PAYNE
ENVIRONMENTAL, LLC

Consulting Engineers and Scientists

PHASE II
ENVIRONMENTAL SITE ASSESSMENT
RIVERSIDE APARTMENTS NORTH
106-165 OLSON DRIVE
ANSONIA, CONNECTICUT

August 2013

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Phase II Environmental Site Assessment
Riverside Apartments
Olson Drive
Ansonia, Connecticut

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I. INTRODUCTION

1.1 Purpose & Scope

Payne Environmental LLC (PAYNE) was retained by the Ansonia Housing Authority (AHA) to complete a Phase II Environmental Site Assessment (ESA) for the northern portion of the Riverside Apartments located on 106-165 Olson Drive, Ansonia, Connecticut (the "Site"). The Site location is depicted in Figure 1. A sample location plan is included as Figure 2.

The regulatory requirements associated with the two primary goals of Phase II site investigations are presented in the following paragraphs.

(1) To determine whether the identified AOCs are "Release Areas" as defined in the RSRs.

A Release Area is defined in Section 22a-133k-1 of the RSRs as "...the land at and beneath which polluted soil is located as a result of a release." Polluted soil as defined in the RSRs as, "...soil affected by a release of a substance at a concentration above the analytical detection limit for such substance." If there is no polluted soil present in an AOC, or if polluted soil is present but can be demonstrated not to be the result of a release associated with the AOC, then the AOC is not a release area under the RSRs. This metric is the basis for conclusions regarding release area status in this report.

(2) To provide information with which to validate or modify the conceptual site model for the property, which in turn provides for an understanding of the potential risk of impact to human health or the environment from site conditions.

This objective is addressed in part by comparing the results of soil sample analysis with applicable Remediation Standard regulation (RSR) criteria. The RSRs provide different remediation target criteria for constituents based primarily on the variables of (1) groundwater classification beneath and in the area of the property, and (2) whether the property is dedicated to residential or industrial/commercial use.

The conceptual site model (CSM) will be refined to reflect the fate and transport model associated with previously identified import fill. or strategies for achieving compliance with the RSRs.

The project objectives were achieved by conducting the following site activities:

- Pre-Drilling Tasks & Utility Mark-out, including development of a site-specific Health & Safety Plan (HASP) ;
- Development of a Soil Sampling and Analysis Plan (SSAP);
- Installation of six (6) surficial soil borings;

- Installation of five (5) soil borings to depths up to 20 feet below grade utilizing direct-push technology;
- Laboratory analysis of soil samples for target compounds;; and
- Preparation of a Phase II ESA Report.

1.2 Site Description

The site includes the parcel and improvements known as the Riverside Apartments North, located at 106-165 Olson Drive in the City of Ansonia, New Haven County, Connecticut at 41º20'41.69" N latitude and 73º04'54.82" W longitude. This portion of the site is identified in the Ansonia Assessor's Office as parcel 0310068.8.

The site is located between High Street and Olson Drive. Olson Drive and the Naugatuck River abuts the site easterly. According to City Assessor records, the site is located within a multi-family district (GA zone) and the City Center Zoning District. The site is located at an elevation of approximately 36 feet above sea level (National Geodetic Vertical Datum of 1929). The topography of the site is generally level, with minor downward sloping on moving from northwest to the southeast.

The approximately 3-acre parcel is improved with four (4) multi-family apartment buildings and a new boiler house. The residential buildings were constructed circa 1960 and are currently in a state of disrepair. The boiler house was constructed circa 2010-2011 as part of a mechanical decentralization project.

Based on the results of previously performed Phase I ESAs, it was concluded that the site did not meet the definition of an "establishment" as defined by the Connecticut Transfer Act. It was recommended that legal counsel knowledgeable in environmental law review the Transfer Act and it's applicability to the Site.

1.3 Project Background

The site has been previously studied, including a Phase I ESA conducted by PAYNE in April 2013.

Based on our completed Phase I ESA, PAYNE identified three (3) areas of concern (AOCs) at the subject site, as described below:

AOC#	Description	Release Detected
1	Polluted Fill Material	Unknown
2	Hydraulic Trash Compactors	Unknown
3	Existing Pole-Mounted Transformers	Unknown

Based on the findings of the Phase I ESA, PAYNE recommended that a Phase II ESA be performed at the site to evaluate these AOCs to determine if there had been a release at the site.

1.4 Regulatory Criteria

Analytical results for the soil samples obtained during this investigation were compared to criteria established in the RSRs. These cleanup criteria are used herein as guidance and a standard of care to assess areas of potential on-site contamination and to provide information with which to validate or modify the conceptual site model for the property, which in turn provides for an understanding of the potential risk of impact to human health or the environment from site conditions.

This objective is addressed in part by comparing the results of soil sample analysis with applicable RSR criteria. The RSRs provide different remediation target criteria for constituents based primarily on the variables of (1) groundwater classification beneath and in the area of the property, and (2) whether the property is dedicated to residential or industrial/commercial use.

Groundwater in the general vicinity of the subject site is classified by CTDEEP as GA groundwater. The GA classification is defined by CTDEEP as groundwater within the area of private water supply wells or an area with the potential to provide water to public or private supply wells. The CTDEEP presumes that groundwater in a GA area is, at a minimum, suitable for drinking or other domestic uses without treatment.

Section 22a-133k-2 of the RSRs establishes two (2) criteria for soil:

- Direct Exposure Criteria (DEC) that seek to protect humans from potential risks associated with direct exposure to contaminated soils; and
- Pollutant Mobility Criteria (PMC) that are designed to protect groundwater from contaminants that may leach from soil to the groundwater.

Section 22a-133k-3 of the RSRs establishes three (3) criteria for groundwater in GA-classified areas:

- Surface Water Protection Criteria (SWPC) that seek to ensure that polluted groundwater does not adversely affect surface water quality or prevent the attainment of surface water quality criteria;
- Groundwater Volatilization Criteria (GWVC) that are designed to ensure that human health is not adversely affected from inhalation of volatile pollutants that have entered or may enter a building or structure as a result of volatile contaminants in the underlying groundwater; and

- Groundwater Protection Criteria (GWPC) that seek to protect and preserve groundwater as a natural resource, to protect existing uses of groundwater, and to prevent further degradation of groundwater quality.

Soil sample results are compared to the current RSRs. The RSRs provide a set of criteria that soil and groundwater characteristics must meet for a given land use or for a groundwater or surface water classification. If any of the criteria are not met, soil and/or groundwater remediation may be required at the Site to achieve compliance with the appropriate criteria levels. The applicable criteria utilized for the Site include:

- Residential Direct Exposure Criteria (Res. DEC) for soil;
- Pollutant Mobility Criteria for soil located in a GA groundwater area (GA-PMC);

This investigation assumes the less stringent I/C DEC and I/C GWVC are not applicable to the Site.

1.5 Constituents of Concern

Constituents of Concern (COCs) for the Site are related to historic imported fill, transformer dielectric fluid and hydraulic oil associated with trash compactors, and include: semi-volatile organic compounds (SVOCs), metals (lead and arsenic), polychlorinated biphenyls (PCBs) and/or extractable total petroleum hydrocarbons (ETPH). A list of COCs is provided in Table 1.

II. SITE GEOLOGY AND HYDROGEOLOGY

2.1 Topography

The site is located at an elevation of approximately 35 feet above sea level (National Geodetic Vertical Datum of 1929). The topography of the site generally slopes downward from the west to the east towards Olson Drive and the Naugatuck River.

2.2 Bedrock Geology

The site is located within the Iapetos, Connecticut Valley Synclinorium. The subsurface geology at the subject site is reported to be gray to spotted, medium to coarse grained, foliated gneiss. Bedrock was not encountered during the investigation.

2.3 Surficial Geology

Soils in this area generally are classified as urban land. This map unit consists of areas where urban structures cover more than 85 percent of the surface and the map unit is predominantly artificial fill and Udorthents, which are well drained to excessively drained soils mainly near urban areas. It is likely that artificial fill was introduced to the site as part of the site development in the late 1950s and early 1960s, as a result of the great flood of 1955.

Based on the findings of the Phase II study, the site is overlain with two (2) distinct fill layers. The upper layer, generally observed to range in 2-6 feet in thickness, consists of a light-medium brown sandy fill layer with varying percentages of silt and gravel. This upper fill layer is underlain with a darker sandy fill material, consisting of ash, coal, brick, glass, asphalt, plastic and concrete. The thickness of this fill layer ranges from 2-10 feet.

Natural brown fine-to-coarse sand with cobbles and gravel are encountered below the fill layers, at depths typically ranging from 7-20 feet below ground surface.

2.4 Groundwater Classification and Flow Direction

Groundwater in the general vicinity of the subject site is classified by CTDEEP as GA groundwater. The GA classification is defined by CTDEEP as groundwater within the area of private water supply wells or an area with the potential to provide water to public or private supply wells. The CTDEEP presumes that groundwater in a GA area is, at a minimum, suitable for drinking or other domestic uses without treatment.

The groundwater flow direction based on surface topography and nearby monitoring well data, is inferred to be generally east/southeast towards the Naugatuck

River, which is located within 100 feet of the site to the east. Depth to groundwater at the site was observed to be approximately 20 feet below ground surface.

2.5 Surface Water Classification & Flow Direction

The site is located in the Naugatuck River Sub Regional Basin of the Naugatuck Complex, which is tributary to the Housatonic. The nearest natural surface The water body is the Naugatuck River, essentially abutting the property easterly (Figure 1).

According to the CTDEEP, the surface water quality of the Naugatuck River classified as B. Class B surface waters are not potential drinking water supplies; however, designated uses include fish and wildlife habitat, recreational uses, agricultural and industrial supply, and other legitimate uses including navigation.

III. PHASE II INVESTIGATION ACTIVITIES

3.1 Overview

Subsurface investigations were conducted to determine if a release had occurred within each identified AOC and included the installation of five (5) deep soil borings and six (6) shallow soil samples. Sample locations are depicted in Figures 2.

3.2 Pre-Exploration Activities

Pre-exploration activities included one site inspection and a request to Call-Before-You-Dig (#2013-3002036) for underground utility clearance. Clearance was given for water, sewer, electric, natural gas, electric, cable and telephone utilities. Boring locations were marked prior to the start of drilling activities on the day of the sampling and were determined in the field by measuring from fixed locations.

3.3 Drilling & Surficial Soil Sampling

In order to evaluate the artificial fill layer as part of this Phase II investigation, the following explorations were conducted at the Site:

- Five (5) soil borings (B-1 through B-5)
- Six (6) shallow soil borings (SS-01 through SS-06)

Drilling and soil sample collection were performed on August 17, 2013. Boring locations were marked prior to the start of drilling activities. Soil boring and surficial soil sample locations are depicted in Figure 2. Sample locations were determined in the field by measuring from fixed locations.

There was no deviation from standard soil boring. Soil borings were completed using direct-push techniques for soil collection and monitoring well installation. Soil was collected in 4-foot long “macrocore” sample tubes equipped with acrylic liners. This allowed the PAYNE geologists to describe relatively undisturbed soil core, screen the soil, and collect soil samples for laboratory analysis from each direct-push boring.

Shallow soil samples were collected utilizing standard hand-auger techniques. All soil boring and soil sampling activities were performed using clean and decontaminated equipment at each location.

Soil boring logs are provided in Attachment C of this report. Sample parameter lists for soil samples are summarized in Table 1.

3.4 Soil Sampling & Analysis

Soil samples were collected at continuous intervals for all borings installed. The physical description of soils was recorded at each sample location in addition to relative density of soils using standard penetration methods (ASTM D 1586-76). Soil samples from each four-foot interval at each location were collected in appropriate glassware and immediately placed in a cooler at 4°C. Soil gas vapor screening was conducted to assist in soil sample selection for laboratory analysis.

Soil boring logs are provided in Attachment C. A total of ten (10) soil samples were submitted for one or more of the following laboratory analyses:

- total extractable petroleum hydrocarbons (CTDEEP Method)
- polyacyclic aromatic hydrocarbons (Method 8270D)
- lead and arsenic by mass analysis, (Method 6010C)
- polychlorinated biphenyls (PCBs – Method 8082A)

The soil and sealant samples were delivered to Spectrum Analytical, Inc. of Agawam, MA for analysis. Spectrum is a Connecticut State-certified laboratory (CT# PH-0777).

3.5 Data Quality Objectives

PAYNE reviewed the QA/QC data associated with the laboratory analyses conducted on all soil samples. Data validation consisted of evaluating the following items:

- Sample holding times
- Field, trip and/or laboratory blanks
- Field duplicate results
- Laboratory duplicate results
- Matrix spike/matrix spike duplicate results
- Laboratory control spike recoveries
- Surrogate spike recoveries

Although there were instances of non-compliance with the Reasonable Confidence Protocol (RCP), overall these non-compliance issues were minor and few. As a result, the analytical data were deemed adequate and usable for the intended purpose.

IV. PHASE II INVESTIGATION ANALYTICAL RESULTS

4.1 Overview

The Phase II Investigation included the laboratory analysis of 10 soil samples and appropriate QA/QC samples. A summary of the Phase II Investigation field activities including: area descriptions, sample dates, methods of investigation, number of sampling locations, depths, media, number of samples, sample identifications, and parameters has been described in the previous sections.

Soil borings and shallow soil samples were installed to define the three-dimensional extent and distribution of substances associated with the fill material located on site. Samples were analyzed for parameters as presented in Table 1.

4.2 Soil Analytical Results

A summary of analytical results for constituents detected in soil is presented in Table 2 Soil analytical results were compared to the Res. DEC and GA-PMC of the RSRs, as described in Section 1.4 above. The laboratory analytical reports for soil samples analyzed during this investigation are included as Attachment D to this report.

- Borings B-1 through B-5 : *AOC-1 Potential Fill*
- Samples SS-05, SS-06: *AOC-2 Hydraulic Trash Compactors*
- Samples SS-01 through SS-04: *AOC-3 Pole-Mounted Transformers*

The target constituents (ETPH, arsenic, lead, PAHs and PCBs) present potential health hazards to construction workers and site occupants who may disturb these materials during normal activities. In addition, soils containing these materials may require special handling or disposal.

