoluene		ND		1300	3900

MW 1-24-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0008

Lab Sample ID: 580-23697-8

Date Sampled: 12/17/2010 1535

Client Matrix: Waste

Date Received: 12/22/2010 1200

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 580-78491	Instrument ID:	TAC043
Preparation:	5035	Prep Batch: 580-78307	Lab File ID:	VB00133215.D
Dilution:	10		Initial Weight/Volume:	1.027 g
Date Analyzed:	01/03/2011 2002	Run Type: DL2	Final Weight/Volume:	400 mL
Date Prepared:	12/29/2010 1251			

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
tert-Butylbenzene		ND <i>mw</i>		970	3900 <i>U</i>
1,2,4-Trimethylbenzene		66000		970	3900
sec-Butylbenzene		6000		970	3900
1,3-Dichlorobenzene		ND <i>mw</i>		970	3900 <i>U</i>
4-Isopropyltoluene		5500		970	3900
1,4-Dichlorobenzene		ND <i>mw</i>		970	3900 <i>U</i>
n-Butylbenzene		7400		970	3900
1,2-Dichlorobenzene		ND		970	3900 <i>U</i>
1,2-Dibromo-3-Chloropropane		ND		6400	19000
1,2,4-Trichlorobenzene		ND		970	3900
1,2,3-Trichlorobenzene		ND		970	3900
Hexachlorobutadiene		ND		970	3900 <i>U</i>
Naphthalene		21000		970	3900
Methyl tert-butyl ether		ND <i>mw</i>		970	3900 <i>U</i>

Surrogate	%Rec	Qualifier	Acceptance Limits
Fluorobenzene (Surr)	98		75 - 125
Toluene-d8 (Surr)	98		85 - 115
Ethylbenzene-d10	99		75 - 125
4-Bromofluorobenzene (Surr)	103		85 - 120
Trifluorotoluene (Surr)	103		75 - 125

mw
1-24-11



ecology and environment, inc.

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MEMORANDUM

DATE: January 24, 2011

TO: Len Marcus, Project Manager, E & E, Anchorage, Alaska

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington *MW*

SUBJ: **Organic Data Quality Assurance Review, Post Road Drum Site,
Anchorage, Alaska**

REF: TDD: 10-12-0003

PAN: 002233.0623.01SF

The data quality assurance review of 8 waste samples collected from the Post Road Drum site in Anchorage, Alaska, has been completed. Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270) was performed by Test America Seattle, Tacoma, Washington.

The samples were numbered:

10120001	10120002	10120003	10120004
10120005	10120006	10120007	10120008

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained and received within the QC limits of $< 6^{\circ}\text{C}$. The samples were collected on December 17, 2010, were extracted on December 29, 2010, and were analyzed by January 10, 2011, therefore meeting holding time criteria of less than 14 days between collection and extraction (soil holding time limits were used in the absence of waste holding time limits) and less than 40 days between extraction and analysis.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Acceptable.

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050. All Relative Standard Deviations (RSDs) were less than the QC limit of 30%.

4. Continuing Calibration: Satisfactory.

All RRFs were greater than the QC limit of 0.050. All % differences were less than the QC limit of 25 % except 4-nitroaniline with decreasing response factors in the December 30, 2010 and January 10, 2011 continuing calibrations and benzoic acid with an increasing response factor in the December 30, 2010 calibration. Positive results and sample quantitation limits associated with the decreasing response factors were qualified as estimated quantities with a low bias (JL or UJL). Positive results associated with the increasing response factor were qualified as estimated quantities with a high bias (JH).

5. Blanks: Acceptable.

A method blank was analyzed for each 20 sample batch per matrix. There were no detections in any method blank.

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

7. Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS) Analysis: Satisfactory.

All spike analyses were performed per SDG or per matrix per concentration level, whichever was more frequent. All recoveries were within the QC limits except benzyl alcohol, 3-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 3,3'-dichlorobenzidine, and carbazole with low recoveries; no qualifiers were applied based on spike outliers alone.

8. Duplicate Analysis: Satisfactory.

Spike duplicate analyses were performed per SDG or per matrix per concentration level, whichever was more frequent. All spike duplicate results were within QC limits except 21 results; no qualifications were applied based on spike duplicate outliers alone.

9. Internal Standards: Acceptable.

All internal standards (IS) were within ± 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

Positive sample results greater than the method detection limit but less than the reporting limit.

The overall usefulness of the data is based on the criteria outlined in the Site-Specific Sampling Plan and/or Sampling and Quality Assurance Plan, the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical method, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA Contract Laboratory Program National Functional

Guidelines for Organic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

- H - The associated result has a likely high bias.
- J - The associated numerical value is an estimated quantity because the reported concentrations were less than the sample quantitation limits or because quality control criteria limits were not met.
- L - The associated result has a likely low bias.
- Q - The associated positive analytical result is greater than the method detection limit and less than the reporting limit.
- R - The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. Any reported value is unusable. Resampling and/or reanalysis is necessary for verification.
- U - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
- UJ - The material was analyzed for, but not detected. The reported detection limit is estimated because quality control criteria were not met.

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0001

Lab Sample ID: 580-23697-1

Date Sampled: 12/17/2010 1335

Client Matrix: Waste

Date Received: 12/22/2010 1200

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-78369	Instrument ID:	TAC002
Preparation:	3580A	Prep Batch: 580-78324	Lab File ID:	AT158239.D
Dilution:	1.0		Initial Weight/Volume:	0.1688 g
Date Analyzed:	12/30/2010 1636		Final Weight/Volume:	10 mL
Date Prepared:	12/29/2010 1425		Injection Volume:	1 uL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Phenol		ND		440	5900
Bis(2-chloroethyl)ether		ND		590	5900
2-Chlorophenol		ND		440	5900
1,3-Dichlorobenzene		ND		430	3000
1,4-Dichlorobenzene		ND		190	3000
Benzyl alcohol		ND		570	5900
1,2-Dichlorobenzene		ND		380	3000
2-Methylphenol		ND		420	5900
3 & 4 Methylphenol		ND		330	12000
N-Nitrosodi-n-propylamine		ND		570	5900
Hexachloroethane		ND		650	5900
Nitrobenzene		ND		1700	5900
Isophorone		ND		240	5900
2-Nitrophenol		ND		250	5900
2,4-Dimethylphenol		ND		120	5900
Benzoic acid		370000		39000	150000
Bis(2-chloroethoxy)methane		ND		180	5900
2,4-Dichlorophenol		ND		180	5900
1,2,4-Trichlorobenzene		ND		710	3000
Naphthalene		ND		130	1200
4-Chloroaniline		ND		650	5900
Hexachlorobutadiene		ND		540	3000
4-Chloro-3-methylphenol		ND		420	5900
2-Methylnaphthalene		ND		140	1200
Hexachlorocyclopentadiene		ND		150	5900
2,4,6-Trichlorophenol		ND		240	8900
2,4,5-Trichlorophenol		ND		250	5900
2-Chloronaphthalene		ND		110	1200
2-Nitroaniline		ND		250	5900
Dimethyl phthalate		ND		250	5900
Acenaphthylene		ND		95	1200
2,6-Dinitrotoluene		ND		240	5900
3-Nitroaniline		ND		340	5900
Acenaphthene		ND		95	1200
2,4-Dinitrophenol		ND		830	59000
4-Nitrophenol		ND		10000	59000
Dibenzofuran		ND		89	5900
2,4-Dinitrotoluene		ND		150	5900
Diethyl phthalate		ND		890	5900
4-Chlorophenyl phenyl ether		ND		340	5900
Fluorene		ND		71	1200
4-Nitroaniline		ND		830	5900
4,6-Dinitro-2-methylphenol		ND		1100	59000
N-Nitrosodiphenylamine		ND		130	3000
4-Bromophenyl phenyl ether		ND		200	5900
Hexachlorobenzene		ND		230	3000

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0001

Lab Sample ID: 580-23697-1

Date Sampled: 12/17/2010 1335

Client Matrix: Waste

Date Received: 12/22/2010 1200

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-78369	Instrument ID:	TAC002
Preparation:	3580A	Prep Batch: 580-78324	Lab File ID:	AT158239.D
Dilution:	1.0		Initial Weight/Volume:	0.1688 g
Date Analyzed:	12/30/2010 1636		Final Weight/Volume:	10 mL
Date Prepared:	12/29/2010 1425		Injection Volume:	1 uL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Pentachlorophenol		ND		710	12000
Phenanthrene		ND		120	1200
Anthracene		ND		83	1200
Di-n-butyl phthalate		ND		1500	12000
Fluoranthene		ND		71	1200
Pyrene		ND		83	1200
Butyl benzyl phthalate		ND		1800	5900
3,3'-Dichlorobenzidine		ND	sw	470	12000
Benzo[a]anthracene		ND		100	1500
Chrysene		ND		83	1500
Bis(2-ethylhexyl) phthalate		ND		2500	89000
Di-n-octyl phthalate		ND		77	12000
Benzo[a]pyrene		ND		120	1800
Indeno[1,2,3-cd]pyrene		ND		250	2400
Dibenz(a,h)anthracene		ND		130	2400
Benzo[g,h,i]perylene		ND		89	1500
Carbazole		ND	mu	250	8900
1-Methylnaphthalene		ND		110	1800
Benzo[b]fluoranthene		ND		240	1200
Benzo[k]fluoranthene		ND		77	1500
2,2'-oxybis[1-chloropropane]		ND		400	8900