Samples were selected for laboratory analysis based on greatest observable contamination (visual, headspace analysis for VOCs). At the same time, an attempt was made to include representative samples from each subsurface interval and from all subsurface materials encountered.

4.2.1 AOC-1: Potential Fill

Soils in this area generally are classified as urban land. This map unit consists of areas

where urban structures cover more than 85 percent of the surface and the map unit is predominantly artificial fill and Udorthents, which are well drained to excessively drained soils mainly near urban areas. It is likely that artificial fill was introduced to the site as part of the site development in the late 1950s and early 1960s, as a result of the great flood of 1955.

Based on the findings of the Phase II study, the site is overlain with two (2) distinct fill layers. The upper layer, generally observed to range in 2-6 feet in thickness, consists of a light-medium brown sandy fill layer with varying percentages of silt and gravel. This upper fill layer is underlain with a darker sandy fill material, consisting of ash, coal, brick, glass, asphalt, plastic and concrete. The thickness of this fill layer ranges from 2-10 feet.

Placement of borings was biased towards accessible areas of the site, with an effort to obtain as much special data as possible. Soil samples from borings B-1, B-2, B-3 and B-5 were submitted for laboratory analyses for extractable total petroleum hydrocarbons (CT-ETPH), total arsenic, total lead, polychlorinated biphenyls (PCBs) and polyacyclic aromatic hydrocarbons (PAHs).

Results of laboratory analyses of select soil samples revealed significant detected concentrations several PAH constituents, with several detections observed to be above the applicable RSR criteria for select PAH constituents.

Extractable total petroleum hydrocarbons (ETPH) was observed in 4 of 4 soil samples, at a concentration range of 42.4 – 1,020 mg/kg, with one sample (B-3 4-6') exceeding the applicable RSR criterion for ETPH.

Polychlorinated biphenyls (PCBs) was observed in 2 of 4 soil samples with concentrations ranging from 23.9 – 80.9 ug/kg. Both samples were observed to be below the applicable RSR criterion for PCBs.

Arsenic was observed in all four soil samples, with concentrations ranging from 3.92 mg/kg in B-1 to 7.36 mg/kg in B-2, all well below applicable RSR criterion for arsenic.

Lead was observed in all four soil samples, with concentrations ranging from 31 mg/kg in B-1 to 920 mg/kg in B-2, with two samples exceeding the applicable RSR criterion for lead.

Based on the analytical data obtained in this evaluation, there is evidence of a release associated with fill material in AOC-1, with impacted fill generally associated with the deeper underlying dark fill layer Currently, this fill would meet the definition of "polluted soil", which means soil affected by a release of a substance at a concentration above the analytical detection limit for such substance. Further investigation is warranted.

4.2.2 AOC-2: Hydraulic Trash Compactors

Two (2) surficial soil samples (SS-05, SS-06) were collected, one from each trash compactor adjacent to the hydraulic control unit/fluid storage equipment. Sample locations are depicted on Figure 2.

Results of laboratory analyses of each soil sample revealed detected concentrations several PAH constituents, with several detections observed to be above the applicable RSR criteria for select PAH constituents.

Extractable total petroleum hydrocarbons (ETPH) was observed in 2 of 2 soil samples, at a concentration range of 500 – 655 mg/kg, with each sample exceeding the applicable RSR criterion for ETPH.

Arsenic was observed in each soil sample, with concentrations ranging from 4.61 mg/kg in SS-06 to 4.92 mg/kg in SS-05, each well below applicable RSR criterion for arsenic.

Lead was observed in each soil sample, with concentrations ranging from 39.9 mg/kg in SS-06 to 61 mg/kg in SS-05, each well below applicable RSR criterion for lead.

Based on the analytical data obtained in this evaluation, there is evidence of a release associated with soils in AOC-2 (PAHs, ETPH). Further investigation is warranted.

4.2.3 AOC-3: Pole-Mounted Transformer Locations

Four (4) surficial soil samples (SS-01 through SS-04) were collected, one from each utility pole equipped with one or more transformers. Sample locations are depicted on Figure 2.

PCBs were not detected at a concentration that exceeded the laboratory minimum reporting limit for each soil sample collected from target soil sample locations.

Based on the analytical data obtained in this evaluation, there is no evidence of a release associated with soils in AOC-3. Further investigation is not warranted.

V. UPDATED CONCEPTUAL SITE MODEL

This section presents a Conceptual Site Model (CSM) based on the results of the site investigation activities and information reviewed to date. The CSM addresses the 10 topics outlined in the CTDEEP Site Characterization Guidance Document.

5.1 Potential Release Areas

There were previously three (3) AOCs on the site identified during the completion of a Phase I ESA. Two (2) release areas were identified: one associated with artificial fill (AOC #1) and one identified with hydraulic trash compactors (AOC #2). No release was identified for AOC #3 (pole-mounted transformers).

This Phase II ESA investigation revealed that the site's surficial geology is comprised of two (2) upper fill layers overlying native glacial deposits.

The upper layer, generally observed to range in 2-6 feet in thickness, consists of a light-medium brown sandy fill layer with varying percentages of silt and gravel. This upper fill layer is underlain with a darker sandy fill material, consisting of ash, coal, brick, glass, asphalt, plastic and concrete. The thickness of this fill layer ranges from 2-10 feet.

Natural brown fine-to-coarse sand with cobbles and gravel are encountered below the fill layers, at depths typically ranging from 6-20 feet below ground surface.

5.2 Constituents of Concern

The site has undergone significant filling since the mid-1950s and back to the time of site development. COCs include ETPH, lead, arsenic, PAHs and PCBs. The distribution of COCs is fairly uniform in each fill layer, with higher concentrations observed in the lower fill layer, which contains a significant quantity of ash and other manmade rubble.

Generally, lead, arsenic, ETPH and PCBs were observed in select soil samples; however, most were well below respective RSR criteria. PAH detections were primarily observed in the lower ash-containing fill layer.

Elevated ETPH and PAHs were observed in soils adjacent to hydraulic equipment associated with the site's two (2) trash compactors.

5.3 Nature of Release

The Release Area associated with the historic fill was likely the result of site development/redevelopment and the need for fill for site grading after the flood of 1955. The sources of fill utilized at the Site were not identified as part of this investigation; however, the nature of contaminants identified in historic fill are typical of those observed in urban fill tested at other sites within Ansonia and other municipalities.

The Release Area associated with the hydraulic trash compactors is likely the result of minor surficial spills over time due to equipment failure or maintenance activities.

No other Release Areas or Potential Release Areas have been identified at the site.

5.4 Release Mechanism & Migration Pathway

The presence of elevated metals, PAHs, PCBs and ETPH in urban/historic fill was observed primarily in the lower fill layer. The same COCs are present in the upper polluted fill layer at much lower concentrations.

The release mechanism associated with the hydraulic trash compactors is likely surficial, based on the result of minor surficial spills over time due to equipment failure or maintenance activities.

No other Release Areas or Potential Release Areas have been identified at the Site.

5.5 Environmental Setting Into Which Release Occurred

The site is located at an elevation of approximately 34 feet above sea level (National Geodetic Vertical Datum of 1929). The topography of the Site generally slopes downward from the west to the east.

Groundwater in the general vicinity of the subject Site is classified by CTDEEP as GA groundwater. The GA classification is defined by CTDEEP as groundwater within the area of private water supply wells or an area with the potential to provide water to public or private supply wells. The CTDEEP presumes that groundwater in a GA area is, at a minimum, suitable for drinking or other domestic uses without treatment.

Depth to groundwater is expected to be approximately 20 feet below grade, based on data obtained from past investigations conducted on the south complex. Groundwater discharges to the Naugatuck River, located within 100 feet of the Site to the east.

5.6 Characteristics of Subsurface Materials

Subsurface materials consisted of artificial sandy fill of varying thickness overlying native glacial deposits. Manmade fragments detected in the deeper fill layer generally consisted of ash, coal, glass, brick, concrete, ceramics and wood. There was no visual evidence of industrial wastes, oils, solvents, etc….

5.7 Stratigraphic Considerations

The Site is located within the Iapetos, Connecticut Valley Synclinorium. The subsurface geology at the subject Site is reported to be gray to spotted, medium to coarse grained, foliated gneiss. Bedrock was not encountered during the investigation.

Results of the field investigation revealed that the Site's surficial geology is comprised of two (2) upper fill layers overlying native glacial deposits.

The upper layer, generally observed to range in 2-6 feet in thickness, consists of a light-medium brown sandy fill layer with varying percentages of silt and gravel. This upper fill layer is underlain with a darker sandy fill material, consisting of ash, coal, brick, glass, asphalt, plastic and concrete. The thickness of this fill layer ranges from 2-10 feet.

Natural brown fine-to-coarse sand with cobbles and gravel are encountered below the fill layers, at depths typically ranging from 6-20 feet below ground surface.

5.8 Fate & Transport Characteristics of Substances Released

Metals, PCBs, ETPH and PAH constituents observed in the fill layers and adjacent to hydraulic trash compactors are relatively low in concentration. Significant COC detections were observed in the lower fill layer, as discussed above.

Groundwater at the site is assumed to predominately flow towards the Naugatuck River located east of the Site.

5.9 Potential Receptors

Potential receptors associated with any soil contamination at the subject site are on-site workers that may have cause to disturb the soils. Potential receptors for groundwater contamination include on-site workers who are exposed to the groundwater for any reason, and the Naugatuck River, located downgradient and east of the Site.

5.10 Potential Pathways to Receptors

The following are potential receptor pathways:

- Dermal and ingestion of petroleum, PCB, lead, arsenic and PAH contaminated soil;
- Potential discharge of contaminated groundwater to the Naugatuck River.

VI. FINDINGS AND CONCLUSIONS

6.1 Findings

In evaluating the property, PAYNE employed best engineering and technical judgment within the constraints of time and scope of the assignment. PAYNE's conclusions are based on the conditions existing in July-August 2013. While sampling was conducted to identify or delineate potential or recognized environmental liabilities, it is possible that contamination remains undiscovered. This Report is based on the current fully implemented environmental regulations. Future regulatory modifications, agency interpretations, and/or attitude changes may affect the environmental status of the site.

The site includes the parcel and improvements known as the Riverside Apartments North, located at 106-165 Olson Drive in the City of Ansonia, New Haven County, Connecticut at 41º20'41.69" N latitude and 73º04'54.82" W longitude. This portion of the site is identified in the Ansonia Assessor's Office as parcel 0310068.8.

The site is located between High Street and Olson Drive. Olson Drive and the Naugatuck River abuts the site easterly. According to City Assessor records, the site is located within a multi-family district (GA zone) and the City Center Zoning District. The site is located at an elevation of approximately 36 feet above sea level (National Geodetic Vertical Datum of 1929). The topography of the site is generally level, with minor downward sloping on moving from northwest to the southeast.

The approximately 3-acre parcel is improved with four (4) multi-family apartment buildings and a new boiler house. The residential buildings were constructed circa 1960 and are currently in a state of disrepair. The boiler house was constructed circa 2010-2011 as part of a mechanical decentralization project. Trash generated at the site is handled by two (2) hydraulic trash compactors.

The site has undergone significant filling since the mid-1950s and back to the time of site development. COCs include ETPH, lead, arsenic, PAHs and PCBs.

A total of three (3) AOCs/RECs were identified for the subject site. These AOCs included AOC-1: Polluted Fill; AOC-2: Hydraulic Trash Compactors; and AOC-3: Pole-Mounted Transformers.

Of the three (3) AOCs, two (2) AOCs (AOC-, AOC-2) were determined to be Release Areas and warrant additional investigation in the form of a Phase III ESA in order to determine the degree and extent of contamination within each release area. No release was observed for AOC-3, pole-mounted transformers.

6.2 Conclusions

The data from Phase II testing indicated that release areas were identified for AOC-1 and AOC-2 and that petroleum hydrocarbons, lead, arsenic, PCBs and/or PAHs were present in surficial soils and deeper fill materials at concentrations above applicable RSR criteria. In addition

Based on planned redevelopment of the site, a Phase III ESA sampling program should be developed and implemented. The primary objectives of this Phase III ESA are to conduct investigations to define the nature and extent of identified release areas and to provide a basis for making critical decisions regarding conditions that do not comply with the Remediation Standard Regulations (RSRs).

VII. LIMITATIONS

1. The observations described in this report were made under the conditions stated herein. The conclusions presented in this report were based solely upon the services described herein, and not on scientific tasks or procedures beyond the scope of described services or the time and budgetary constraints imposed by the Client.

2. In preparing this report, PAYNE as relied on certain information provided by state and local officials and other parties referenced herein, and on information contained in the files of state and/or local agencies available to us at the time of the site assessment. Although there may have been some degree of overlap in the information provided by these various sources, we did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this site assessment.

3. Should additional information on environmental conditions at the site, which is not contained in the report, be obtained, such information should be brought to PAYNE's attention. We will evaluate such information and, on basis of our evaluation, may modify the conclusions stated in this report.

4. Observations were made of the site and of the exterior of the structures on the site as indicated within the report. Where access to portions of the site or to the structures on the site was unavailable or limited, PAYNE renders no opinion as to the presence of hazardous materials or oil, or to the presence of indirect evidence relating to hazardous materials or oil in that portion of the site or structure. In addition, PAYNE renders no opinion as to the presence of hazardous materials or oil, or the presence of indirect evidence relating to hazardous materials or oil where direct observation of the interior walls, floor or ceiling of the structure was obstructed by objects or coverings on or over these surfaces.

5. Unless otherwise specified in the report, PAYNE did not perform testing or analyses to determine the presence or concentration of asbestos, lead paint, polychlorinated biphenyls (PCBs), radon or other naturally occurring materials at the site or in the environment at the site.

6. No specific attempt was made to check the compliance of present or past owners or operators of the site with federal, state or local laws and regulations, environmental or otherwise.

7. The conclusions and recommendations described in this report are based in part on the data obtained from a limited number of soil samples obtained from widely spaced subsurface explorations. The nature and extent of variations between these explorations may not become evident until further investigation and/or

remediation is initiated. If variations or other latent conditions then appear evident, it will be necessary to re-evaluate the conclusions and recommendations of this report.