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	41		36 - 145
Phenol-d5	63		38 - 149
Nitrobenzene-d5	86		38 - 141
2-Fluorobiphenyl	88		42 - 140
2,4,6-Tribromophenol	97		28 - 143
Terphenyl-d14	90		42 - 151

mw
1-24-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0002

Lab Sample ID: 580-23697-2

Date Sampled: 12/17/2010 1345

Client Matrix: Waste

Date Received: 12/22/2010 1200

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-78369	Instrument ID:	TAC002
Preparation:	3580A	Prep Batch: 580-78324	Lab File ID:	AT158240.D
Dilution:	10		Initial Weight/Volume:	0.1769 g
Date Analyzed:	12/30/2010 1657		Final Weight/Volume:	10 mL
Date Prepared:	12/29/2010 1425		Injection Volume:	1 uL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Phenol		540000		4200	57000
Bis(2-chloroethyl)ether		ND		5600	57000
2-Chlorophenol		ND		4200	57000
1,3-Dichlorobenzene		ND		4100	28000
1,4-Dichlorobenzene		ND		1800	28000
Benzyl alcohol		ND		5400	57000
1,2-Dichlorobenzene		ND		3600	28000
2-Methylphenol		ND		4000	57000
3 & 4 Methylphenol		ND		3200	110000
N-Nitrosodi-n-propylamine		ND		5500	57000
Hexachloroethane		ND		6200	57000
Nitrobenzene		ND		16000	57000
Isophorone		ND		2300	57000
2-Nitrophenol		ND		2400	57000
2,4-Dimethylphenol		ND		1200	57000
Bis(2-chloroethoxy)methane		ND		1700	57000
2,4-Dichlorophenol		ND		1700	57000
1,2,4-Trichlorobenzene		ND		6800	28000
Naphthalene		ND		1200	11000
4-Chloroaniline		ND		6200	57000
Hexachlorobutadiene		ND		5100	28000
4-Chloro-3-methylphenol		ND		4000	57000
2-Methylnaphthalene		ND		1300	11000
Hexachlorocyclopentadiene		ND		1500	57000
2,4,6-Trichlorophenol		ND		2300	85000
2,4,5-Trichlorophenol		ND		2400	57000
2-Chloronaphthalene		ND		1000	11000
2-Nitroaniline		ND		2400	57000
Dimethyl phthalate		ND		2400	57000
Acenaphthylene		ND		900	11000
2,6-Dinitrotoluene		ND		2300	57000
3-Nitroaniline		ND		3300	57000
Acenaphthene		ND		900	11000
2,4-Dinitrophenol		ND		7900	570000
4-Nitrophenol		ND		96000	570000
Dibenzofuran		ND		850	57000
2,4-Dinitrotoluene		ND		1400	57000
Diethyl phthalate		ND		8500	57000
4-Chlorophenyl phenyl ether		ND		3200	57000
Fluorene		ND		680	11000
4-Nitroaniline		ND		7900	57000
4,6-Dinitro-2-methylphenol		ND		10000	570000
N-Nitrosodiphenylamine		ND		1200	28000
4-Bromophenyl phenyl ether		ND		1900	57000
Hexachlorobenzene		ND		2100	28000
Pentachlorophenol		ND		6800	110000

mw 12411

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0002

Lab Sample ID: 580-23697-2

Client Matrix: Waste

Date Sampled: 12/17/2010 1345

Date Received: 12/22/2010 1200

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-78369	Instrument ID:	TAC002
Preparation:	3580A	Prep Batch: 580-78324	Lab File ID:	AT158240.D
Dilution:	10		Initial Weight/Volume:	0.1769 g
Date Analyzed:	12/30/2010 1657		Final Weight/Volume:	10 mL
Date Prepared:	12/29/2010 1425		Injection Volume:	1 uL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Phenanthrene		ND		1200	11000
Anthracene		ND		790	11000
Di-n-butyl phthalate		ND		15000	110000
Fluoranthene		ND		680	11000
Pyrene		ND		790	11000
Butyl benzyl phthalate		ND		18000	57000
3,3'-Dichlorobenzidine		ND	mu	4500	110000
Benzo[a]anthracene		ND		960	14000
Chrysene		ND		790	14000
Bis(2-ethylhexyl) phthalate		ND		24000	850000
Di-n-octyl phthalate		ND		730	110000
Benzo[a]pyrene		ND		1200	17000
Indeno[1,2,3-cd]pyrene		ND		2400	23000
Dibenz(a,h)anthracene		ND		1200	23000
Benzo[g,h,i]perylene		ND		850	14000
Carbazole		ND	mu	2400	85000
1-Methylnaphthalene		ND		1000	17000
Benzo[b]fluoranthene		ND		2300	11000
Benzo[k]fluoranthene		ND		730	14000
2,2'-oxybis[1-chloropropane]		ND		3800	85000

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	81		36 - 145
Phenol-d5	84		38 - 149
Nitrobenzene-d5	62		38 - 141
2-Fluorobiphenyl	83		42 - 140
2,4,6-Tribromophenol	39		28 - 143
Terphenyl-d14	78		42 - 151

mw
F2411

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0002

Lab Sample ID: 580-23697-2

Client Matrix: Waste

Date Sampled: 12/17/2010 1345

Date Received: 12/22/2010 1200

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-78841	Instrument ID:	TAC002
Preparation:	3580A	Prep Batch: 580-78324	Lab File ID:	AT158351.D
Dilution:	100		Initial Weight/Volume:	0.1769 g
Date Analyzed:	01/10/2011 1655	Run Type: DL	Final Weight/Volume:	10 mL
Date Prepared:	12/29/2010 1425		Injection Volume:	1 µL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Benzoic acid		27000000		3700000	14000000

9mw
124-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0003

Lab Sample ID: 580-23697-3

Date Sampled: 12/17/2010 1400

Client Matrix: Waste

Date Received: 12/22/2010 1200

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-78369	Instrument ID:	TAC002
Preparation:	3580A	Prep Batch: 580-78324	Lab File ID:	AT158231.D
Dilution:	10		Initial Weight/Volume:	0.2842 g
Date Analyzed:	12/30/2010 1321		Final Weight/Volume:	10 mL
Date Prepared:	12/29/2010 1425		Injection Volume:	1 uL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Phenol		ND		2600	35000
Bis(2-chloroethyl)ether		ND		3500	35000
2-Chlorophenol		ND		2600	35000
1,3-Dichlorobenzene		ND		2500	18000
1,4-Dichlorobenzene		ND		1100	18000
Benzyl alcohol		ND		3400	35000
1,2-Dichlorobenzene		ND		2300	18000
2-Methylphenol		ND		2500	35000
3 & 4 Methylphenol		ND		2000	70000
N-Nitrosodi-n-propylamine		ND		3400	35000
Hexachloroethane		ND		3900	35000
Nitrobenzene		ND		10000	35000
Isophorone		ND		1400	35000
2-Nitrophenol		ND		1500	35000
2,4-Dimethylphenol		ND		740	35000
Benzoic acid		ND		230000	880000
Bis(2-chloroethoxy)methane		ND		1100	35000
2,4-Dichlorophenol		ND		1100	35000
1,2,4-Trichlorobenzene		ND		4200	18000
Naphthalene		ND		770	7000
4-Chloroaniline		ND		3900	35000
Hexachlorobutadiene		ND		3200	18000
4-Chloro-3-methylphenol		ND		2500	35000
2-Methylnaphthalene		ND		810	7000
Hexachlorocyclopentadiene		ND		910	35000
2,4,6-Trichlorophenol		ND		1400	53000
2,4,5-Trichlorophenol		ND		1500	35000
2-Chloronaphthalene		ND		630	7000
2-Nitroaniline		ND		1500	35000
Dimethyl phthalate		ND		1500	35000
Acenaphthylene		ND		560	7000
2,6-Dinitrotoluene		ND		1400	35000
3-Nitroaniline		ND		2000	35000
Acenaphthene		ND		560	7000
2,4-Dinitrophenol		ND		4900	350000
4-Nitrophenol		ND		60000	350000
Dibenzofuran		ND		530	35000
2,4-Dinitrotoluene		ND		880	35000
Diethyl phthalate		ND		5300	35000
4-Chlorophenyl phenyl ether		ND		2000	35000
Fluorene		ND		420	7000
4-Nitroaniline		ND		4900	35000
4,6-Dinitro-2-methylphenol		ND		6300	350000
N-Nitrosodiphenylamine		ND		770	18000
4-Bromophenyl phenyl ether		ND		1200	35000
Hexachlorobenzene		ND		1300	18000