8. Quantitative laboratory analyses were performed as part of the investigation as noted within this report. The analyses were performed for specific parameters that were selected during the course of this study. It must be noted that additional compounds not searched for during the current study may be present in the soil, soil vapor and/or groundwater at the site. PAYNE has relied upon the data provided by the analytical laboratory, and has not conducted an independent evaluation of the reliability of these data. Moreover, it should be noted that distributions within the groundwater, soil vapor and soil might occur due to the passage of time, seasonal water table fluctuations, recharge events, and other factors.

9. The conclusions and recommendations contained in this report are based in part upon various types of chemical data. While PAYNE has reviewed the data and information as stated in this report, any of PAYNE's interpretations, conclusions and recommendations that have relied on that information will be contingent on its validity. Should additional chemical data, historical information or hydrogeological information become available in the future, such information should be reviewed by PAYNE and the interpretations, conclusions and recommendations presented herein should be modified accordingly.

10. The report has been prepared for the exclusive use of the Ansonia Housing Authority & the Housing Authority of New Haven for the specific application of the property known as the Riverside Apartments located on Olson Drive, Ansonia, Connecticut in accordance with prevailing standards and the requirements of Connecticut Department of Energy & Environmental Protection (DEEP) RSRs and the *Site Characterization Guidance Document.* No person or other body shall be entitled to rely upon or use information presented in this report without written consent of PAYNE Environmental LLC.

11. The analyses and recommendations contained in this report are based on the data obtained from the referenced subsurface explorations. The explorations indicate subsurface conditions only at the specific locations and times, and only to the depths penetrated. They do not necessarily reflect strata variations that may exist between such locations.

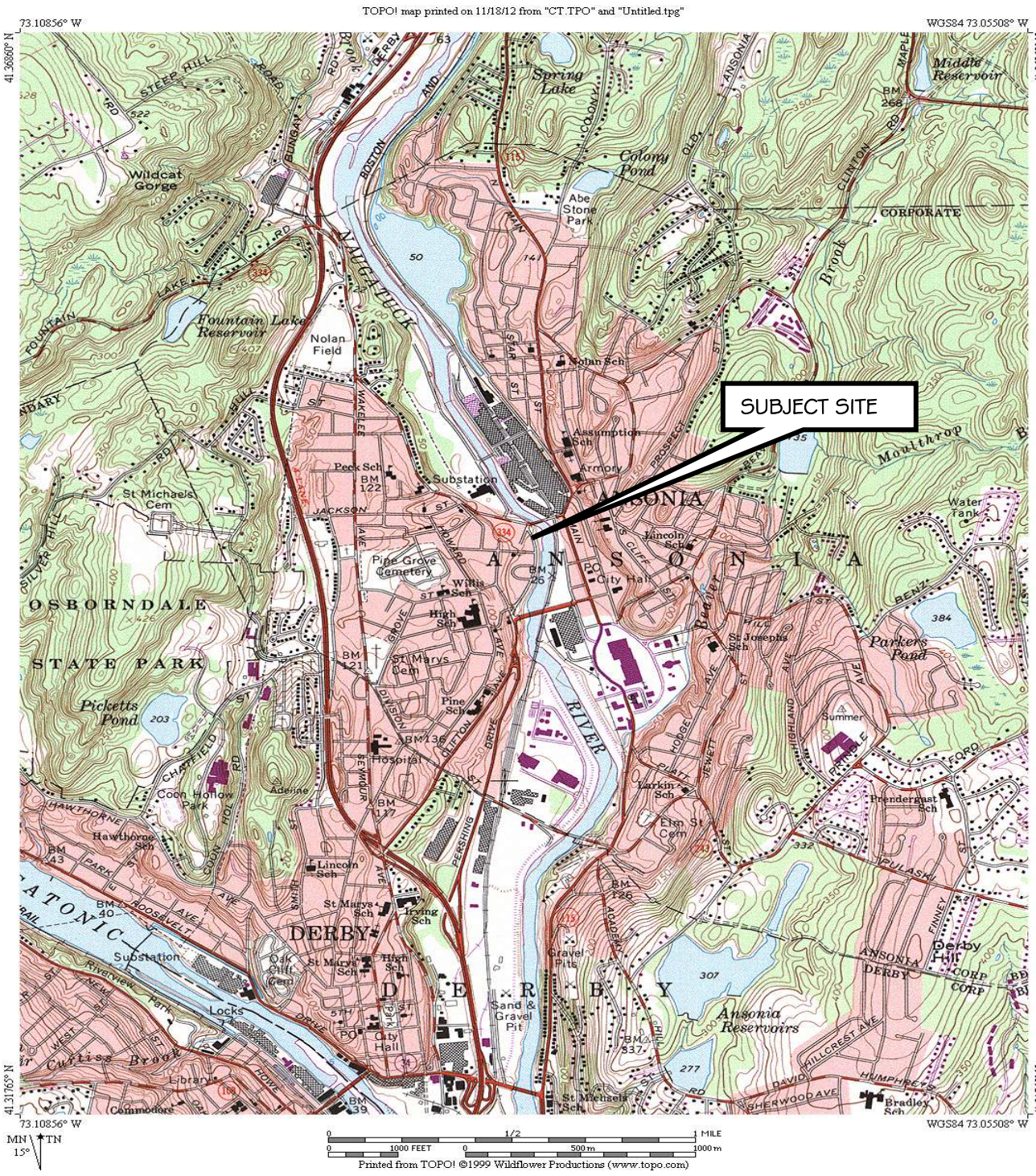
12. In the event that any changes in the nature, design, or location of the facilities are planned, the conclusions and recommendations contained in this report should not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing by PAYNE. PAYNE is not responsible for any claims, damages or liability associated with interpretation of subsurface data or re-use of the subsurface data or engineering analyses without the express

written authorization of PAYNE.

13. In performing this site assessment, PAYNE has endeavored to conform with generally accepted practices of other consultants undertaking similar studies at the same time and in the same geographical area. PAYNE has attempted to observe a degree of care and skill generally exercised by the technical community under similar circumstances and conditions. PAYNE's findings and conclusions must be considered probabilities based on professional judgment concerning the significance of the limited data gathered during the course of the site assessment.

ATTACHMENT A

SITE FIGURES

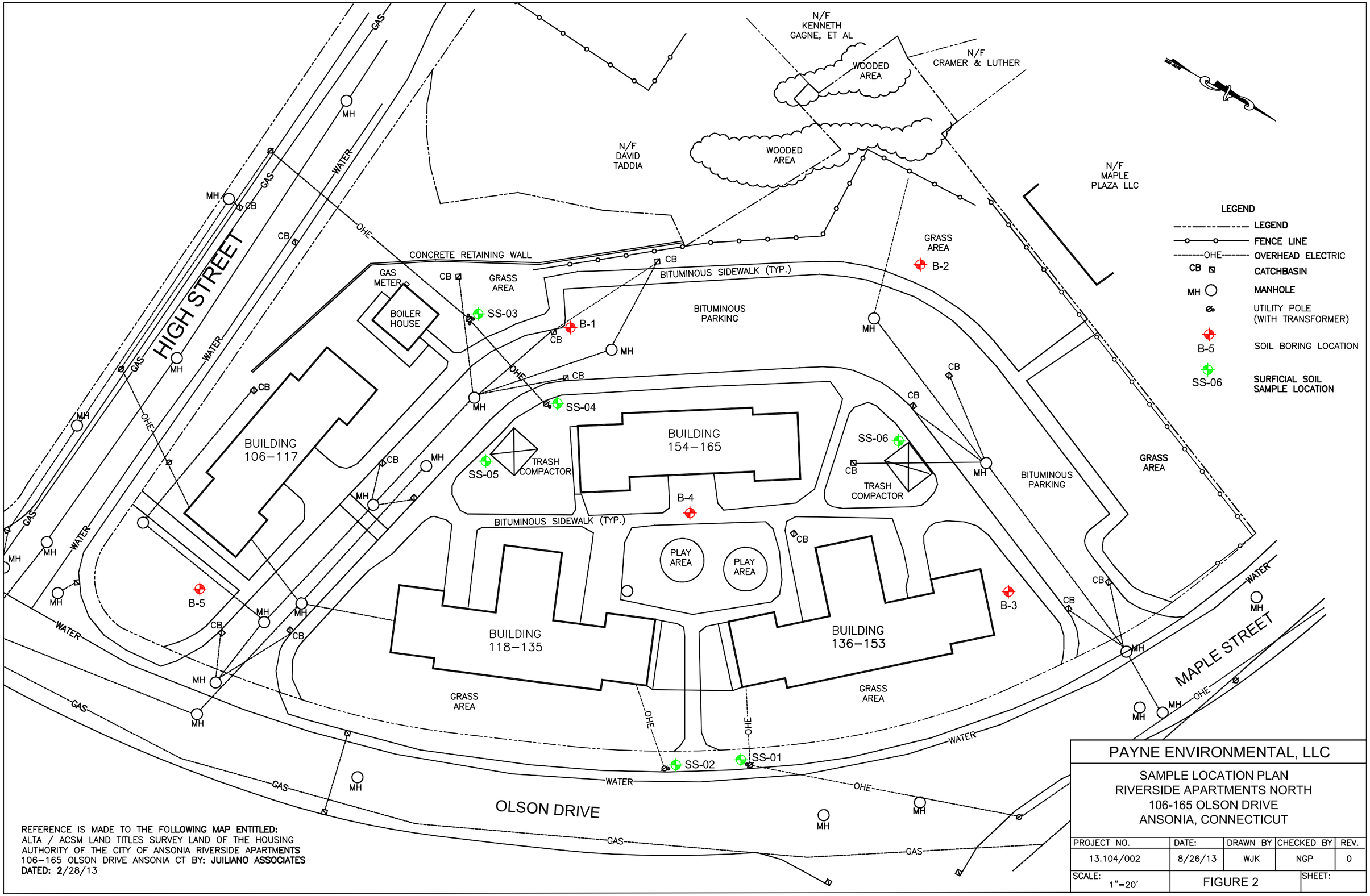


BASE MAP SOURCE:
USGS 7.5 MINUTE SERIES
TOPOGRAPHIC MAP.
ANSONIA QUADRANGLE MAP
1964; REVISED 1984

FIGURE 1:
SITE LOCATION MAP
RIVERSIDE APARTMENTS - NORTH
106-165 OLSON DRIVE
ANSONIA, CONNECTICUT

13.104/002

Payne Environmental, LLC



REFERENCE IS MADE TO THE FOLLOWING MAP ENTITLED:
ALTA / ACSM LAND TITLES SURVEY LAND OF THE HOUSING AUTHORITY OF THE CITY OF ANSONIA RIVERSIDE APARTMENTS 106–165 OLSON DRIVE ANSONIA CT BY: JUILIANO ASSOCIATES
DATED: 2/28/13

PAYNE ENVIRONMENTAL, LLC

SAMPLE LOCATION PLAN
RIVERSIDE APARTMENTS NORTH
106-165 OLSON DRIVE
ANSONIA, CONNECTICUT

PROJECT NO.	DATE:	DRAWN BY	CHECKED BY	REV.
13.104/002	8/26/13	WJK	NGP	0
SCALE: 1"=20'	FIGURE 2		SHEET:	

ATTACHMENT B

TABLES

TABLE 1

Sample Parameter List
Soil Sampling Program
Riverside Apartments North
106-165 Olson Drive, Ansonia, CT

BORING NUMBER	AREA OF CONCERN	ANALYSIS
B-1, B-2, B-3, B-4, B-5	Polluted Fill Assessment	PCBs[1], CT-ETPH[2], Metals[3], PAHs[4]
SS-01 through SS-04	Pole-Mounted Transformer Locations	PCBs
SS-05, SS-06	Hydraulic Trash Compactors	CT-ETPH, Metals, PAHs

1. PCBs – Polychlorinated Biphenyls by Method SW846 3540C/8082A
2. CT-ETPH - Extractable Total Petroleum Hydrocarbons by SW846 Method 3550C/CTDPH
3. Metals – Lead, Arsenic by SW846 Method 6000/7000 Series/6010C
4. PAHs – Semi-volatile Organic Compounds by SW846 Method 3546/8270D