mw 1-24-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0003

Lab Sample ID: 580-23697-3

Date Sampled: 12/17/2010 1400

Client Matrix: Waste

Date Received: 12/22/2010 1200

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-78369	Instrument ID:	TAC002
Preparation:	3580A	Prep Batch: 580-78324	Lab File ID:	AT158231.D
Dilution:	10		Initial Weight/Volume:	0.2842 g
Date Analyzed:	12/30/2010 1321		Final Weight/Volume:	10 mL
Date Prepared:	12/29/2010 1425		Injection Volume:	1 µL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Pentachlorophenol		ND		4200	70000
Phenanthrene		ND		740	7000
Anthracene		ND		490	7000
Di-n-butyl phthalate		ND		9100	70000
Fluoranthene		ND		420	7000
Pyrene		ND		490	7000
Butyl benzyl phthalate		ND		11000	35000
3,3'-Dichlorobenzidine		ND		2800	70000
Benzo[a]anthracene		ND		600	8800
Chrysene		ND		490	8800
Bis(2-ethylhexyl) phthalate		1300000		15000	530000
Di-n-octyl phthalate		ND		460	70000
Benzo[a]pyrene		ND		740	11000
Indeno[1,2,3-cd]pyrene		ND		1500	14000
Dibenz(a,h)anthracene		ND		770	14000
Benzo[g,h,i]perylene		ND		530	8800
Carbazole		ND		1500	53000
1-Methylnaphthalene		ND		630	11000
Benzo[b]fluoranthene		ND		1400	7000
Benzo[k]fluoranthene		ND		460	8800
2,2'-oxybis[1-chloropropane]		ND		2400	53000

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	81		36 - 145
Phenol-d5	68		38 - 149
Nitrobenzene-d5	70		38 - 141
2-Fluorobiphenyl	82		42 - 140
2,4,6-Tribromophenol	48		28 - 143
Terphenyl-d14	72		42 - 151

mw
1-24-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0004

Lab Sample ID: 580-23697-4

Date Sampled: 12/17/2010 1425

Client Matrix: Waste

Date Received: 12/22/2010 1200

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-78369	Instrument ID:	TAC002
Preparation:	3580A	Prep Batch: 580-78324	Lab File ID:	AT158234.D
Dilution:	10		Initial Weight/Volume:	0.1755 g
Date Analyzed:	12/30/2010 1450		Final Weight/Volume:	10 mL
Date Prepared:	12/29/2010 1425		Injection Volume:	1 uL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Phenol		ND		4200	57000
Bis(2-chloroethyl)ether		ND		5600	57000
2-Chlorophenol		ND		4200	57000
1,3-Dichlorobenzene		ND		4100	28000
1,4-Dichlorobenzene		ND		1800	28000
Benzyl alcohol		ND		5500	57000
1,2-Dichlorobenzene		ND		3600	28000
2-Methylphenol		ND		4000	57000
3 & 4 Methylphenol		ND		3200	110000
N-Nitrosodi-n-propylamine		ND		5500	57000
Hexachloroethane		ND		6300	57000
Nitrobenzene		ND		17000	57000
Isophorone		ND		2300	57000
2-Nitrophenol		ND		2500	57000
2,4-Dimethylphenol		ND		1200	57000
Benzoic acid		ND		370000	1400000
Bis(2-chloroethoxy)methane		ND		1700	57000
2,4-Dichlorophenol		ND		1700	57000
1,2,4-Trichlorobenzene		ND		6800	28000
Naphthalene		ND		1300	11000
4-Chloroaniline		ND		6300	57000
Hexachlorobutadiene		ND		5200	28000
4-Chloro-3-methylphenol		ND		4000	57000
2-Methylnaphthalene		ND		1300	11000
Hexachlorocyclopentadiene		ND		1500	57000
2,4,6-Trichlorophenol		ND		2300	85000
2,4,5-Trichlorophenol		ND		2500	57000
2-Chloronaphthalene		ND		1000	11000
2-Nitroaniline		ND		2400	57000
Dimethyl phthalate		ND		2400	57000
Acenaphthylene		ND		910	11000
2,6-Dinitrotoluene		ND		2300	57000
3-Nitroaniline		ND		3300	57000
Acenaphthene		ND		910	11000
2,4-Dinitrophenol		ND		8000	570000
4-Nitrophenol		ND		97000	570000
Dibenzofuran		ND		850	57000
2,4-Dinitrotoluene		ND		1400	57000
Diethyl phthalate		ND		8500	57000
4-Chlorophenyl phenyl ether		ND		3200	57000
Fluorene		ND		680	11000
4-Nitroaniline		ND		8000	57000
4,6-Dinitro-2-methylphenol		ND		10000	570000
N-Nitrosodiphenylamine		ND		1300	28000
4-Bromophenyl phenyl ether		ND		1900	57000
Hexachlorobenzene		ND		2200	28000

MW 12411

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0004

Lab Sample ID: 580-23697-4

Date Sampled: 12/17/2010 1425

Client Matrix: Waste

Date Received: 12/22/2010 1200

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-78369	Instrument ID:	TAC002
Preparation:	3580A	Prep Batch: 580-78324	Lab File ID:	AT158234.D
Dilution:	10		Initial Weight/Volume:	0.1755 g
Date Analyzed:	12/30/2010 1450		Final Weight/Volume:	10 mL
Date Prepared:	12/29/2010 1425		Injection Volume:	1 uL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Pentachlorophenol		ND		6800	110000
Phenanthrene		ND		1200	11000
Anthracene		ND		800	11000
Di-n-butyl phthalate		ND		15000	110000
Fluoranthene		ND		680	11000
Pyrene		ND		800	11000
Butyl benzyl phthalate		ND		18000	57000
3,3'-Dichlorobenzidine		ND	mu	4500	110000
Benzo[a]anthracene		ND		970	14000
Chrysene		ND		800	14000
Bis(2-ethylhexyl) phthalate		ND		24000	850000
Di-n-octyl phthalate		ND		740	110000
Benzo[a]pyrene		ND		1200	17000
Indeno[1,2,3-cd]pyrene		ND		2400	23000
Dibenz(a,h)anthracene		ND		1300	23000
Benzo[g,h,i]perylene		ND		850	14000
Carbazole		ND	mu	2500	85000
1-Methylnaphthalene		ND		1000	17000
Benzo[b]fluoranthene		ND		2300	11000
Benzo[k]fluoranthene		ND		740	14000
2,2'-oxybis[1-chloropropane]		ND		3800	85000

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	88		36 - 145
Phenol-d5	65		38 - 149
Nitrobenzene-d5	71		38 - 141
2-Fluorobiphenyl	82		42 - 140
2,4,6-Tribromophenol	42		28 - 143
Terphenyl-d14	69		42 - 151

mu
12411

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0005

Lab Sample ID: 580-23697-5

Date Sampled: 12/17/2010 1440

Client Matrix: Waste

Date Received: 12/22/2010 1200

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-78369	Instrument ID:	TAC002
Preparation:	3580A	Prep Batch: 580-78324	Lab File ID:	AT158235.D
Dilution:	10		Initial Weight/Volume:	0.1464 g
Date Analyzed:	12/30/2010 1511		Final Weight/Volume:	10 mL
Date Prepared:	12/29/2010 1425		Injection Volume:	1 uL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Phenol		530000		5100	68000
Bis(2-chloroethyl)ether		ND		6800	68000 U
2-Chlorophenol		8200	JQ	5100	68000
1,3-Dichlorobenzene		ND		4900	34000 U
1,4-Dichlorobenzene		ND		2200	34000
Benzyl alcohol		ND		6600	68000
1,2-Dichlorobenzene		ND		4400	34000
2-Methylphenol		ND		4800	68000
3 & 4 Methylphenol		ND		3800	140000
N-Nitrosodi-n-propylamine		ND		6600	68000
Hexachloroethane		ND		7500	68000
Nitrobenzene		ND		20000	68000
Isophorone		ND		2800	68000
2-Nitrophenol		ND		2900	68000
2,4-Dimethylphenol		ND		1400	68000
Bis(2-chloroethoxy)methane		ND		2000	68000
2,4-Dichlorophenol		ND		2000	68000
1,2,4-Trichlorobenzene		ND		8200	34000
Naphthalene		ND		1500	14000
4-Chloroaniline		ND		7500	68000
Hexachlorobutadiene		ND		6200	34000
4-Chloro-3-methylphenol		ND		4800	68000
2-Methylnaphthalene		ND		1600	14000
Hexachlorocyclopentadiene		ND		1800	68000
2,4,6-Trichlorophenol		ND		2700	100000
2,4,5-Trichlorophenol		ND		2900	68000
2-Chloronaphthalene		ND		1200	14000
2-Nitroaniline		ND		2900	68000
Dimethyl phthalate		ND		2900	68000
Acenaphthylene		ND		1100	14000
2,6-Dinitrotoluene		ND		2800	68000
3-Nitroaniline		ND	cm	4000	68000
Acenaphthene		ND		1100	14000
2,4-Dinitrophenol		ND		9600	680000
4-Nitrophenol		ND		120000	680000
Dibenzofuran		ND		1000	68000
2,4-Dinitrotoluene		ND		1700	68000
Diethyl phthalate		ND		10000	68000
4-Chlorophenyl phenyl ether		ND		3900	68000
Fluorene		ND		820	14000
4-Nitroaniline		ND		9600	68000
4,6-Dinitro-2-methylphenol		ND		12000	680000
N-Nitrosodiphenylamine		ND		1500	34000
4-Bromophenyl phenyl ether		ND		2300	68000
Hexachlorobenzene		ND		2600	34000
Pentachlorophenol		ND		8200	140000