TABLE 2

Riverside Apartments North
106-165 Olson Drive
Ansonia, CT

Soil Analytical Results

Sample ID	**RDEC**	**GA PMC**	**SS-01 (0-1)**	**SS-02 (0-1)**	**SS-03 (0-1)**	**SS-04 (0-1)**	**SS-05 (0-1)**	**SS-06 (0-1)**	**B-1 (0-3)**	**B-2 (4-6)**	**B-3 (4-6)**	**B-5 (0-2)**
Date			8/7/2013	8/7/2013	8/7/2013	8/7/2013	8/7/2013	8/7/2013	8/7/2013	8/7/2013	8/7/2013	8/7/2013
Total Solids			91.6	96.6	93	93.8	86.8	89.8	91.8	85.8	92.0	95.9
PCBs (ug/kg)												
Aroclor-1016	1,000		<21.6	<20.3	<21.5	<21.3	NA	NA	<21.3	<22.7	<21.2	<20.8
Aroclor-1221	*1,000*		<21.6	<20.3	<21.5	<21.3	NA	NA	<21.3	<22.7	<21.2	<20.8
Aroclor-1232	*1,000*		<21.6	<20.3	<21.5	<21.3	NA	NA	<21.3	<22.7	<21.2	<20.8
Aroclor-1242	*1,000*		<21.6	<20.3	<21.5	<21.3	NA	NA	<21.3	<22.7	<21.2	<20.8
Aroclor-1248	*1,000*		<21.6	<20.3	<21.5	<21.3	NA	NA	<21.3	<22.7	<21.2	<20.8
Aroclor-1254	*1,000*		<21.6	<20.3	<21.5	<21.3	NA	NA	**80.9**	<22.7	<21.2	<20.8
Aroclor-1260	*1,000*		<21.6	<20.3	<21.5	<21.3	NA	NA	<21.3	<22.7	<21.2	**23.9**
Aroclor-1262	*1,000*		<21.6	<20.3	<21.5	<21.3	NA	NA	<21.3	<22.7	<21.2	<20.8
Aroclor-1268	*1,000*		<21.6	<20.3	<21.5	<21.3	NA	NA	<21.3	<22.7	<21.2	<20.8
Total Arsenic (mg/kg)	*10*	*0.05*	NA	NA	NA	NA	**4.92**	**4.61**	**3.92**	**7.36**	**5.35**	**4.94**
Total Lead	*400*	*0.015*	NA	NA	NA	NA	**61**	**39.9**	**31**	**920**	**428**	**221**
PAHs (ug/kg)												
Acenaphthene	*NE*	*NE*	NA	NA	NA	NA	<1920	<1,850	<181	<778	<9,050	<692
Acenaphthylene	*1,000,000*	*8,400*	NA	NA	NA	NA	<1920	<1,850	<181	<778	**12,300**	<692
Anthracene	*1,000,000*	*40,000*	NA	NA	NA	NA	<1920	<1,850	<181	**855**	**19,400**	<692
Benzo (a) anthracene	*1,000*	*1,000*	NA	NA	NA	NA	**2,140**	**4,490**	**213**	**4,360**	**28,600**	**2,860**
Benzo (a) pyrene	*1,000*	*1,000*	NA	NA	NA	NA	<1920	**4,680**	**224**	**4,770**	**27,300**	**3,170**
Benzo (b) fluoranthene	*1,000*	*1,000*	NA	NA	NA	NA	**2,340**	**5,800**	**198**	**4,070**	**25,500**	**3,620**
Benzo (g,h,i) perylene	*NE*	*4,200*	NA	NA	NA	NA	<1920	**3,200**	<181	**2,880**	**19,300**	**1,340**
Benzo (k) fluoranthene	*8,400*	*1,000*	NA	NA	NA	NA	<1920	**4,110**	**271**	**3,140**	**21,800**	**2,320**
Chrysene	*NE*	*NE*	NA	NA	NA	NA	**2,640**	**5,780**	**202**	**4,140**	**26,600**	**3,300**
Dibenzo (a,h) anthracene	*NE*	*NE*	NA	NA	NA	NA	<1920	<1,850	<181	<778	<9,050	<692
Fluoranthene	*1,000,000*	*5,600*	NA	NA	NA	NA	**6,070**	**10,100**	**405**	**11,400**	**117,000**	**7,250**
Fluorene	*1,000,000*	*5,600*	NA	NA	NA	NA	<1920	<1,850	<181	<778	**9,920**	<692
Indeno (1,2,3-cd) pyrene	*NE*	*NE*	NA	NA	NA	NA	<1920	**4,050**	<181	**2,410**	**18,900**	**1,630**
1-Methylnaphthalene	*NE*	*NE*	NA	NA	NA	NA	<1920	<1,850	<181	<778	<9,050	<692
2-Methylnaphthalene	*NE*	*NE*	NA	NA	NA	NA	<1920	<1,850	<181	<778	<9,050	<692
Naphthalene	*1,000,000*	*5,600*	NA	NA	NA	NA	<1920	<1,850	<181	<778	**9,100**	<692
Phenanthrene	*1,000,000*	*4,000*	NA	NA	NA	NA	<1920	**2,860**	<181	**3,520**	**93,200**	**3,390**
Pyrene	*1,000,000*	*4,000*	NA	NA	NA	NA	**4,370**	**8,220**	**338**	**8,970**	**96,300**	**6,950**
ETPH (mg/kg)	*500*	*500*	NA	NA	NA	NA	**500**	**655**	**42.4**	**94.3**	**1,020**	**203**
See Note Below							1	1	1	1	1	1

RDEC = Residential Direct Exposure Criteria
GB PMC = GB Pollutant Mobility Criteria
NA = Not Analyzed
ETPH - Extractable Total Petroleum Hydrocarbons (CT Method)
PAHs = Polyacyclic Aromatic Hydrocarbons
NE = None Established

CT ETPH Characteristics
1. C9-C36 Aliphatic Hydrocarbons

ATTACHMENT C

SOIL BORING LOGS

PAYNE ENVIRONMENTAL, LLC

85 WILLOW STREET
NEW HAVEN, CONNECTICUT 06511
Ph:(203) 865-1285 Fax:(203) 865-1286

Boring B-1

Project:	13.104/002	**Top of Casing:**	
Client:	HANH/AHA	**Total Depth:**	
Location	106-165 Olson Drive, Ansonia, CT	**Water Level:**	
Boring ID	B-1	**Drilling Co.:**	Haz-Probe, Inc.
Screen Length:		**Driller:**	Frank, Jeromy
Diameter:		**Method:**	Direct-Push
PVC Type:		**Start Date:**	8/7/2013
Slot Size:		**End Date:**	8/7/2013
Casing Length:		**Notes:**	
Diameter:			
PVC Type:		**Log by:** NGP	**Checked by:** WK

SKETCH MAP

NOT TO SCALE

Depth (ft.)	Sample ID	Sample Interval (feet)	PID Headspace (ppm)	Time	Penetration / Recovery	Soil/Geologic Description	Depth (ft.)
1	B-1	0-4'		0820	40"	4" asphalt Light brown FILL little silt; trace gravel. (0 - 3 feet)	1
2							2
3							3
4		4-8'		0825	40"		4
5						Dark brown sandy FILL; little cobles, brick, ash, glass.	5
6							6
7						(3 - 10 feet)	7
8							8
9		8-12'		0830	48"		9
10							10
11							11
12							12
13		12-16'		0840	48"	Red-brown SAND; little rock and cobble (native)	13
14							14
15						(10 - 20 feet)	15
16							16
17		16-20'		0850	48"		17
18							18
19						Moist at 19-20 feet	19
20						End of Boring at 20 feet.	20

PAYNE ENVIRONMENTAL, LLC

85 WILLOW STREET
NEW HAVEN, CONNECTICUT 06511
Ph:(203) 865-1285 Fax:(203) 865-1286

Boring B-2

Project:	13.104/002	**Top of Casing:**	
Client:	HANH/AHA	**Total Depth:**	
Location	106-165 Olson Drive, Ansonia, CT	**Water Level:**	
Boring ID	B-2	**Drilling Co.:**	Haz-Probe, Inc.
Screen Length:		**Driller:**	Frank, Jeromy
Diameter:		**Method:**	Direct-Push
PVC Type:		**Start Date:**	8/7/2013
Slot Size:		**End Date:**	8/7/2013
Casing Length:		**Notes:**	
Diameter:			
PVC Type:		**Log by:** NGP	**Checked by:** WK

SKETCH MAP

NOT TO SCALE

Depth (ft.)	Sample ID	Sample Interval (feet)	PID Headspace (ppm)	Time	Penetration / Recovery	Soil/Geologic Description	Depth (ft.)
1	B-2	0-4'		0915	48"	6" topsoil Light brown FILL little silt; trace gravel. (0 - 3 feet)	1
2							2
3							3
4		4-8'		0920	40"		4
5						Dark brown sandy FILL; little cobles, brick, ash, glass.	5
6							6
7						(3 - 7 feet)	7
8		8-12'		0925	48"		8
9							9
10							10
11							11
12		12-16'		0935	48"		12
13						Red-brown SAND; little rock and cobble (native)	13
14							14
15						(7 - 16 feet)	15
16						End of Boring at 16 feet.	16
17							17
18							18
19							19
20							20

PAYNE ENVIRONMENTAL, LLC

85 WILLOW STREET
NEW HAVEN, CONNECTICUT 06511
Ph:(203) 865-1285 Fax:(203) 865-1286

Boring B-3

Project:	13.104/002	**Top of Casing:**	
Client:	HANH/AHA	**Total Depth:**	
Location	106-165 Olson Drive, Ansonia, CT	**Water Level:**	
Boring ID	B-3	**Drilling Co.:**	Haz-Probe, Inc.
Screen Length:		**Driller:**	Frank, Jeromy
Diameter:		**Method:**	Direct-Push
PVC Type:		**Start Date:**	8/7/2013
Slot Size:		**End Date:**	8/7/2013
Casing Length:		**Notes:**	
Diameter:			
PVC Type:		**Log by:** NGP	**Checked by:** WK

SKETCH MAP

NOT TO SCALE

Depth (ft.)	Sample ID	Sample Interval (feet)	PID Headspace (ppm)	Time	Penetration / Recovery	Soil/Geologic Description	Depth (ft.)
1	B-3	0-4'		0950	48"	6" topsoil Light brown FILL little silt; trace gravel. (0 - 6 feet)	1
2							2
3							3
4							4
5		4-8'		0955	48"		5
6							6
7						Dark brown sandy FILL; little cobles, brick, ash, glass.	7
8							8
9		8-12'		1000	48"	(6 - 9 feet)	9
10						Red-brown SAND; little rock and cobble (native)	10
11						(9 - 12 feet)	11
12						End of Boring at 12 feet.	12
13							13
14							14
15							15
16							16
17							17
18							18
19							19
20							20

PAYNE ENVIRONMENTAL, LLC

85 WILLOW STREET
NEW HAVEN, CONNECTICUT 06511
Ph:(203) 865-1285 Fax:(203) 865-1286

Boring B-4

Project:	13.104/002	**Top of Casing:**	
Client:	HANH/AHA	**Total Depth:**	
Location	106-165 Olson Drive, Ansonia, CT	**Water Level:**	
Boring ID	B-4	**Drilling Co.:**	Haz-Probe, Inc.
Screen Length:		**Driller:**	Frank, Jeromy
Diameter:		**Method:**	Direct-Push
PVC Type:		**Start Date:**	8/7/2013
Slot Size:		**End Date:**	8/7/2013
Casing Length:		**Notes:**	
Diameter:			
PVC Type:		**Log by:** NGP	**Checked by:** WK

SKETCH MAP

NOT TO SCALE

Depth (ft.)	Sample ID	Sample Interval (feet)	PID Headspace (ppm)	Time	Penetration / Recovery	Soil/Geologic Description	Depth (ft.)
1	B-4	0-4'		1010	40"	4" asphalt Light brown FILL little silt; trace gravel. (0 - 5 feet)	1
2							2
3							3
4							4
5		4-8'		1015	48"		5
6						Dark brown sandy FILL; little cobles, brick, ash, glass. (5 - 8 feet)	6
7							7
8							8
9		8-12'		1020	48"		9
10						Red-brown SAND; little rock and cobble (native) (8 - 12 feet)	10
11							11
12						End of Boring at 12 feet.	12
13							13
14							14
15							15
16							16
17							17
18							18
19							19
20							20

PAYNE ENVIRONMENTAL, LLC

85 WILLOW STREET
NEW HAVEN, CONNECTICUT 06511
Ph:(203) 865-1285 Fax:(203) 865-1286

Boring B-5

Project:	13.104/002	**Top of Casing:**	
Client:	HANH/AHA	**Total Depth:**	
Location	106-165 Olson Drive, Ansonia, CT	**Water Level:**	
Boring ID	B-5	**Drilling Co.:**	Haz-Probe, Inc.
Screen Length:		**Driller:**	Frank, Jeromy
Diameter:		**Method:**	Direct-Push
PVC Type:		**Start Date:**	8/7/2013
Slot Size:		**End Date:**	8/7/2013
Casing Length:		**Notes:**	
Diameter:			
PVC Type:		**Log by:** NGP	**Checked by:** WK

SKETCH MAP

NOT TO SCALE

Depth (ft.)	Sample ID	Sample Interval (feet)	PID Headspace (ppm)	Time	Penetration / Recovery	Soil/Geologic Description	Depth (ft.)
1	B-5	0-4'		1035	48"	6" topsoil Light br FILL little silt; trace gravel.	1
2							2
3						Dark brown sandy FILL; little cobles, brick, ash,	3
4						glass.	4
5		4-8'		1040	48"	(2 - 10 feet)	5
6							6
7							7
8							8
9		8-12'		1045	48"		9
10							10
11						Red-brown SAND; little rock and cobble (native)	11
12						(10 - 12 feet)	12
13						End of Boring at 12 feet.	13
14							14
15							15
16							16
17							17
18							18
19							19
20							20

ATTACHMENT D

LABORATORY ANALYSES & CHAIN OF CUSTODY DOCUMENTATION

Report Date:
21-Aug-13 15:10

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Payne Environmental, LLC
85 Willow Street
New Haven, CT 06511
Attn: Neil Payne

Project: Riverside Apts - Ansonia, CT
Project #: 13.104/002

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB74697-01	SS-01 (0-1)	Soil	07-Aug-13 07:30	08-Aug-13 18:20
SB74697-02	SS-02 (0-1)	Soil	07-Aug-13 07:35	08-Aug-13 18:20
SB74697-03	SS-03 (0-1)	Soil	07-Aug-13 07:40	08-Aug-13 18:20
SB74697-04	SS-04 (0-1)	Soil	07-Aug-13 07:45	08-Aug-13 18:20
SB74697-05	SS-05 (0-1)	Soil	07-Aug-13 07:50	08-Aug-13 18:20
SB74697-06	SS-06 (0-1)	Soil	07-Aug-13 07:55	08-Aug-13 18:20
SB74697-07	B-1 (0-3)	Soil	07-Aug-13 08:20	08-Aug-13 18:20
SB74697-08	B-2 (4-6)	Soil	07-Aug-13 09:20	08-Aug-13 18:20
SB74697-09	B-3 (4-6)	Soil	07-Aug-13 09:55	08-Aug-13 18:20
SB74697-10	B-5 (0-2)	Soil	07-Aug-13 10:35	08-Aug-13 18:20

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87600/E87936
Maine # MA138
New Hampshire # 2538
New Jersey # MA011/MA012
New York # 11393/11840
Pennsylvania # 68-04426/68-02924
Rhode Island # 98
USDA # S-51435

Authorized by:

Nicole Leja
Laboratory Director

Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.
Please note that this report contains 36 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Spectrum is currently accredited for the specific method or analyte indicated. Please refer to our "Quality" web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (NY-11840, FL-E87936 and NJ-MA012).

Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

Reasonable Confidence Protocols
Laboratory Analysis
QA/QC Certification Form

Laboratory Name: Spectrum Analytical, Inc.

Client: Payne Environmental, LLC - New Haven, CT

Project Location: Riverside Apts - Ansonia, CT

Project Number: 13.104/002

Sampling Date(s):
8/7/2013

Laboratory Sample ID(s):
SB74697-01 through SB74697-10

RCP Methods Used:

CT ETPH

SW846 6010C

SW846 8082A

SW846 8270D

1	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the CT DEP method-specific Reasonable Confidence Protocol documents?	✓ Yes No
1A	Were the method specified preservation and holding time requirements met?	✓ Yes No
1B	***VPH and EPH methods only***: Was the VPH or EPH method conducted without significant modifications (see Section 11.3 of respective RCP methods)?	Yes No
2	Were all samples received by the laboratory in a condition consistent with that described on the associated chain-of-custody document(s)?	✓ Yes No
3	Were samples received at an appropriate temperature?	✓ Yes No
4	Were all QA/QC performance criteria specified in the Reasonable Confidence Protocol documents achieved?	Yes ✓ No
5	a) Were reporting limits specified or referenced on the chain-of-custody? b) Were these reporting limits met?	Yes ✓ No Yes No
6	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the Reasonable Confidence Protocol documents?	Yes ✓ No
7	Are project-specific matrix spikes and laboratory duplicates included in this data set?	✓ Yes No

Note: For all questions to which the response was "No" (with the exception of question #7), additional information must be provided in an attached narrative. If the answer to question #1, #1A, or #1B is "No", the data package does not meet the requirements for "Reasonable Confidence."

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for obtaining the information contained in this analytical report, such information is accurate and complete.

Nicole Leja
Laboratory Director
Date: 8/21/2013

CASE NARRATIVE:

The samples were received 1.6 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

Required site-specific Matrix Spike/Matrix Spike Duplicate (MS/MSD) must be requested by the client and sufficient sample must be submitted for the additional analyses. Samples submitted with insufficient volume/weight will not be analyzed for site specific MS/MSD, however a batch MS/MSD may be analyzed from a non-site specific sample.

CTDEP has published a list of analytical methods which provides a series of recommended protocols for the acquisition, analysis and reporting of analytical data in support of decisions being made utilizing the Reasonable Confidence Protocol (RCP). "Reasonable Confidence" can be established only for those methods published by the CTDEP in the RCP guidelines. The compounds and/or elements reported were specifically requested by the client on the Chain of Custody and in some cases may not include the full analyte list as defined in the method. Regulatory limits may not be achieved if specific method and/or technique was not requested on the Chain of Custody.

The CTDEP RCP requests that "all non-detects and all results below the reporting limit are reported as ND (Not Detected at the Specified Reporting Limit)". All non-detects and all results below the reporting limit are reported as "<" (less than) the reporting limit in this report.

If no reporting limits were specified or referenced on the chain-of-custody the laboratory's practical quantitation limits were applied.

Tetrachloro-m-xylene is recommended as a surrogate by the CTDEP RCP for the following SW846 Methods 8081, 8082 and 8151. Spectrum Analytical, Inc. uses Tetrachloro-m-xylene as the Internal Standard for these methods and Dibromooctaflourobiphenyl as the surrogate.

For this work order, the reporting limits have not been referenced or specified.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

CT ETPH

Spikes:

1319563-MS1 *Source: SB74697-05*

The Reporting Limit has been raised to account for matrix interference.

1319563-MSD1 *Source: SB74697-05*

RPD out of acceptance range.

C9-C36 Aliphatic Hydrocarbons

The Reporting Limit has been raised to account for matrix interference.

The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

C9-C36 Aliphatic Hydrocarbons

Duplicates:

1319563-DUP1 *Source: SB74697-05*

The Reporting Limit has been raised to account for matrix interference.

Samples:

SB74697-05 *SS-05 (0-1)*

CT ETPH

Samples:

SB74697-05 *SS-05 (0-1)*

The Reporting Limit has been raised to account for matrix interference.

SB74697-06 *SS-06 (0-1)*

The Reporting Limit has been raised to account for matrix interference.

The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

1-Chlorooctadecane

SB74697-09 *B-3 (4-6)*

The Reporting Limit has been raised to account for matrix interference.

The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

1-Chlorooctadecane

SW846 8082A

Spikes:

1319562-MS1 *Source: SB74697-01*

The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

Decachlorobiphenyl (Sr)

1319562-MSD1 *Source: SB74697-01*

The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

Decachlorobiphenyl (Sr)

Duplicates:

1319562-DUP1 *Source: SB74697-01*

The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

Decachlorobiphenyl (Sr)

Samples:

SB74697-01 *SS-01 (0-1)*

The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

Decachlorobiphenyl (Sr)

SB74697-02 *SS-02 (0-1)*

The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

Decachlorobiphenyl (Sr)

SB74697-04 *SS-04 (0-1)*

SW846 8082A

Samples:

SB74697-04 *SS-04 (0-1)*

The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

Decachlorobiphenyl (Sr)

SB74697-09 *B-3 (4-6)*

The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

Decachlorobiphenyl (Sr)

SW846 8270D

Samples:

S309793-CCV1

Analyte percent difference is outside individual acceptance criteria (20), but within overall method allowances.

Pyrene (21.7%)

This affected the following samples:

1319560-BLK1

S309913-CCV1

Analyte percent difference is outside individual acceptance criteria (20), but within overall method allowances.

1-Methylnaphthalene (31.8%)
2-Methylnaphthalene (24.0%)

This affected the following samples:

B-2 (4-6)
B-3 (4-6)
B-5 (0-2)

SB74697-05 *SS-05 (0-1)*

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

SB74697-06 *SS-06 (0-1)*

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

SB74697-08 *B-2 (4-6)*

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

SB74697-09 *B-3 (4-6)*

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference's.

2-Fluorobiphenyl
Terphenyl-dl4

SB74697-10 *B-5 (0-2)*

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

Sample Acceptance Check Form

Client:	Payne Environmental, LLC - New Haven, CT
Project:	Riverside Apts - Ansonia, CT / 13.104/002
Work Order:	SB74697
Sample(s) received on:	8/8/2013
Received by:	Jessica Hoffman

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	Yes	No	N/A
1. Were custody seals present?	☐	☑	☐
2. Were custody seals intact?	☐	☐	☑
3. Were samples received at a temperature of ≤ 6°C?	☑	☐	☐
4. Were samples cooled on ice upon transfer to laboratory representative?	☐	☑	☐
5. Were samples refrigerated upon transfer to laboratory representative?	☑	☐	☐
6. Were sample containers received intact?	☑	☐	☐
7. Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	☑	☐	☐
8. Were samples accompanied by a Chain of Custody document?	☑	☐	☐
9. Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	☑	☐	☐
10. Did sample container labels agree with Chain of Custody document?	☑	☐	☐
11. Were samples received within method-specific holding times?	☑	☐	☐

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
SS-01 (0-1)	13.104/002	Soil	07-Aug-13 07:30	08-Aug-13
SB74697-01				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolatile Organic Compounds by GC													
Polychlorinated Biphenyls													
Prepared by method SW846 3545A													
12674-11-2	Aroclor-1016	< 21.6		µg/kg dry	21.6	16.1	1	SW846 8082A	15-Aug-13	19-Aug-13	IMR	1319562	X
11104-28-2	Aroclor-1221	< 21.6		µg/kg dry	21.6	19.4	1	"	"	"	"	"	X
11141-16-5	Aroclor-1232	< 21.6		µg/kg dry	21.6	13.8	1	"	"	"	"	"	X
53469-21-9	Aroclor-1242	< 21.6		µg/kg dry	21.6	13.0	1	"	"	"	"	"	X
12672-29-6	Aroclor-1248	< 21.6		µg/kg dry	21.6	11.2	1	"	"	"	"	"	X
11097-69-1	Aroclor-1254	< 21.6		µg/kg dry	21.6	18.0	1	"	"	"	"	"	X
11096-82-5	Aroclor-1260	< 21.6		µg/kg dry	21.6	13.4	1	"	"	"	"	"	X
37324-23-5	Aroclor-1262	< 21.6		µg/kg dry	21.6	20.1	1	"	"	"	"	"	X
11100-14-4	Aroclor-1268	< 21.6		µg/kg dry	21.6	8.90	1	"	"	"	"	"	X
Surrogate recoveries:													
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*70*			*30-150 %*			"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*95*			*30-150 %*			"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr)*	*175*	S02		*30-150 %*			"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr) [2C]*	*100*			*30-150 %*			"	"	"	"	"	
General Chemistry Parameters													
	% Solids	**91.6**		%			1	SM2540 G Mod.	12-Aug-13	12-Aug-13	DT	1319178	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
SS-02 (0-1) SB74697-02	13.104/002	Soil	07-Aug-13 07:35	08-Aug-13

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolatile Organic Compounds by GC													
Polychlorinated Biphenyls													
Prepared by method SW846 3545A													
12674-11-2	Aroclor-1016	< 20.3		µg/kg dry	20.3	15.2	1	SW846 8082A	15-Aug-13	19-Aug-13	IMR	1319562	X
11104-28-2	Aroclor-1221	< 20.3		µg/kg dry	20.3	18.3	1	"	"	"	"	"	X
11141-16-5	Aroclor-1232	< 20.3		µg/kg dry	20.3	13.1	1	"	"	"	"	"	X
53469-21-9	Aroclor-1242	< 20.3		µg/kg dry	20.3	12.2	1	"	"	"	"	"	X
12672-29-6	Aroclor-1248	< 20.3		µg/kg dry	20.3	10.6	1	"	"	"	"	"	X
11097-69-1	Aroclor-1254	< 20.3		µg/kg dry	20.3	17.0	1	"	"	"	"	"	X
11096-82-5	Aroclor-1260	< 20.3		µg/kg dry	20.3	12.6	1	"	"	"	"	"	X
37324-23-5	Aroclor-1262	< 20.3		µg/kg dry	20.3	18.9	1	"	"	"	"	"	X
11100-14-4	Aroclor-1268	< 20.3		µg/kg dry	20.3	8.39	1	"	"	"	"	"	X
Surrogate recoveries:													
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*80*			*30-150 %*			"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*60*			*30-150 %*			"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr)*	*180*	S02		*30-150 %*			"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr) [2C]*	*45*			*30-150 %*			"	"	"	"	"	
General Chemistry Parameters													
	% Solids	**96.6**		%			1	SM2540 G Mod.	12-Aug-13	12-Aug-13	DT	1319178	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
SS-03 (0-1)	13.104/002	Soil	07-Aug-13 07:40	08-Aug-13
SB74697-03				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolatile Organic Compounds by GC													
Polychlorinated Biphenyls													
Prepared by method SW846 3545A													
12674-11-2	Aroclor-1016	< 21.5		µg/kg dry	21.5	16.0	1	SW846 8082A	15-Aug-13	19-Aug-13	IMR	1319562	X
11104-28-2	Aroclor-1221	< 21.5		µg/kg dry	21.5	19.4	1	"	"	"	"	"	X
11141-16-5	Aroclor-1232	< 21.5		µg/kg dry	21.5	13.8	1	"	"	"	"	"	X
53469-21-9	Aroclor-1242	< 21.5		µg/kg dry	21.5	12.9	1	"	"	"	"	"	X
12672-29-6	Aroclor-1248	< 21.5		µg/kg dry	21.5	11.2	1	"	"	"	"	"	X
11097-69-1	Aroclor-1254	< 21.5		µg/kg dry	21.5	17.9	1	"	"	"	"	"	X
11096-82-5	Aroclor-1260	< 21.5		µg/kg dry	21.5	13.3	1	"	"	"	"	"	X
37324-23-5	Aroclor-1262	< 21.5		µg/kg dry	21.5	20.0	1	"	"	"	"	"	X
11100-14-4	Aroclor-1268	< 21.5		µg/kg dry	21.5	8.86	1	"	"	"	"	"	X
Surrogate recoveries:													
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*75*			*30-150 %*			"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*85*			*30-150 %*			"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr)*	*145*			*30-150 %*			"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr) [2C]*	*90*			*30-150 %*			"	"	"	"	"	
General Chemistry Parameters													
	% Solids	**93.0**		%			1	SM2540 G Mod.	12-Aug-13	12-Aug-13	DT	1319178	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
SS-04 (0-1)	13.104/002	Soil	07-Aug-13 07:45	08-Aug-13
SB74697-04				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolatile Organic Compounds by GC													
Polychlorinated Biphenyls													
Prepared by method SW846 3545A													
12674-11-2	Aroclor-1016	< 21.3		µg/kg dry	21.3	15.9	1	SW846 8082A	15-Aug-13	19-Aug-13	IMR	1319562	X
11104-28-2	Aroclor-1221	< 21.3		µg/kg dry	21.3	19.2	1	"	"	"	"	"	X
11141-16-5	Aroclor-1232	< 21.3		µg/kg dry	21.3	13.7	1	"	"	"	"	"	X
53469-21-9	Aroclor-1242	< 21.3		µg/kg dry	21.3	12.8	1	"	"	"	"	"	X
12672-29-6	Aroclor-1248	< 21.3		µg/kg dry	21.3	11.1	1	"	"	"	"	"	X
11097-69-1	Aroclor-1254	< 21.3		µg/kg dry	21.3	17.7	1	"	"	"	"	"	X
11096-82-5	Aroclor-1260	< 21.3		µg/kg dry	21.3	13.2	1	"	"	"	"	"	X
37324-23-5	Aroclor-1262	< 21.3		µg/kg dry	21.3	19.8	1	"	"	"	"	"	X
11100-14-4	Aroclor-1268	< 21.3		µg/kg dry	21.3	8.77	1	"	"	"	"	"	X
Surrogate recoveries:													
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*80*			*30-150 %*			"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*80*			*30-150 %*			"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr)*	*270*	S02		*30-150 %*			"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr) [2C]*	*95*			*30-150 %*			"	"	"	"	"	
General Chemistry Parameters													
	% Solids	**93.8**		%			1	SM2540 G Mod.	12-Aug-13	12-Aug-13	DT	1319178	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
SS-05 (0-1)	13.104/002	Soil	07-Aug-13 07:50	08-Aug-13
SB74697-05				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolatile Organic Compounds by GCMS													
PAHs by SW846 8270			GS1										
Prepared by method SW846 3545A													
83-32-9	Acenaphthene	< 1920	D	µg/kg dry	1920	486	10	SW846 8270D	15-Aug-13	17-Aug-13	JG	1319560	X
208-96-8	Acenaphthylene	< 1920	D	µg/kg dry	1920	530	10	"	"	"	"	"	X
120-12-7	Anthracene	< 1920	D	µg/kg dry	1920	488	10	"	"	"	"	"	X
56-55-3	Benzo (a) anthracene	**2,140**	D	µg/kg dry	1920	512	10	"	"	"	"	"	X
50-32-8	Benzo (a) pyrene	< 1920	D	µg/kg dry	1920	521	10	"	"	"	"	"	X
205-99-2	Benzo (b) fluoranthene	**2,340**	D	µg/kg dry	1920	416	10	"	"	"	"	"	X
191-24-2	Benzo (g,h,i) perylene	< 1920	D	µg/kg dry	1920	533	10	"	"	"	"	"	X
207-08-9	Benzo (k) fluoranthene	< 1920	D	µg/kg dry	1920	678	10	"	"	"	"	"	X
218-01-9	Chrysene	**2,640**	D	µg/kg dry	1920	540	10	"	"	"	"	"	X
53-70-3	Dibenzo (a,h) anthracene	< 1920	D	µg/kg dry	1920	494	10	"	"	"	"	"	X
206-44-0	Fluoranthene	**6,070**	D	µg/kg dry	1920	535	10	"	"	"	"	"	X
86-73-7	Fluorene	< 1920	D	µg/kg dry	1920	532	10	"	"	"	"	"	X
193-39-5	Indeno (1,2,3-cd) pyrene	< 1920	D	µg/kg dry	1920	531	10	"	"	"	"	"	X
90-12-0	1-Methylnaphthalene	< 1920	D	µg/kg dry	1920	565	10	"	"	"	"	"	
91-57-6	2-Methylnaphthalene	< 1920	D	µg/kg dry	1920	546	10	"	"	"	"	"	X
91-20-3	Naphthalene	< 1920	D	µg/kg dry	1920	534	10	"	"	"	"	"	X
85-01-8	Phenanthrene	< 1920	D	µg/kg dry	1920	511	10	"	"	"	"	"	X
129-00-0	Pyrene	**4,370**	D	µg/kg dry	1920	463	10	"	"	"	"	"	X
Surrogate recoveries:													
321-60-8	*2-Fluorobiphenyl*	*75*			*30-130 %*			"	"	"	"	"	
1718-51-0	*Terphenyl-dl4*	*96*			*30-130 %*			"	"	"	"	"	
Extractable Petroleum Hydrocarbons													
Extractable Total Petroleum Hydrocarbons			R01										
Prepared by method SW846 3550C													
8006-61-9	Gasoline	< 153	D	mg/kg dry	153	7.6	5	CT ETPH	15-Aug-13	17-Aug-13	SEP	1319563	
68476-30-2	Fuel Oil #2	< 153	D	mg/kg dry	153	15.3	5	"	"	"	"	"	
68476-31-3	Fuel Oil #4	< 153	D	mg/kg dry	153	15.3	5	"	"	"	"	"	
68553-00-4	Fuel Oil #6	< 153	D	mg/kg dry	153	38.2	5	"	"	"	"	"	
M09800000	Motor Oil	< 153	D	mg/kg dry	153	15.3	5	"	"	"	"	"	
J00100000	Aviation Fuel	< 153	D	mg/kg dry	153	38.2	5	"	"	"	"	"	
	Unidentified	**500**	D	mg/kg dry	153	38.2	5	"	"	"	"	"	
	Other Oil	**Calculated as**		mg/kg dry	153	15.3	5	"	"	"	"	"	
	Total Petroleum Hydrocarbons	**500**	D	mg/kg dry	153	15.3	5	"	"	"	"	"	
	C9-C36 Aliphatic Hydrocarbons	**500**	D	mg/kg dry	153	14.1	5	"	"	"	"	"	
Surrogate recoveries:													
3386-33-2	*1-Chlorooctadecane*	*57*			*50-150 %*			"	"	"	"	"	
Total Metals by EPA 6000/7000 Series Methods													
7440-38-2	Arsenic	**4.92**		mg/kg dry	1.63	0.712	1	SW846 6010C	16-Aug-13	20-Aug-13	EDT	1319713	X
7439-92-1	Lead	**61.0**		mg/kg dry	1.63	0.602	1	"	"	"	"	"	X
General Chemistry Parameters													
	% Solids	**86.8**		%			1	SM2540 G Mod.	12-Aug-13	12-Aug-13	DT	1319178	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
SS-06 (0-1)	13.104/002	Soil	07-Aug-13 07:55	08-Aug-13
SB74697-06				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolatile Organic Compounds by GCMS													
PAHs by SW846 8270			GS1										
Prepared by method SW846 3545A													
83-32-9	Acenaphthene	< 1850	D	µg/kg dry	1850	471	10	SW846 8270D	15-Aug-13	17-Aug-13	JG	1319560	X
208-96-8	Acenaphthylene	< 1850	D	µg/kg dry	1850	513	10	"	"	"	"	"	X
120-12-7	Anthracene	< 1850	D	µg/kg dry	1850	472	10	"	"	"	"	"	X
56-55-3	Benzo (a) anthracene	**4,490**	D	µg/kg dry	1850	496	10	"	"	"	"	"	X
50-32-8	Benzo (a) pyrene	**4,680**	D	µg/kg dry	1850	504	10	"	"	"	"	"	X
205-99-2	Benzo (b) fluoranthene	**5,800**	D	µg/kg dry	1850	402	10	"	"	"	"	"	X
191-24-2	Benzo (g,h,i) perylene	**3,200**	D	µg/kg dry	1850	515	10	"	"	"	"	"	X
207-08-9	Benzo (k) fluoranthene	**4,110**	D	µg/kg dry	1850	656	10	"	"	"	"	"	X
218-01-9	Chrysene	**5,780**	D	µg/kg dry	1850	523	10	"	"	"	"	"	X
53-70-3	Dibenzo (a,h) anthracene	< 1850	D	µg/kg dry	1850	478	10	"	"	"	"	"	X
206-44-0	Fluoranthene	**10,100**	D	µg/kg dry	1850	518	10	"	"	"	"	"	X
86-73-7	Fluorene	< 1850	D	µg/kg dry	1850	515	10	"	"	"	"	"	X
193-39-5	Indeno (1,2,3-cd) pyrene	**4,050**	D	µg/kg dry	1850	513	10	"	"	"	"	"	X
90-12-0	1-Methylnaphthalene	< 1850	D	µg/kg dry	1850	547	10	"	"	"	"	"	
91-57-6	2-Methylnaphthalene	< 1850	D	µg/kg dry	1850	529	10	"	"	"	"	"	X
91-20-3	Naphthalene	< 1850	D	µg/kg dry	1850	517	10	"	"	"	"	"	X
85-01-8	Phenanthrene	**2,860**	D	µg/kg dry	1850	494	10	"	"	"	"	"	X
129-00-0	Pyrene	**8,220**	D	µg/kg dry	1850	448	10	"	"	"	"	"	X
Surrogate recoveries:													
321-60-8	*2-Fluorobiphenyl*	*73*			*30-130 %*			"	"	"	"	"	
1718-51-0	*Terphenyl-dl4*	*73*			*30-130 %*			"	"	"	"	"	
Extractable Petroleum Hydrocarbons													
Extractable Total Petroleum Hydrocarbons			R01										
Prepared by method SW846 3550C													
8006-61-9	Gasoline	< 59.1	D	mg/kg dry	59.1	3.0	2	CT ETPH	15-Aug-13	17-Aug-13	SEP	1319563	
68476-30-2	Fuel Oil #2	< 59.1	D	mg/kg dry	59.1	5.9	2	"	"	"	"	"	
68476-31-3	Fuel Oil #4	< 59.1	D	mg/kg dry	59.1	5.9	2	"	"	"	"	"	
68553-00-4	Fuel Oil #6	< 59.1	D	mg/kg dry	59.1	14.8	2	"	"	"	"	"	
M09800000	Motor Oil	< 59.1	D	mg/kg dry	59.1	5.9	2	"	"	"	"	"	
J00100000	Aviation Fuel	< 59.1	D	mg/kg dry	59.1	14.8	2	"	"	"	"	"	
	Unidentified	**655**	D	mg/kg dry	59.1	14.8	2	"	"	"	"	"	
	Other Oil	**Calculated as**		mg/kg dry	59.1	5.9	2	"	"	"	"	"	
	Total Petroleum Hydrocarbons	**655**	D	mg/kg dry	59.1	5.9	2	"	"	"	"	"	
	C9-C36 Aliphatic Hydrocarbons	**655**	D	mg/kg dry	59.1	5.5	2	"	"	"	"	"	
Surrogate recoveries:													
3386-33-2	*1-Chlorooctadecane*	*388*	S02		*50-150 %*			"	"	"	"	"	
Total Metals by EPA 6000/7000 Series Methods													
7440-38-2	Arsenic	**4.61**		mg/kg dry	1.50	0.653	1	SW846 6010C	16-Aug-13	20-Aug-13	EDT	1319713	X
7439-92-1	Lead	**39.9**		mg/kg dry	1.50	0.552	1	"	"	"	"	"	X
General Chemistry Parameters													
	% Solids	**89.8**		%			1	SM2540 G Mod.	12-Aug-13	12-Aug-13	DT	1319178	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
B-1 (0-3) SB74697-07	13.104/002	Soil	07-Aug-13 08:20	08-Aug-13

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolatile Organic Compounds by GCMS													
PAHs by SW846 8270													
Prepared by method SW846 3545A													
83-32-9	Acenaphthene	< 181		µg/kg dry	181	46.0	1	SW846 8270D	15-Aug-13	17-Aug-13	JG	1319560	X
208-96-8	Acenaphthylene	< 181		µg/kg dry	181	50.1	1	"	"	"	"	"	X
120-12-7	Anthracene	< 181		µg/kg dry	181	46.1	1	"	"	"	"	"	X
56-55-3	Benzo (a) anthracene	**213**		µg/kg dry	181	48.4	1	"	"	"	"	"	X
50-32-8	Benzo (a) pyrene	**224**		µg/kg dry	181	49.3	1	"	"	"	"	"	X
205-99-2	Benzo (b) fluoranthene	**198**		µg/kg dry	181	39.3	1	"	"	"	"	"	X
191-24-2	Benzo (g,h,i) perylene	< 181		µg/kg dry	181	50.3	1	"	"	"	"	"	X
207-08-9	Benzo (k) fluoranthene	**271**		µg/kg dry	181	64.1	1	"	"	"	"	"	X
218-01-9	Chrysene	**202**		µg/kg dry	181	51.1	1	"	"	"	"	"	X
53-70-3	Dibenzo (a,h) anthracene	< 181		µg/kg dry	181	46.7	1	"	"	"	"	"	X
206-44-0	Fluoranthene	**405**		µg/kg dry	181	50.6	1	"	"	"	"	"	X
86-73-7	Fluorene	< 181		µg/kg dry	181	50.3	1	"	"	"	"	"	X
193-39-5	Indeno (1,2,3-cd) pyrene	< 181		µg/kg dry	181	50.2	1	"	"	"	"	"	X
90-12-0	1-Methylnaphthalene	< 181		µg/kg dry	181	53.4	1	"	"	"	"	"	
91-57-6	2-Methylnaphthalene	< 181		µg/kg dry	181	51.7	1	"	"	"	"	"	X
91-20-3	Naphthalene	< 181		µg/kg dry	181	50.5	1	"	"	"	"	"	X
85-01-8	Phenanthrene	< 181		µg/kg dry	181	48.3	1	"	"	"	"	"	X
129-00-0	Pyrene	**338**		µg/kg dry	181	43.7	1	"	"	"	"	"	X
Surrogate recoveries:													
321-60-8	*2-Fluorobiphenyl*	*79*			*30-130 %*			"	"	"	"	"	
1718-51-0	*Terphenyl-dl4*	*81*			*30-130 %*			"	"	"	"	"	
Semivolatile Organic Compounds by GC													
Polychlorinated Biphenyls													
Prepared by method SW846 3545A													
12674-11-2	Aroclor-1016	< 21.3		µg/kg dry	21.3	15.9	1	SW846 8082A	15-Aug-13	19-Aug-13	IMR	1319562	X
11104-28-2	Aroclor-1221	< 21.3		µg/kg dry	21.3	19.2	1	"	"	"	"	"	X
11141-16-5	Aroclor-1232	< 21.3		µg/kg dry	21.3	13.7	1	"	"	"	"	"	X
53469-21-9	Aroclor-1242	< 21.3		µg/kg dry	21.3	12.8	1	"	"	"	"	"	X
12672-29-6	Aroclor-1248	< 21.3		µg/kg dry	21.3	11.1	1	"	"	"	"	"	X
11097-69-1	Aroclor-1254	**80.9**		µg/kg dry	21.3	17.7	1	"	"	"	"	"	X
11096-82-5	Aroclor-1260	< 21.3		µg/kg dry	21.3	13.2	1	"	"	"	"	"	X
37324-23-5	Aroclor-1262	< 21.3		µg/kg dry	21.3	19.8	1	"	"	"	"	"	X
11100-14-4	Aroclor-1268	< 21.3		µg/kg dry	21.3	8.78	1	"	"	"	"	"	X
Surrogate recoveries:													
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*85*			*30-150 %*			"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*80*			*30-150 %*			"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr)*	*90*			*30-150 %*			"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr) [2C]*	*95*			*30-150 %*			"	"	"	"	"	
Extractable Petroleum Hydrocarbons													
Extractable Total Petroleum Hydrocarbons													
Prepared by method SW846 3550C													
8006-61-9	Gasoline	< 28.2		mg/kg dry	28.2	1.4	1	CT ETPH	15-Aug-13	17-Aug-13	SEP	1319563	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
B-1 (0-3) SB74697-07	13.104/002	Soil	07-Aug-13 08:20	08-Aug-13