Mn H24-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0005

Lab Sample ID: 580-23697-5

Date Sampled: 12/17/2010 1440

Client Matrix: Waste

Date Received: 12/22/2010 1200

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-78369	Instrument ID:	TAC002
Preparation:	3580A	Prep Batch: 580-78324	Lab File ID:	AT158235.D
Dilution:	10		Initial Weight/Volume:	0.1464 g
Date Analyzed:	12/30/2010 1511		Final Weight/Volume:	10 mL
Date Prepared:	12/29/2010 1425		Injection Volume:	1 uL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Phenanthrene		ND		1400	14000
Anthracene		ND		960	14000
Di-n-butyl phthalate		ND		18000	140000
Fluoranthene		ND		820	14000
Pyrene		ND		960	14000
Butyl benzyl phthalate		ND		21000	68000
3,3'-Dichlorobenzidine		ND	~m	5400	140000
Benzo[a]anthracene		ND		1200	17000
Chrysene		ND		960	17000
Bis(2-ethylhexyl) phthalate		ND		29000	1000000
Di-n-octyl phthalate		ND		890	140000
Benzo[a]pyrene		ND		1400	20000
Indeno[1,2,3-cd]pyrene		ND		2900	27000
Dibenz(a,h)anthracene		ND		1500	27000
Benzo[g,h,i]perylene		ND		1000	17000
Carbazole		ND	~m	2900	100000
1-Methylnaphthalene		ND		1200	20000
Benzo[b]fluoranthene		ND		2800	14000
Benzo[k]fluoranthene		ND		890	17000
2,2'-oxybis[1-chloropropane]		ND	na	4600	100000

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	88		36 - 145
Phenol-d5	52		38 - 149
Nitrobenzene-d5	72		38 - 141
2-Fluorobiphenyl	95		42 - 140
2,4,6-Tribromophenol	51		28 - 143
Terphenyl-d14	82		42 - 151

mw
12/11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0005

Lab Sample ID: 580-23697-5

Date Sampled: 12/17/2010 1440

Client Matrix: Waste

Date Received: 12/22/2010 1200

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-78841	Instrument ID:	TAC002
Preparation:	3580A	Prep Batch: 580-78324	Lab File ID:	AT158352.D
Dilution:	100		Initial Weight/Volume:	0.1464 g
Date Analyzed:	01/10/2011 1717	Run Type: DL	Final Weight/Volume:	10 mL
Date Prepared:	12/29/2010 1425		Injection Volume:	1 uL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Benzoic acid		4000000		4400000	17000000

mw
12/24/11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0006

Lab Sample ID: 580-23697-6

Date Sampled: 12/17/2010 1500

Client Matrix: Waste

Date Received: 12/22/2010 1200

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-78369	Instrument ID:	TAC002
Preparation:	3580A	Prep Batch: 580-78324	Lab File ID:	AT158236.D
Dilution:	10		Initial Weight/Volume:	0.1534 g
Date Analyzed:	12/30/2010 1532		Final Weight/Volume:	10 mL
Date Prepared:	12/29/2010 1425		Injection Volume:	1 uL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Phenol		ND		4800	65000
Bis(2-chloroethyl)ether		ND		6500	65000
2-Chlorophenol		ND		4800	65000
1,3-Dichlorobenzene		ND		4700	33000
1,4-Dichlorobenzene		ND		2100	33000
Benzyl alcohol		ND		6300	65000
1,2-Dichlorobenzene		ND		4200	33000
2-Methylphenol		ND		4600	65000
3 & 4 Methylphenol		ND		3700	130000
N-Nitrosodi-n-propylamine		ND		6300	65000
Hexachloroethane		ND		7200	65000
Nitrobenzene		ND		19000	65000
Isophorone		ND		2700	65000
2-Nitrophenol		ND		2800	65000
2,4-Dimethylphenol		ND		1400	65000
Benzoic acid		ND		420000	1600000
Bis(2-chloroethoxy)methane		ND		2000	65000
2,4-Dichlorophenol		ND		2000	65000
1,2,4-Trichlorobenzene		ND		7800	33000
Naphthalene		ND		1400	13000
4-Chloroaniline		ND		7200	65000
Hexachlorobutadiene		ND		5900	33000
4-Chloro-3-methylphenol		ND		4600	65000
2-Methylnaphthalene		ND		1500	13000
Hexachlorocyclopentadiene		ND		1700	65000
2,4,6-Trichlorophenol		ND		2600	98000
2,4,5-Trichlorophenol		ND		2800	65000
2-Chloronaphthalene		ND		1200	13000
2-Nitroaniline		ND		2700	65000
Dimethyl phthalate		ND		2700	65000
Acenaphthylene		ND		1000	13000
2,6-Dinitrotoluene		ND		2700	65000
3-Nitroaniline		ND		3800	65000
Acenaphthene		ND		1000	13000
2,4-Dinitrophenol		ND		9100	650000
4-Nitrophenol		ND		110000	650000
Dibenzofuran		ND		980	65000
2,4-Dinitrotoluene		ND		1600	65000
Diethyl phthalate		ND		9800	65000
4-Chlorophenyl phenyl ether		ND		3700	65000
Fluorene		ND		780	13000
4-Nitroaniline		ND		9100	65000
4,6-Dinitro-2-methylphenol		ND		12000	650000
N-Nitrosodiphenylamine		ND		1400	33000
4-Bromophenyl phenyl ether		ND		2200	65000
Hexachlorobenzene		ND		2500	33000

mm 12/21/11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0006

Lab Sample ID: 580-23697-6

Date Sampled: 12/17/2010 1500

Client Matrix: Waste

Date Received: 12/22/2010 1200

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-78369	Instrument ID:	TAC002
Preparation:	3580A	Prep Batch: 580-78324	Lab File ID:	AT158236.D
Dilution:	10		Initial Weight/Volume:	0.1534 g
Date Analyzed:	12/30/2010 1532		Final Weight/Volume:	10 mL
Date Prepared:	12/29/2010 1425		Injection Volume:	1 uL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Pentachlorophenol		ND		7800	130000
Phenanthrene		ND		1400	13000
Anthracene		ND		910	13000
Di-n-butyl phthalate		ND		17000	130000
Fluoranthene		ND		780	13000
Pyrene		ND		910	13000
Butyl benzyl phthalate		ND		20000	65000
3,3'-Dichlorobenzidine		ND		5100	130000
Benzo[a]anthracene		ND		1100	16000
Chrysene		ND		910	16000
Bis(2-ethylhexyl) phthalate		ND		27000	980000
Di-n-octyl phthalate		ND		850	130000
Benzo[a]pyrene		ND		1400	20000
Indeno[1,2,3-cd]pyrene		ND		2700	26000
Dibenz(a,h)anthracene		ND		1400	26000
Benzo[g,h,i]perylene		ND		980	16000
Carbazole		ND		2800	98000
1-Methylnaphthalene		ND		1200	20000
Benzo[b]fluoranthene		ND		2700	13000
Benzo[k]fluoranthene		ND		850	16000
2,2'-oxybis[1-chloropropane]		ND		4400	98000

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	81		36 - 145
Phenol-d5	67		38 - 149
Nitrobenzene-d5	74		38 - 141
2-Fluorobiphenyl	86		42 - 140
2,4,6-Tribromophenol	73		28 - 143
Terphenyl-d14	73		42 - 151