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*MDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Extractable Petroleum Hydrocarbons													
Extractable Total Petroleum Hydrocarbons Prepared by method SW846 3550C													
68476-30-2	Fuel Oil #2	< 28.2		mg/kg dry	28.2	2.8	1	CT ETPH	15-Aug-13	17-Aug-13	SEP	1319563	
68476-31-3	Fuel Oil #4	< 28.2		mg/kg dry	28.2	2.8	1	"	"	"	"	"	
68553-00-4	Fuel Oil #6	< 28.2		mg/kg dry	28.2	7.0	1	"	"	"	"	"	
M09800000	Motor Oil	< 28.2		mg/kg dry	28.2	2.8	1	"	"	"	"	"	
J00100000	Aviation Fuel	< 28.2		mg/kg dry	28.2	7.0	1	"	"	"	"	"	
	Unidentified	**42.4**		mg/kg dry	28.2	7.0	1	"	"	"	"	"	
	Other Oil	**Calculated as**		mg/kg dry	28.2	2.8	1	"	"	"	"	"	
	Total Petroleum Hydrocarbons	**42.4**		mg/kg dry	28.2	2.8	1	"	"	"	"	"	
	C9-C36 Aliphatic Hydrocarbons	**42.4**		mg/kg dry	28.2	2.6	1	"	"	"	"	"	
Surrogate recoveries:													
3386-33-2	*1-Chlorooctadecane*	*89*			*50-150 %*			"	"	"	"	"	
Total Metals by EPA 6000/7000 Series Methods													
7440-38-2	Arsenic	**3.92**		mg/kg dry	1.60	0.698	1	SW846 6010C	16-Aug-13	20-Aug-13	EDT	1319713	X
7439-92-1	Lead	**31.0**		mg/kg dry	1.60	0.590	1	"	"	"	"	"	X
General Chemistry Parameters													
	% Solids	**91.8**		%			1	SM2540 G Mod.	12-Aug-13	12-Aug-13	DT	1319178	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
B-2 (4-6)	13.104/002	Soil	07-Aug-13 09:20	08-Aug-13
SB74697-08				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolatile Organic Compounds by GCMS													
PAHs by SW846 8270			GS1										
Prepared by method SW846 3545A													
83-32-9	Acenaphthene	< 778	D	µg/kg dry	778	198	4	SW846 8270D	15-Aug-13	19-Aug-13	JG	1319560	X
208-96-8	Acenaphthylene	< 778	D	µg/kg dry	778	215	4	"	"	"	"	"	X
120-12-7	Anthracene	**855**	D	µg/kg dry	778	198	4	"	"	"	"	"	X
56-55-3	Benzo (a) anthracene	**4,360**	D	µg/kg dry	778	208	4	"	"	"	"	"	X
50-32-8	Benzo (a) pyrene	**4,770**	D	µg/kg dry	778	212	4	"	"	"	"	"	X
205-99-2	Benzo (b) fluoranthene	**4,070**	D	µg/kg dry	778	169	4	"	"	"	"	"	X
191-24-2	Benzo (g,h,i) perylene	**2,880**	D	µg/kg dry	778	216	4	"	"	"	"	"	X
207-08-9	Benzo (k) fluoranthene	**3,140**	D	µg/kg dry	778	275	4	"	"	"	"	"	X
218-01-9	Chrysene	**4,140**	D	µg/kg dry	778	219	4	"	"	"	"	"	X
53-70-3	Dibenzo (a,h) anthracene	< 778	D	µg/kg dry	778	201	4	"	"	"	"	"	X
206-44-0	Fluoranthene	**11,400**	D	µg/kg dry	778	217	4	"	"	"	"	"	X
86-73-7	Fluorene	< 778	D	µg/kg dry	778	216	4	"	"	"	"	"	X
193-39-5	Indeno (1,2,3-cd) pyrene	**2,410**	D	µg/kg dry	778	215	4	"	"	"	"	"	X
90-12-0	1-Methylnaphthalene	< 778	D	µg/kg dry	778	229	4	"	"	"	"	"	
91-57-6	2-Methylnaphthalene	< 778	D	µg/kg dry	778	222	4	"	"	"	"	"	X
91-20-3	Naphthalene	< 778	D	µg/kg dry	778	217	4	"	"	"	"	"	X
85-01-8	Phenanthrene	**3,520**	D	µg/kg dry	778	207	4	"	"	"	"	"	X
129-00-0	Pyrene	**8,970**	D	µg/kg dry	778	188	4	"	"	"	"	"	X
Surrogate recoveries:													
321-60-8	*2-Fluorobiphenyl*	*101*			*30-130 %*			"	"	"	"	"	
1718-51-0	*Terphenyl-dl4*	*72*			*30-130 %*			"	"	"	"	"	
Semivolatile Organic Compounds by GC													
Polychlorinated Biphenyls													
Prepared by method SW846 3545A													
12674-11-2	Aroclor-1016	< 22.7		µg/kg dry	22.7	17.0	1	SW846 8082A	15-Aug-13	19-Aug-13	IMR	1319562	X
11104-28-2	Aroclor-1221	< 22.7		µg/kg dry	22.7	20.5	1	"	"	"	"	"	X
11141-16-5	Aroclor-1232	< 22.7		µg/kg dry	22.7	14.6	1	"	"	"	"	"	X
53469-21-9	Aroclor-1242	< 22.7		µg/kg dry	22.7	13.7	1	"	"	"	"	"	X
12672-29-6	Aroclor-1248	< 22.7		µg/kg dry	22.7	11.8	1	"	"	"	"	"	X
11097-69-1	Aroclor-1254	< 22.7		µg/kg dry	22.7	18.9	1	"	"	"	"	"	X
11096-82-5	Aroclor-1260	< 22.7		µg/kg dry	22.7	14.1	1	"	"	"	"	"	X
37324-23-5	Aroclor-1262	< 22.7		µg/kg dry	22.7	21.1	1	"	"	"	"	"	X
11100-14-4	Aroclor-1268	< 22.7		µg/kg dry	22.7	9.36	1	"	"	"	"	"	X
Surrogate recoveries:													
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*90*			*30-150 %*			"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*95*			*30-150 %*			"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr)*	*115*			*30-150 %*			"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr) [2C]*	*80*			*30-150 %*			"	"	"	"	"	
Extractable Petroleum Hydrocarbons													
Extractable Total Petroleum Hydrocarbons													
Prepared by method SW846 3550C													
8006-61-9	Gasoline	< 30.5		mg/kg dry	30.5	1.5	1	CT ETPH	15-Aug-13	17-Aug-13	SEP	1319563	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
B-2 (4-6) SB74697-08	13.104/002	Soil	07-Aug-13 09:20	08-Aug-13

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Extractable Petroleum Hydrocarbons													
Extractable Total Petroleum Hydrocarbons Prepared by method SW846 3550C													
68476-30-2	Fuel Oil #2	< 30.5		mg/kg dry	30.5	3.0	1	CT ETPH	15-Aug-13	17-Aug-13	SEP	1319563	
68476-31-3	Fuel Oil #4	< 30.5		mg/kg dry	30.5	3.0	1	"	"	"	"	"	
68553-00-4	Fuel Oil #6	< 30.5		mg/kg dry	30.5	7.6	1	"	"	"	"	"	
M09800000	Motor Oil	< 30.5		mg/kg dry	30.5	3.0	1	"	"	"	"	"	
J00100000	Aviation Fuel	< 30.5		mg/kg dry	30.5	7.6	1	"	"	"	"	"	
	Unidentified	**94.3**		mg/kg dry	30.5	7.6	1	"	"	"	"	"	
	Other Oil	**Calculated as**		mg/kg dry	30.5	3.0	1	"	"	"	"	"	
	Total Petroleum Hydrocarbons	**94.3**		mg/kg dry	30.5	3.0	1	"	"	"	"	"	
	C9-C36 Aliphatic Hydrocarbons	**94.3**		mg/kg dry	30.5	2.8	1	"	"	"	"	"	
Surrogate recoveries:													
3386-33-2	*1-Chlorooctadecane*	*72*			*50-150 %*			"	"	"	"	"	
Total Metals by EPA 6000/7000 Series Methods													
7440-38-2	Arsenic	**7.36**		mg/kg dry	1.66	0.726	1	SW846 6010C	16-Aug-13	20-Aug-13	EDT	1319713	X
7439-92-1	Lead	**920**		mg/kg dry	1.66	0.614	1	"	"	"	"	"	X
General Chemistry Parameters													
	% Solids	**85.8**		%			1	SM2540 G Mod.	12-Aug-13	12-Aug-13	DT	1319178	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
B-3 (4-6)	13.104/002	Soil	07-Aug-13 09:55	08-Aug-13
SB74697-09				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolatile Organic Compounds by GCMS													
PAHs by SW846 8270			GS1										
Prepared by method SW846 3545A													
83-32-9	Acenaphthene	< 9050	D	µg/kg dry	9050	2300	50	SW846 8270D	15-Aug-13	19-Aug-13	JG	1319560	X
208-96-8	Acenaphthylene	**12,300**	D	µg/kg dry	9050	2510	50	"	"	"	"	"	X
120-12-7	Anthracene	**19,400**	D	µg/kg dry	9050	2310	50	"	"	"	"	"	X
56-55-3	Benzo (a) anthracene	**28,600**	D	µg/kg dry	9050	2420	50	"	"	"	"	"	X
50-32-8	Benzo (a) pyrene	**27,300**	D	µg/kg dry	9050	2460	50	"	"	"	"	"	X
205-99-2	Benzo (b) fluoranthene	**25,500**	D	µg/kg dry	9050	1960	50	"	"	"	"	"	X
191-24-2	Benzo (g,h,i) perylene	**19,300**	D	µg/kg dry	9050	2520	50	"	"	"	"	"	X
207-08-9	Benzo (k) fluoranthene	**21,800**	D	µg/kg dry	9050	3200	50	"	"	"	"	"	X
218-01-9	Chrysene	**26,600**	D	µg/kg dry	9050	2550	50	"	"	"	"	"	X
53-70-3	Dibenzo (a,h) anthracene	< 9050	D	µg/kg dry	9050	2340	50	"	"	"	"	"	X
206-44-0	Fluoranthene	**117,000**	D	µg/kg dry	9050	2530	50	"	"	"	"	"	X
86-73-7	Fluorene	**9,920**	D	µg/kg dry	9050	2510	50	"	"	"	"	"	X
193-39-5	Indeno (1,2,3-cd) pyrene	**18,900**	D	µg/kg dry	9050	2510	50	"	"	"	"	"	X
90-12-0	1-Methylnaphthalene	< 9050	D	µg/kg dry	9050	2670	50	"	"	"	"	"	
91-57-6	2-Methylnaphthalene	< 9050	D	µg/kg dry	9050	2580	50	"	"	"	"	"	X
91-20-3	Naphthalene	**9,100**	D	µg/kg dry	9050	2520	50	"	"	"	"	"	X
85-01-8	Phenanthrene	**93,200**	D	µg/kg dry	9050	2410	50	"	"	"	"	"	X
129-00-0	Pyrene	**96,300**	D	µg/kg dry	9050	2190	50	"	"	"	"	"	X
Surrogate recoveries:													
321-60-8	*2-Fluorobiphenyl*	*0*	S01		*30-130 %*			"	"	"	"	"	
1718-51-0	*Terphenyl-dl4*	*0*	S01		*30-130 %*			"	"	"	"	"	
Semivolatile Organic Compounds by GC													
Polychlorinated Biphenyls													
Prepared by method SW846 3545A													
12674-11-2	Aroclor-1016	< 21.2		µg/kg dry	21.2	15.8	1	SW846 8082A	15-Aug-13	19-Aug-13	IMR	1319562	X
11104-28-2	Aroclor-1221	< 21.2		µg/kg dry	21.2	19.1	1	"	"	"	"	"	X
11141-16-5	Aroclor-1232	< 21.2		µg/kg dry	21.2	13.6	1	"	"	"	"	"	X
53469-21-9	Aroclor-1242	< 21.2		µg/kg dry	21.2	12.7	1	"	"	"	"	"	X
12672-29-6	Aroclor-1248	< 21.2		µg/kg dry	21.2	11.0	1	"	"	"	"	"	X
11097-69-1	Aroclor-1254	< 21.2		µg/kg dry	21.2	17.6	1	"	"	"	"	"	X
11096-82-5	Aroclor-1260	< 21.2		µg/kg dry	21.2	13.1	1	"	"	"	"	"	X
37324-23-5	Aroclor-1262	< 21.2		µg/kg dry	21.2	19.7	1	"	"	"	"	"	X
11100-14-4	Aroclor-1268	< 21.2		µg/kg dry	21.2	8.73	1	"	"	"	"	"	X
Surrogate recoveries:													
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*70*			*30-150 %*			"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*70*			*30-150 %*			"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr)*	*175*	S02		*30-150 %*			"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr) [2C]*	*65*			*30-150 %*			"	"	"	"	"	
Extractable Petroleum Hydrocarbons													
Extractable Total Petroleum Hydrocarbons			R01										
Prepared by method SW846 3550C													
8006-61-9	Gasoline	< 57.3	D	mg/kg dry	57.3	2.9	2	CT ETPH	15-Aug-13	17-Aug-13	SEP	1319563	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
B-3 (4-6) SB74697-09	13.104/002	Soil	07-Aug-13 09:55	08-Aug-13