mw
12/4/11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0007

Lab Sample ID: 580-23697-7

Date Sampled: 12/17/2010 1525

Client Matrix: Waste

Date Received: 12/22/2010 1200

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch:	580-78369	Instrument ID:	TAC002
Preparation:	3580A	Prep Batch:	580-78324	Lab File ID:	AT158237.D
Dilution:	10			Initial Weight/Volume:	0.1145 g
Date Analyzed:	12/30/2010 1553			Final Weight/Volume:	10 mL
Date Prepared:	12/29/2010 1425			Injection Volume:	1 µL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Phenol		ND		6500	87000
Bis(2-chloroethyl)ether		ND		8600	87000
2-Chlorophenol		ND		6500	87000
1,3-Dichlorobenzene		ND		6300	44000
1,4-Dichlorobenzene		ND		2800	44000
Benzyl alcohol		ND		8400	87000
1,2-Dichlorobenzene		ND		5600	44000
2-Methylphenol		ND		6200	87000
3 & 4 Methylphenol		ND		4900	170000
N-Nitrosodi-n-propylamine		ND		8500	87000
Hexachloroethane		ND		9600	87000
Nitrobenzene		ND		25000	87000
Isophorone		ND		3600	87000
2-Nitrophenol		ND		3800	87000
2,4-Dimethylphenol		ND		1800	87000
Benzoic acid		ND		570000	2200000
Bis(2-chloroethoxy)methane		ND		2600	87000
2,4-Dichlorophenol		ND		2600	87000
1,2,4-Trichlorobenzene		ND <i>mw</i>		10000	44000
Naphthalene		38000		1900	17000
4-Chloroaniline		ND		9600	87000
Hexachlorobutadiene		ND		7900	44000
4-Chloro-3-methylphenol		ND <i>mw</i>		6200	87000
2-Methylnaphthalene		60000		2000	17000
Hexachlorocyclopentadiene		ND		2300	87000
2,4,6-Trichlorophenol		ND		3500	130000
2,4,5-Trichlorophenol		ND		3800	87000
2-Chloronaphthalene		ND		1600	17000
2-Nitroaniline		ND		3700	87000
Dimethyl phthalate		ND		3700	87000
Acenaphthylene		ND		1400	17000
2,6-Dinitrotoluene		ND		3600	87000
3-Nitroaniline		ND		5100	87000
Acenaphthene		ND		1400	17000
2,4-Dinitrophenol		ND		12000	870000
4-Nitrophenol		ND		150000	870000
Dibenzofuran		ND		1300	87000
2,4-Dinitrotoluene		ND		2200	87000
Diethyl phthalate		ND		13000	87000
4-Chlorophenyl phenyl ether		ND		5000	87000
Fluorene		ND		1000	17000
4-Nitroaniline		ND		12000	87000
4,6-Dinitro-2-methylphenol		ND		16000	870000
N-Nitrosodiphenylamine		ND		1900	44000
4-Bromophenyl phenyl ether		ND		2900	87000
Hexachlorobenzene		ND <i>mw</i>		3300	44000

mw 124-1

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0007

Lab Sample ID: 580-23697-7

Date Sampled: 12/17/2010 1525

Client Matrix: Waste

Date Received: 12/22/2010 1200

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch:	580-78369	Instrument ID:	TAC002
Preparation:	3580A	Prep Batch:	580-78324	Lab File ID:	AT158237.D
Dilution:	10			Initial Weight/Volume:	0.1145 g
Date Analyzed:	12/30/2010 1553			Final Weight/Volume:	10 mL
Date Prepared:	12/29/2010 1425			Injection Volume:	1 uL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Pentachlorophenol		ND <i>mm</i>		10000	170000
Phenanthrene		10000	JQ	1800	17000
Anthracene		ND		1200	17000
Di-n-butyl phthalate		ND		23000	170000
Fluoranthene		ND		1000	17000
Pyrene		ND		1200	17000
Butyl benzyl phthalate		ND		27000	87000
3,3'-Dichlorobenzidine		ND	<i>mm</i>	6900	170000
Benzo[a]anthracene		ND		1500	22000
Chrysene		ND <i>mm</i>		1200	22000
Bis(2-ethylhexyl) phthalate		220000	JQ	37000	1300000
Di-n-octyl phthalate		ND		1100	170000
Benzo[a]pyrene		ND		1800	26000
Indeno[1,2,3-cd]pyrene		ND		3700	35000
Dibenz(a,h)anthracene		ND		1900	35000
Benzo[g,h,i]perylene		ND		1300	22000
Carbazole		ND <i>mm</i>	<i>mm</i>	3800	130000
1-Methylnaphthalene		47000		1600	26000
Benzo[b]fluoranthene		ND		3600	17000
Benzo[k]fluoranthene		ND		1100	22000
2,2'-oxybis[1-chloropropane]		ND <i>mm</i>		5900	130000

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	80		36 - 145
Phenol-d5	61		38 - 149
Nitrobenzene-d5	58		38 - 141
2-Fluorobiphenyl	86		42 - 140
2,4,6-Tribromophenol	71		28 - 143
Terphenyl-d14	82		42 - 151

mm
12/24/11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0008

Lab Sample ID: 580-23697-8

Date Sampled: 12/17/2010 1535

Client Matrix: Waste

Date Received: 12/22/2010 1200

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-78369	Instrument ID:	TAC002
Preparation:	3580A	Prep Batch: 580-78324	Lab File ID:	AT158238.D
Dilution:	10		Initial Weight/Volume:	0.1173 g
Date Analyzed:	12/30/2010 1615		Final Weight/Volume:	10 mL
Date Prepared:	12/29/2010 1425		Injection Volume:	1 uL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Phenol		ND		6300	85000
Bis(2-chloroethyl)ether		ND		8400	85000
2-Chlorophenol		ND		6300	85000
1,3-Dichlorobenzene		ND		6100	43000
1,4-Dichlorobenzene		ND		2700	43000
Benzyl alcohol		ND		8200	85000
1,2-Dichlorobenzene		ND		5500	43000
2-Methylphenol		ND		6100	85000
3 & 4 Methylphenol		ND		4800	170000
N-Nitrosodi-n-propylamine		ND		8300	85000
Hexachloroethane		ND		9400	85000
Nitrobenzene		ND		25000	85000
Isophorone		ND		3500	85000
2-Nitrophenol		ND		3700	85000
2,4-Dimethylphenol		ND		1800	85000
Benzoic acid		ND		550000	2100000
Bis(2-chloroethoxy)methane		ND		2600	85000
2,4-Dichlorophenol		ND		2600	85000
1,2,4-Trichlorobenzene		ND		10000	43000
Naphthalene		38000		1900	17000
4-Chloroaniline		ND		9400	85000
Hexachlorobutadiene		ND		7800	43000
4-Chloro-3-methylphenol		ND		6100	85000
2-Methylnaphthalene		64000		2000	17000
Hexachlorocyclopentadiene		ND		2200	85000
2,4,6-Trichlorophenol		ND		3400	130000
2,4,5-Trichlorophenol		ND		3700	85000
2-Chloronaphthalene		ND		1500	17000
2-Nitroaniline		ND		3600	85000
Dimethyl phthalate		ND		3600	85000
Acenaphthylene		ND		1400	17000
2,6-Dinitrotoluene		ND		3500	85000
3-Nitroaniline		ND		4900	85000
Acenaphthene		ND		1400	17000
2,4-Dinitrophenol		ND		12000	850000
4-Nitrophenol		ND		140000	850000
Dibenzofuran		ND		1300	85000
2,4-Dinitrotoluene		ND		2100	85000
Diethyl phthalate		ND		13000	85000
4-Chlorophenyl phenyl ether		ND		4900	85000
Fluorene		ND		1000	17000
4-Nitroaniline		ND		12000	85000
4,6-Dinitro-2-methylphenol		ND		15000	850000
N-Nitrosodiphenylamine		ND		1900	43000
4-Bromophenyl phenyl ether		ND		2800	85000
Hexachlorobenzene		ND		3200	43000

mm (24-1)

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0008

Lab Sample ID: 580-23697-8

Date Sampled: 12/17/2010 1535

Client Matrix: Waste

Date Received: 12/22/2010 1200

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-78369	Instrument ID:	TAC002
Preparation:	3580A	Prep Batch: 580-78324	Lab File ID:	AT158238.D
Dilution:	10		Initial Weight/Volume:	0.1173 g
Date Analyzed:	12/30/2010 1615		Final Weight/Volume:	10 mL
Date Prepared:	12/29/2010 1425		Injection Volume:	1 uL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Pentachlorophenol		ND <i>mu</i>		10000	170000 <i>U</i>
Phenanthrene		11000	<i>JQ</i>	1800	17000
Anthracene		ND		1200	17000 <i>U</i>
Di-n-butyl phthalate		ND		22000	170000
Fluoranthene		ND		1000	17000
Pyrene		ND		1200	17000
Butyl benzyl phthalate		ND	<i>mu</i>	26000	85000
3,3'-Dichlorobenzidine		ND		6700	170000
Benzo[a]anthracene		ND		1400	21000
Chrysene		ND <i>mu</i>		1200	21000 <i>U</i>
Bis(2-ethylhexyl) phthalate		200000	<i>JQ</i>	36000	1300000
Di-n-octyl phthalate		ND		1100	170000 <i>U</i>
Benzo[a]pyrene		ND		1800	26000
Indeno[1,2,3-cd]pyrene		ND		3600	34000
Dibenz(a,h)anthracene		ND		1900	34000
Benzo[g,h,i]perylene		ND		1300	21000
Carbazole		ND <i>mu</i>	<i>mu</i>	3700	130000 <i>U</i>
1-Methylnaphthalene		47000		1500	26000
Benzo[b]fluoranthene		ND		3500	17000 <i>U</i>
Benzo[k]fluoranthene		ND		1100	21000
2,2'-oxybis[1-chloropropane]		ND <i>mu</i>		5700	130000 <i>U</i>

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorophenol	72		36 - 145
Phenol-d5	61		38 - 149
Nitrobenzene-d5	60		38 - 141
2-Fluorobiphenyl	86		42 - 140
2,4,6-Tribromophenol	32		28 - 143
Terphenyl-d14	74		42 - 151

mu
F-2441



ecology and environment, inc.

International Specialists in the Environment

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Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: January 24, 2011

TO: Len Marcus, Project Manager, E & E, Anchorage, Alaska

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington *MW*

SUBJ: **Organic Data Quality Assurance Review, Post Road Drum Site, Anchorage, Alaska**

REF: TDD: 10-12-0003 PAN: 002233.0623.01SF

The data quality assurance review of 5 waste samples collected from the Post Road Drum site in Anchorage, Alaska, has been completed. Target Analyte List (TAL) metals analyses (EPA Methods 6010, 6020, and 7471) were performed by Test America Seattle, Tacoma, Washington.

The samples were numbered:

10120003	10120004	10120006	10120007	10120008
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Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained at $< 6^{\circ}\text{C}$. The samples were collected on December 17, 2010, and were analyzed by January 11, 2011, therefore meeting QC criteria of less than 6 months between collection, extraction, and analysis (28 days for mercury); soil holding time limits were used in the absence of waste holding time limits.

2. Initial and Continuing Calibration: Acceptable.

A minimum of one calibration standard and a blank were analyzed at the beginning of the ICP analysis sequence and after every 10 samples. No results were greater than 110% of the highest calibration standard. All ICP recoveries were within the QC limits of 90% to 110%. All AA recoveries were within QC limits of 80% to 120%.

3. Blanks: Satisfactory.

A preparation blank was analyzed for each 20 samples or per matrix per concentration level. Blanks were analyzed after each Initial or Continuing Calibration Verification. The following elements were detected in the applicable calibration and/or preparation blanks:

Blank	Element	Concentration
Initial Calibration Blank (ICB)	Nickel	0.000978 mg/L
Continuing Calibration Blank (CCB) 2	Barium	0.00203 mg/L
	Cobalt	0.00256 mg/L
Method Blank	Manganese	0.287 mg/kg
	Nickel	0.188 mg/kg
	Zinc	1.11 mg/kg
	Thallium	0.00105 mg/kg
	Mercury	0.00583 mg/kg

Associated sample results were qualified as not detected (U) if the sample result was less than five times the positive blank concentration. Associated sample results were qualified as estimated quantities (J or UJ) if the sample result was less than five times the absolute value of the negative blank concentration.

4. ICP Interference Check Sample: Acceptable.

An Interference Check Sample (ICS) was analyzed at the beginning and end of each sequence or at least twice every 8 hours, whichever was more frequent. All ICS (solution AB) results were within QC limits of 80% - 120% recovery.

5. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

6. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. ICP Serial Dilution: Satisfactory.

A serial dilution analysis was performed per matrix per concentration or per sample delivery group, whichever was more frequent. All serial dilution results were within QC limits except iron and lead. Associated sample results were qualified as estimated quantities with an unknown bias (JK or UJK).

8. Matrix Spike Analysis: Satisfactory.

A matrix spike analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. Spike and spike duplicate recoveries were within the QC limits except beryllium, magnesium, manganese, vanadium, and zinc with low recoveries and potassium and sodium with high recoveries. Sample results associated with the low recovery outliers were qualified as estimated quantities with a low bias (JL or UJL). Positive sample results associated with the high recovery outliers were qualified as estimated quantities with a high bias (JH).

9. Duplicate Analysis: Satisfactory.

A laboratory duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. All duplicate results were within QC limits except iron, magnesium and

antimony. Associated sample results were qualified as estimated quantities with an unknown bias (JK or UJK).

10. Overall Assessment of Data for Use

The overall usefulness of the data is based on the criteria outlined in the Site-Specific Sampling Plan and/or Sampling and Quality Assurance Plan, the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical methods, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

- H - The associated sample result has a likely high bias.
- J - The associated numerical value is an estimated quantity because the reported concentrations were less than the sample detection limits but greater than the instrument detection limits or because quality control criteria limits were not met.
- K - The associated sample result has a likely unknown bias.
- L - The associated sample result has a likely low bias.
- R - The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. Any reported value is unusable. Resampling and/or reanalysis is necessary for verification.
- U - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
- UJ - The material was analyzed for, but not detected. The reported detection limit is estimated because quality control criteria were not met.

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0003

Lab Sample ID: 580-23697-3

Client Matrix: Waste

Date Sampled: 12/17/2010 1400

Date Received: 12/22/2010 1200

6010B Metals (ICP).

Method:	6010B	Analysis Batch:	580-78954	Instrument ID:	SEA027
Preparation:	3050B	Prep Batch:	580-78883	Lab File ID:	580-78883.prn
Dilution:	1.0			Initial Weight/Volume:	1.0055 g
Date Analyzed:	01/11/2011 0117			Final Weight/Volume:	50 mL
Date Prepared:	01/10/2011 1318				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		1300		8.9	30
Barium		4.6		0.50	0.50
Beryllium		ND		0.050	0.25
Cobalt		ND		0.25	0.50
Copper		ND		0.72	0.99
Iron		190		0.61	9.9
Magnesium		1400		3.2	55
Manganese		38		0.090	0.99
Nickel		0.13		0.13	0.99
Potassium		67		16	160
Silver		0.59		0.56	0.99
Sodium		260		15	99
Vanadium		ND		0.30	0.50
Zinc		ND		0.53	2.0

Method:	6010B	Analysis Batch:	580-79049	Instrument ID:	SEA027
Preparation:	3050B	Prep Batch:	580-78883	Lab File ID:	78883ca&cr.prn
Dilution:	100			Initial Weight/Volume:	1.0055 g
Date Analyzed:	01/12/2011 0420			Final Weight/Volume:	50 mL
Date Prepared:	01/10/2011 1318				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Calcium		180000		310	5500
Chromium		10000		39	130

6020 Metals (ICP/MS)

Method:	6020	Analysis Batch:	580-78956	Instrument ID:	SEA026
Preparation:	3050B	Prep Batch:	580-78883	Lab File ID:	78883-ICPMS.rep
Dilution:	10			Initial Weight/Volume:	1.0055 g
Date Analyzed:	01/11/2011 0929			Final Weight/Volume:	50 mL
Date Prepared:	01/10/2011 1318				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Arsenic		ND		0.37	0.50
Antimony		0.52		0.0080	0.20
Cadmium		ND		0.0080	0.20
Selenium		ND		0.60	0.70
Thallium		0.081		0.0060	0.40

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0003

Lab Sample ID: 580-23697-3

Client Matrix: Waste

Date Sampled: 12/17/2010 1400

Date Received: 12/22/2010 1200

6020 Metals (ICP/MS)

Method:	6020	Analysis Batch:	580-78956	Instrument ID:	SEA026
Preparation:	3050B	Prep Batch:	580-78883	Lab File ID:	78883-ICPMS.rep
Dilution:	1000			Initial Weight/Volume:	1.0055 g
Date Analyzed:	01/11/2011 1032			Final Weight/Volume:	50 mL
Date Prepared:	01/10/2011 1318				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Lead		37000 JK		0.80	20

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch:	580-78304	Instrument ID:	TAC103
Preparation:	7471A	Prep Batch:	580-78253	Lab File ID:	78243-HG.CSV
Dilution:	1.0			Initial Weight/Volume:	0.6688 g
Date Analyzed:	12/29/2010 1131			Final Weight/Volume:	50 mL
Date Prepared:	12/28/2010 1720				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.013 JK		0.0047	0.015 U

mw
12/21/11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0004

Lab Sample ID: 580-23697-4

Client Matrix: Waste

Date Sampled: 12/17/2010 1425

Date Received: 12/22/2010 1200

6010B Metals (ICP)

Method: 6010B Analysis Batch: 580-78954 Instrument ID: SEA027
 Preparation: 3050B Prep Batch: 580-78883 Lab File ID: 580-78883.prm
 Dilution: 1.0 Initial Weight/Volume: 1.0200 g
 Date Analyzed: 01/11/2011 0206 Final Weight/Volume: 50 mL
 Date Prepared: 01/10/2011 1318

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		1300		8.7	29
Barium		1.4		0.49	0.49
Beryllium		ND <i>1.1</i>		0.049	0.25 <i>UJL</i>
Cobalt		1.1 <i>1.1</i>		0.25	0.49 <i>U</i>
Copper		ND <i>JK</i>		0.71	0.98
Iron		91		0.60	9.8
Magnesium		1300		3.1	54
Manganese		20		0.088	0.98
Nickel		2.5		0.13	0.98
Potassium		36		16	160
Silver		ND <i>JK</i>		0.55	0.98 <i>U</i>
Sodium		52		14	98
Vanadium		0.39		0.29	0.49
Zinc		1.5 <i>JK</i>		0.52	2.0 <i>UJL</i>

Method: 6010B Analysis Batch: 580-79049 Instrument ID: SEA027
 Preparation: 3050B Prep Batch: 580-78883 Lab File ID: 78883ca&cr.prm
 Dilution: 1.0 Initial Weight/Volume: 1.0200 g
 Date Analyzed: 01/12/2011 0510 Final Weight/Volume: 50 mL
 Date Prepared: 01/10/2011 1318

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Chromium		ND <i>1.3</i>		0.38	1.3 <i>U</i>

Method: 6010B Analysis Batch: 580-79049 Instrument ID: SEA027
 Preparation: 3050B Prep Batch: 580-78883 Lab File ID: 78883ca&cr.prm
 Dilution: 100 Initial Weight/Volume: 1.0200 g
 Date Analyzed: 01/12/2011 0517 Final Weight/Volume: 50 mL
 Date Prepared: 01/10/2011 1318

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Calcium		65000		300	5400

6020 Metals (ICP/MS)

Method: 6020 Analysis Batch: 580-78956 Instrument ID: SEA026
 Preparation: 3050B Prep Batch: 580-78883 Lab File ID: 78883-ICPMS.rep
 Dilution: 10 Initial Weight/Volume: 1.0200 g
 Date Analyzed: 01/11/2011 1011 Final Weight/Volume: 50 mL
 Date Prepared: 01/10/2011 1318

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Arsenic		ND <i>0.49</i>		0.36	0.49 <i>U</i>

mw 12411

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0004

Lab Sample ID: 580-23697-4

Date Sampled: 12/17/2010 1425

Client Matrix: Waste

Date Received: 12/22/2010 1200

6020 Metals (ICP/MS)

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Antimony		0.35 <i>JK</i>	<i>BT</i>	0.0078	0.20
Cadmium		ND <i>mc</i>		0.0078	0.20 <i>U</i>
Lead		0.52 <i>JK</i>		0.0078	0.20
Selenium		ND <i>mc</i>		0.59	0.69 <i>U</i>
Thallium		0.017 <i>mc</i>	<i>JK</i>	0.0059	0.39 <i>U</i>

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch: 580-78304	Instrument ID:	TAC103
Preparation:	7471A	Prep Batch: 580-78253	Lab File ID:	78243-HG.CSV
Dilution:	1.0		Initial Weight/Volume:	0.6043 g
Date Analyzed:	12/29/2010 1142		Final Weight/Volume:	50 mL
Date Prepared:	12/28/2010 1720			

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.044 <i>W</i>	<i>JK</i>	0.0052	0.017 <i>U</i>

mc
1-24-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0006

Lab Sample ID: 580-23697-6

Client Matrix: Waste

Date Sampled: 12/17/2010 1500

Date Received: 12/22/2010 1200

6010B Metals (ICP)

Method: 6010B Analysis Batch: 580-78954 Instrument ID: SEA027
 Preparation: 3050B Prep Batch: 580-78883 Lab File ID: 580-78883.prm
 Dilution: 1.0 Initial Weight/Volume: 1.0163 g
 Date Analyzed: 01/11/2011 0214 Final Weight/Volume: 50 mL
 Date Prepared: 01/10/2011 1318

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		190		8.8	30
Barium		6.0		0.49	0.49
Beryllium		ND		0.049	0.25
Cobalt		ND		0.25	0.49
Copper		ND		0.71	0.98
Iron		6.3		0.60	9.8
Magnesium		620		3.1	54
Manganese		8.1		0.089	0.98
Nickel		ND		0.13	0.98
Potassium		ND		16	160
Silver		ND		0.55	0.98
Sodium		ND		14	98
Vanadium		ND		0.30	0.49
Zinc		ND		0.52	2.0

Method: 6010B Analysis Batch: 580-79049 Instrument ID: SEA027
 Preparation: 3050B Prep Batch: 580-78883 Lab File ID: 78883ca&cr.prm
 Dilution: 100 Initial Weight/Volume: 1.0163 g
 Date Analyzed: 01/12/2011 0525 Final Weight/Volume: 50 mL
 Date Prepared: 01/10/2011 1318

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Calcium		26000		310	5400
Chromium		1600		38	130

6020 Metals (ICP/MS)

Method: 6020 Analysis Batch: 580-78956 Instrument ID: SEA026
 Preparation: 3050B Prep Batch: 580-78883 Lab File ID: 78883-ICPMS.rep
 Dilution: 10 Initial Weight/Volume: 1.0163 g
 Date Analyzed: 01/11/2011 1016 Final Weight/Volume: 50 mL
 Date Prepared: 01/10/2011 1318

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Arsenic		ND		0.36	0.49
Antimony		0.15		0.0079	0.20
Cadmium		0.069		0.0079	0.20
Selenium		ND		0.59	0.69
Thallium		0.052		0.0059	0.39

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0006

Lab Sample ID: 580-23697-6

Client Matrix: Waste

Date Sampled: 12/17/2010 1500

Date Received: 12/22/2010 1200

6020 Metals (ICP/MS)

Method:	6020	Analysis Batch:	580-78956	Instrument ID:	SEA026
Preparation:	3050B	Prep Batch:	580-78883	Lab File ID:	78883-ICPMS.rep
Dilution:	1000			Initial Weight/Volume:	1.0163 g
Date Analyzed:	01/11/2011 1102			Final Weight/Volume:	50 mL
Date Prepared:	01/10/2011 1318				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Lead		15000 JK		0.79	20

7471A Mercury (CVAA)

Method:	7471A	Analysis Batch:	580-78304	Instrument ID:	TAC103
Preparation:	7471A	Prep Batch:	580-78253	Lab File ID:	78243-HG.CSV
Dilution:	1.0			Initial Weight/Volume:	0.6279 g
Date Analyzed:	12/29/2010 1145			Final Weight/Volume:	50 mL
Date Prepared:	12/28/2010 1720				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.015 JB		0.0050	0.016 U

mm
1-24-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0007

Lab Sample ID: 580-23697-7

Date Sampled: 12/17/2010 1525

Client Matrix: Waste

Date Received: 12/22/2010 1200

6010B Metals (ICP)

Method: 6010B Analysis Batch: 580-78954 Instrument ID: SEA027
 Preparation: 3050B Prep Batch: 580-78883 Lab File ID: 580-78883.prn
 Dilution: 1.0 Initial Weight/Volume: 0.9768 g
 Date Analyzed: 01/11/2011 0222 Final Weight/Volume: 50 mL
 Date Prepared: 01/10/2011 1318

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		16	JQ	9.1	31
Barium		ND		0.51	0.51
Beryllium		ND		0.051	0.26
Calcium		420		3.2	56
Cobalt		ND		0.26	0.51
Copper		13		0.74	1.0
Iron		35		0.62	10
Magnesium		78		3.3	56
Manganese		0.01		0.092	1.0
Nickel		0.24		0.13	1.0
Potassium		16		16	170
Silver		ND		0.57	1.0
Sodium		24		15	100
Vanadium		ND		0.31	0.51
Zinc		260		0.54	2.0

Method: 6010B Analysis Batch: 580-79049 Instrument ID: SEA027
 Preparation: 3050B Prep Batch: 580-78883 Lab File ID: 78883ca&cr.prn
 Dilution: 1.0 Initial Weight/Volume: 0.9768 g
 Date Analyzed: 01/12/2011 0532 Final Weight/Volume: 50 mL
 Date Prepared: 01/10/2011 1318

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Chromium		ND		0.40	1.3

6020 Metals (ICP/MS)

Method: 6020 Analysis Batch: 580-78956 Instrument ID: SEA026
 Preparation: 3050B Prep Batch: 580-78883 Lab File ID: 78883-ICPMS.rep
 Dilution: 10 Initial Weight/Volume: 0.9768 g
 Date Analyzed: 01/11/2011 1020 Final Weight/Volume: 50 mL
 Date Prepared: 01/10/2011 1318

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Arsenic		ND		0.38	0.51
Antimony		0.52		0.0082	0.20
Cadmium		0.041		0.0082	0.20
Lead		5.0		0.0082	0.20
Selenium		ND		0.61	0.72
Thallium		0.0097		0.0061	0.41

7471A Mercury (CVAA)

mw
124-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0007

Lab Sample ID: 580-23697-7

Client Matrix: Waste

Date Sampled: 12/17/2010 1525

Date Received: 12/22/2010 1200

7471A Mercury (CVAA)

Method: 7471A

Analysis Batch: 580-78304

Instrument ID: TAC103

Preparation: 7471A

Prep Batch: 580-78253

Lab File ID: 78243-HG.CSV

Dilution: 1.0

Initial Weight/Volume: 0.7324 g

Date Analyzed: 12/29/2010 1147

Final Weight/Volume: 50 mL

Date Prepared: 12/28/2010 1720

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0063 <i>mu</i>	<i>mu</i> <i>Q</i>	0.0043	0.014 <i>U</i>

mu
F-24-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0008

Lab Sample ID: 580-23697-8

Client Matrix: Waste

Date Sampled: 12/17/2010 1535

Date Received: 12/22/2010 1200

6010B Metals (ICP)

Method: 6010B Analysis Batch: 580-78954 Instrument ID: SEA027
 Preparation: 3050B Prep Batch: 580-78883 Lab File ID: 580-78883.pm
 Dilution: 1.0 Initial Weight/Volume: 1.0108 g
 Date Analyzed: 01/11/2011 0231 Final Weight/Volume: 50 mL
 Date Prepared: 01/10/2011 1318

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		17	JQ	8.8	30
Barium		ND		0.49	0.49 U
Beryllium		ND mv		0.049	0.25 UJL
Calcium		400	B mv	3.1	54
Cobalt		ND mv		0.25	0.49 U
Copper		13		0.71	0.99
Iron		34 JK		0.60	9.9
Magnesium		78	B mv	3.2	54
Manganese		0.30 mv JK	JQ	0.089	0.99 UJL
Nickel		0.22 mv	JQ	0.13	0.99 UJL
Potassium		17	JQ	16	160
Silver		ND mv		0.55	0.99 U
Sodium		26	JQ	15	99
Vanadium		ND mv		0.30	0.49 UJL
Zinc		250 JL	B mv	0.52	2.0

Method: 6010B Analysis Batch: 580-79049 Instrument ID: SEA027
 Preparation: 3050B Prep Batch: 580-78883 Lab File ID: 78883ca&cr.prn
 Dilution: 1.0 Initial Weight/Volume: 1.0108 g
 Date Analyzed: 01/12/2011 0539 Final Weight/Volume: 50 mL
 Date Prepared: 01/10/2011 1318

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Chromium		ND mv		0.39	1.3 U

6020 Metals (ICP/MS)

Method: 6020 Analysis Batch: 580-78956 Instrument ID: SEA026
 Preparation: 3050B Prep Batch: 580-78883 Lab File ID: 78883-ICPMS.rep
 Dilution: 10 Initial Weight/Volume: 1.0108 g
 Date Analyzed: 01/11/2011 1024 Final Weight/Volume: 50 mL
 Date Prepared: 01/10/2011 1318

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Arsenic		ND mv		0.36	0.49 U
Antimony		0.50 JK	B mv	0.0079	0.20
Cadmium		0.035	JQ	0.0079	0.20
Lead		4.5 JK		0.0079	0.20
Selenium		ND mv		0.59	0.69 U
Thallium		0.0059 mv	JQ	0.0059	0.40 U

7471A Mercury (CVAA)

mv
F24-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

Client Sample ID: 1012-0008

Lab Sample ID: 580-23697-8

Client Matrix: Waste

Date Sampled: 12/17/2010 1535

Date Received: 12/22/2010 1200

7471A Mercury (CVAA)

Method: 7471A

Analysis Batch: 580-78304

Instrument ID: TAC103

Preparation: 7471A

Prep Batch: 580-78253

Lab File ID: 78243-HG.CSV

Dilution: 1.0

Initial Weight/Volume: 0.6298 g

Date Analyzed: 12/29/2010 1150

Final Weight/Volume: 50 mL

Date Prepared: 12/28/2010 1720

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0094 <i>pw</i>	JE <i>pw</i>	0.0050	0.016 <i>U</i>

MW
1-24-11



ecology and environment, inc.

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MEMORANDUM

DATE: January 24, 2011

TO: Len Marcus, Project Manager, E & E, Anchorage, Alaska

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington *MW*

SUBJ: **Organic Data Quality Assurance Review, Post Road Drum Site,
Anchorage, Alaska**

REF: TDD: 10-12-0003

PAN: 002233.0623.01SF

The data quality assurance review of 8 waste samples collected from the Post Road Drum site located in Anchorage, Alaska, has been completed. Analyses for flashpoint (EPA Method 1020A) and oxidizer screen (Haz Cat Method) were performed by Test America Seattle, Tacoma, Washington.

The samples were numbered:

10120001	10120002	10120003	10120004
10120005	10120006	10120007	10120008

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained at < 6°C. The samples were collected on December 17, 2010, and were analyzed on January 11, 2011, therefore meeting QC holding time limits for product samples.

2. Initial Calibration: Acceptable.

All initial calibration results were within QC limits.

3. Error Determination: Not Provided.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

4. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

5. Duplicates: Acceptable.

Relative Percent Differences (RPDs) of all spiked analytes were within the required control limits.

6. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

7. Laboratory Contact

No laboratory contact was required.

8. Overall Assessment

The overall usefulness of the data is based on the criteria outlined in the Site-Specific Sampling Plan and/or Sampling and Quality Assurance Plan, the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities; Sampling QA/QC Plan; and Data Validation Procedures" (EPA/540/G-90/004), the analytical methods, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

- J - The associated numerical value is an estimated quantity because the reported concentrations were less than the sample quantitation limits or because quality control criteria limits were not met.
- R - The sample results are rejected (analyte may or may not be present) due to gross deficiencies in quality control criteria. Any reported value is unusable. Resampling and/or reanalysis is necessary for verification.
- U - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
- UJ - The material was analyzed for, but not detected. The reported detection limit is estimated because quality control criteria were not met.

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

General Chemistry

Client Sample ID: 1012-0001

Lab Sample ID: 580-23697-1

Client Matrix: Waste

Date Sampled: 12/17/2010 1335

Date Received: 12/22/2010 1200

Analyte	Result	Qual	Units	Dil	Method
Flashpoint	<70		Degrees F	1.0	1020A
	Analysis Batch: 580-78979	Date Analyzed: 01/11/2011 1402			DryWt Corrected: N
Oxidizer Screen	negative		NONE	1.0	HazCat
	Analysis Batch: 580-78989	Date Analyzed: 01/11/2011 1436			DryWt Corrected: N

mw
124-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

General Chemistry

Client Sample ID: 1012-0002

Lab Sample ID: 580-23697-2

Client Matrix: Waste

Date Sampled: 12/17/2010 1345

Date Received: 12/22/2010 1200

Analyte	Result	Qual	Units	Dil	Method
Flashpoint	>212		Degrees F	1.0	1020A
	Analysis Batch: 580-78979		Date Analyzed: 01/11/2011 1402		DryWt Corrected: N
Oxidizer Screen	negative		NONE	1.0	HazCat
	Analysis Batch: 580-78989		Date Analyzed: 01/11/2011 1436		DryWt Corrected: N

mw
124-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

General Chemistry

Client Sample ID: 1012-0003

Lab Sample ID: 580-23697-3

Client Matrix: Waste

Date Sampled: 12/17/2010 1400

Date Received: 12/22/2010 1200

Analyte	Result	Qual	Units	Dil	Method
Flashpoint	<70		Degrees F	1.0	1020A
	Analysis Batch: 580-78979	Date Analyzed: 01/11/2011 1402			DryWt Corrected: N
Oxidizer Screen	positive		NONE	1.0	HazCat
	Analysis Batch: 580-78989	Date Analyzed: 01/11/2011 1436			DryWt Corrected: N

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Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

General Chemistry

Client Sample ID: 1012-0004

Lab Sample ID: 580-23697-4

Client Matrix: Waste

Date Sampled: 12/17/2010 1425

Date Received: 12/22/2010 1200

Analyte	Result	Qual	Units	Dil	Method
Flashpoint	<70		Degrees F	1.0	1020A
	Analysis Batch: 580-78979	Date Analyzed: 01/11/2011 1402			DryWt Corrected: N
Oxidizer Screen	negative		NONE	1.0	HazCat
	Analysis Batch: 580-78989	Date Analyzed: 01/11/2011 1436			DryWt Corrected: N

mw
1-24-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

General Chemistry

Client Sample ID: 1012-0005

Lab Sample ID: 580-23697-5

Client Matrix: Waste

Date Sampled: 12/17/2010 1440

Date Received: 12/22/2010 1200

Analyte	Result	Qual	Units	Dil	Method
Flashpoint	>212		Degrees F	1.0	1020A
	Analysis Batch: 580-78979	Date Analyzed: 01/11/2011 1402			DryWt Corrected: N
Oxidizer Screen	negative	NONE		1.0	HazCat
	Analysis Batch: 580-78989	Date Analyzed: 01/11/2011 1436			DryWt Corrected: N

mm
124-11

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

General Chemistry

Client Sample ID: 1012-0006

Lab Sample ID: 580-23697-6

Client Matrix: Waste

Date Sampled: 12/17/2010 1500

Date Received: 12/22/2010 1200

Analyte	Result	Qual	Units	Dil	Method
Flashpoint	>212		Degrees F	1.0	1020A
	Analysis Batch: 580-78979	Date Analyzed: 01/11/2011 1402			DryWt Corrected: N
Oxidizer Screen	positive		NONE	1.0	HazCat
	Analysis Batch: 580-78989	Date Analyzed: 01/11/2011 1436			DryWt Corrected: N

MW
12411

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

General Chemistry

Client Sample ID: 1012-0007

Lab Sample ID: 580-23697-7

Client Matrix: Waste

Date Sampled: 12/17/2010 1525

Date Received: 12/22/2010 1200

Analyte	Result	Qual	Units	Dil	Method
Flashpoint	>212		Degrees F	1.0	1020A
Analysis Batch: 580-78979			Date Analyzed: 01/11/2011 1402		DryWt Corrected: N

MW
12411

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-23697-1

General Chemistry

Client Sample ID: 1012-0008

Lab Sample ID: 580-23697-8

Client Matrix: Waste

Date Sampled: 12/17/2010 1535

Date Received: 12/22/2010 1200

Analyte	Result	Qual	Units	Dil	Method
Flashpoint	>212		Degrees F	1.0	1020A
Analysis Batch: 580-78979			Date Analyzed: 01/11/2011 1402		DryWt Corrected: N

me
12411