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Extractable Petroleum Hydrocarbons													
Extractable Total Petroleum Hydrocarbons Prepared by method SW846 3550C			R01										
68476-30-2	Fuel Oil #2	< 57.3	D	mg/kg dry	57.3	5.7	2	CT ETPH	15-Aug-13	17-Aug-13	SEP	1319563	
68476-31-3	Fuel Oil #4	< 57.3	D	mg/kg dry	57.3	5.7	2	"	"	"	"	"	
68553-00-4	Fuel Oil #6	< 57.3	D	mg/kg dry	57.3	14.3	2	"	"	"	"	"	
M09800000	Motor Oil	< 57.3	D	mg/kg dry	57.3	5.7	2	"	"	"	"	"	
J00100000	Aviation Fuel	< 57.3	D	mg/kg dry	57.3	14.3	2	"	"	"	"	"	
	Unidentified	**1,020**	D	mg/kg dry	57.3	14.3	2	"	"	"	"	"	
	Other Oil	**Calculated as**		mg/kg dry	57.3	5.7	2	"	"	"	"	"	
	Total Petroleum Hydrocarbons	**1,020**	D	mg/kg dry	57.3	5.7	2	"	"	"	"	"	
	C9-C36 Aliphatic Hydrocarbons	**1,020**	D	mg/kg dry	57.3	5.3	2	"	"	"	"	"	
Surrogate recoveries:													
3386-33-2	*1-Chlorooctadecane*	*151*	S02		*50-150 %*			"	"	"	"	"	
Total Metals by EPA 6000/7000 Series Methods													
7440-38-2	Arsenic	**5.35**		mg/kg dry	1.53	0.669	1	SW846 6010C	16-Aug-13	20-Aug-13	EDT	1319713	X
7439-92-1	Lead	**428**		mg/kg dry	1.53	0.565	1	"	"	"	"	"	X
General Chemistry Parameters													
	% Solids	**92.0**		%			1	SM2540 G Mod.	12-Aug-13	12-Aug-13	DT	1319178	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
B-5 (0-2)	13.104/002	Soil	07-Aug-13 10:35	08-Aug-13
SB74697-10				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolatile Organic Compounds by GCMS													
PAHs by SW846 8270			GS1										
Prepared by method SW846 3545A													
83-32-9	Acenaphthene	< 692	D	µg/kg dry	692	176	4	SW846 8270D	15-Aug-13	19-Aug-13	JG	1319560	X
208-96-8	Acenaphthylene	< 692	D	µg/kg dry	692	192	4	"	"	"	"	"	X
120-12-7	Anthracene	< 692	D	µg/kg dry	692	176	4	"	"	"	"	"	X
56-55-3	Benzo (a) anthracene	**2,860**	D	µg/kg dry	692	185	4	"	"	"	"	"	X
50-32-8	Benzo (a) pyrene	**3,170**	D	µg/kg dry	692	188	4	"	"	"	"	"	X
205-99-2	Benzo (b) fluoranthene	**3,620**	D	µg/kg dry	692	150	4	"	"	"	"	"	X
191-24-2	Benzo (g,h,i) perylene	**1,340**	D	µg/kg dry	692	192	4	"	"	"	"	"	X
207-08-9	Benzo (k) fluoranthene	**2,320**	D	µg/kg dry	692	245	4	"	"	"	"	"	X
218-01-9	Chrysene	**3,300**	D	µg/kg dry	692	195	4	"	"	"	"	"	X
53-70-3	Dibenzo (a,h) anthracene	< 692	D	µg/kg dry	692	179	4	"	"	"	"	"	X
206-44-0	Fluoranthene	**7,250**	D	µg/kg dry	692	193	4	"	"	"	"	"	X
86-73-7	Fluorene	< 692	D	µg/kg dry	692	192	4	"	"	"	"	"	X
193-39-5	Indeno (1,2,3-cd) pyrene	**1,630**	D	µg/kg dry	692	192	4	"	"	"	"	"	X
90-12-0	1-Methylnaphthalene	< 692	D	µg/kg dry	692	204	4	"	"	"	"	"	
91-57-6	2-Methylnaphthalene	< 692	D	µg/kg dry	692	197	4	"	"	"	"	"	X
91-20-3	Naphthalene	< 692	D	µg/kg dry	692	193	4	"	"	"	"	"	X
85-01-8	Phenanthrene	**3,390**	D	µg/kg dry	692	184	4	"	"	"	"	"	X
129-00-0	Pyrene	**6,950**	D	µg/kg dry	692	167	4	"	"	"	"	"	X
Surrogate recoveries:													
321-60-8	*2-Fluorobiphenyl*	*70*			*30-130 %*			"	"	"	"	"	
1718-51-0	*Terphenyl-dl4*	*110*			*30-130 %*			"	"	"	"	"	
Semivolatile Organic Compounds by GC													
Polychlorinated Biphenyls													
Prepared by method SW846 3545A													
12674-11-2	Aroclor-1016	< 20.8		µg/kg dry	20.8	15.5	1	SW846 8082A	15-Aug-13	19-Aug-13	IMR	1319562	X
11104-28-2	Aroclor-1221	< 20.8		µg/kg dry	20.8	18.7	1	"	"	"	"	"	X
11141-16-5	Aroclor-1232	< 20.8		µg/kg dry	20.8	13.4	1	"	"	"	"	"	X
53469-21-9	Aroclor-1242	< 20.8		µg/kg dry	20.8	12.5	1	"	"	"	"	"	X
12672-29-6	Aroclor-1248	< 20.8		µg/kg dry	20.8	10.8	1	"	"	"	"	"	X
11097-69-1	Aroclor-1254	< 20.8		µg/kg dry	20.8	17.3	1	"	"	"	"	"	X
11096-82-5	Aroclor-1260	**23.9**		µg/kg dry	20.8	12.9	1	"	"	"	"	"	X
37324-23-5	Aroclor-1262	< 20.8		µg/kg dry	20.8	19.4	1	"	"	"	"	"	X
11100-14-4	Aroclor-1268	< 20.8		µg/kg dry	20.8	8.58	1	"	"	"	"	"	X
Surrogate recoveries:													
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*80*			*30-150 %*			"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*85*			*30-150 %*			"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr)*	*120*			*30-150 %*			"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr) [2C]*	*85*			*30-150 %*			"	"	"	"	"	
Extractable Petroleum Hydrocarbons													
Extractable Total Petroleum Hydrocarbons													
Prepared by method SW846 3550C													
8006-61-9	Gasoline	< 27.0		mg/kg dry	27.0	1.4	1	CT ETPH	15-Aug-13	17-Aug-13	SEP	1319563	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
B-5 (0-2) SB74697-10	13.104/002	Soil	07-Aug-13 10:35	08-Aug-13

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Extractable Petroleum Hydrocarbons													
Extractable Total Petroleum Hydrocarbons Prepared by method SW846 3550C													
68476-30-2	Fuel Oil #2	< 27.0		mg/kg dry	27.0	2.7	1	CT ETPH	15-Aug-13	17-Aug-13	SEP	1319563	
68476-31-3	Fuel Oil #4	< 27.0		mg/kg dry	27.0	2.7	1	"	"	"	"	"	
68553-00-4	Fuel Oil #6	< 27.0		mg/kg dry	27.0	6.8	1	"	"	"	"	"	
M09800000	Motor Oil	< 27.0		mg/kg dry	27.0	2.7	1	"	"	"	"	"	
J00100000	Aviation Fuel	< 27.0		mg/kg dry	27.0	6.8	1	"	"	"	"	"	
	Unidentified	**203**		mg/kg dry	27.0	6.8	1	"	"	"	"	"	
	Other Oil	**Calculated as**		mg/kg dry	27.0	2.7	1	"	"	"	"	"	
	Total Petroleum Hydrocarbons	**203**		mg/kg dry	27.0	2.7	1	"	"	"	"	"	
	C9-C36 Aliphatic Hydrocarbons	**203**		mg/kg dry	27.0	2.5	1	"	"	"	"	"	
Surrogate recoveries:													
3386-33-2	*1-Chlorooctadecane*	*69*			*50-150 %*			"	"	"	"	"	
Total Metals by EPA 6000/7000 Series Methods													
7440-38-2	Arsenic	**4.94**		mg/kg dry	1.54	0.671	1	SW846 6010C	16-Aug-13	20-Aug-13	EDT	1319713	X
7439-92-1	Lead	**221**		mg/kg dry	1.54	0.568	1	"	"	"	"	"	X
General Chemistry Parameters													
	% Solids	**95.9**		%			1	SM2540 G Mod.	12-Aug-13	12-Aug-13	DT	1319178	

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1319560 - SW846 3545A										
Blank (1319560-BLK1)						Prepared: 15-Aug-13 Analyzed: 16-Aug-13				
Acenaphthene	< 167		µg/kg wet	167						
Acenaphthylene	< 167		µg/kg wet	167						
Anthracene	< 167		µg/kg wet	167						
Benzo (a) anthracene	< 167		µg/kg wet	167						
Benzo (a) pyrene	< 167		µg/kg wet	167						
Benzo (b) fluoranthene	< 167		µg/kg wet	167						
Benzo (g,h,i) perylene	< 167		µg/kg wet	167						
Benzo (k) fluoranthene	< 167		µg/kg wet	167						
Chrysene	< 167		µg/kg wet	167						
Dibenzo (a,h) anthracene	< 167		µg/kg wet	167						
Fluoranthene	< 167		µg/kg wet	167						
Fluorene	< 167		µg/kg wet	167						
Indeno (1,2,3-cd) pyrene	< 167		µg/kg wet	167						
1-Methylnaphthalene	< 167		µg/kg wet	167						
2-Methylnaphthalene	< 167		µg/kg wet	167						
Naphthalene	< 167		µg/kg wet	167						
Phenanthrene	< 167		µg/kg wet	167						
Pyrene	< 167		µg/kg wet	167						
Surrogate: 2-Fluorobiphenyl	*1830*		µg/kg wet		*1670*		*110*	*30-130*		
Surrogate: Terphenyl-dl4	*1870*		µg/kg wet		*1670*		*112*	*30-130*		
LCS (1319560-BS1)						Prepared & Analyzed: 15-Aug-13				
Acenaphthene	**1700**		µg/kg wet	167	1670		102	40-140		
Acenaphthylene	**1810**		µg/kg wet	167	1670		109	40-140		
Anthracene	**1750**		µg/kg wet	167	1670		105	40-140		
Benzo (a) anthracene	**1720**		µg/kg wet	167	1670		103	40-140		
Benzo (a) pyrene	**1740**		µg/kg wet	167	1670		104	40-140		
Benzo (b) fluoranthene	**1630**		µg/kg wet	167	1670		98	40-140		
Benzo (g,h,i) perylene	**1460**		µg/kg wet	167	1670		88	40-140		
Benzo (k) fluoranthene	**1680**		µg/kg wet	167	1670		101	40-140		
Chrysene	**1690**		µg/kg wet	167	1670		101	40-140		
Dibenzo (a,h) anthracene	**1530**		µg/kg wet	167	1670		92	40-140		
Fluoranthene	**1720**		µg/kg wet	167	1670		103	40-140		
Fluorene	**1730**		µg/kg wet	167	1670		104	40-140		
Indeno (1,2,3-cd) pyrene	**1580**		µg/kg wet	167	1670		95	40-140		
1-Methylnaphthalene	**1550**		µg/kg wet	167	1670		93	40-140		
2-Methylnaphthalene	**1770**		µg/kg wet	167	1670		106	40-140		
Naphthalene	**1690**		µg/kg wet	167	1670		101	40-140		
Phenanthrene	**1690**		µg/kg wet	167	1670		102	40-140		
Pyrene	**1830**		µg/kg wet	167	1670		110	40-140		
Surrogate: 2-Fluorobiphenyl	*1550*		µg/kg wet		*1670*		*93*	*30-130*		
Surrogate: Terphenyl-dl4	*1700*		µg/kg wet		*1670*		*102*	*30-130*		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1319562 - SW846 3545A										
Blank (1319562-BLK1)					Prepared: 15-Aug-13 Analyzed: 18-Aug-13					
Aroclor-1016	< 20.0		µg/kg wet	20.0						
Aroclor-1016 [2C]	< 20.0		µg/kg wet	20.0						
Aroclor-1221	< 20.0		µg/kg wet	20.0						
Aroclor-1221 [2C]	< 20.0		µg/kg wet	20.0						
Aroclor-1232	< 20.0		µg/kg wet	20.0						
Aroclor-1232 [2C]	< 20.0		µg/kg wet	20.0						
Aroclor-1242	< 20.0		µg/kg wet	20.0						
Aroclor-1242 [2C]	< 20.0		µg/kg wet	20.0						
Aroclor-1248	< 20.0		µg/kg wet	20.0						
Aroclor-1248 [2C]	< 20.0		µg/kg wet	20.0						
Aroclor-1254	< 20.0		µg/kg wet	20.0						
Aroclor-1254 [2C]	< 20.0		µg/kg wet	20.0						
Aroclor-1260	< 20.0		µg/kg wet	20.0						
Aroclor-1260 [2C]	< 20.0		µg/kg wet	20.0						
Aroclor-1262	< 20.0		µg/kg wet	20.0						
Aroclor-1262 [2C]	< 20.0		µg/kg wet	20.0						
Aroclor-1268	< 20.0		µg/kg wet	20.0						
Aroclor-1268 [2C]	< 20.0		µg/kg wet	20.0						
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*16.0*		µg/kg wet		*20.0*		*80*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*16.0*		µg/kg wet		*20.0*		*80*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*17.0*		µg/kg wet		*20.0*		*85*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*14.0*		µg/kg wet		*20.0*		*70*	*30-150*		
LCS (1319562-BS1)					Prepared: 15-Aug-13 Analyzed: 18-Aug-13					
Aroclor-1016	**245**		µg/kg wet	20.0	250		98	40-140		
Aroclor-1016 [2C]	**239**		µg/kg wet	20.0	250		96	40-140		
Aroclor-1260	**217**		µg/kg wet	20.0	250		87	40-140		
Aroclor-1260 [2C]	**218**		µg/kg wet	20.0	250		87	40-140		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*21.0*		µg/kg wet		*20.0*		*105*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*22.0*		µg/kg wet		*20.0*		*110*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*24.0*		µg/kg wet		*20.0*		*120*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*22.0*		µg/kg wet		*20.0*		*110*	*30-150*		
LCS Dup (1319562-BSD1)					Prepared: 15-Aug-13 Analyzed: 18-Aug-13					
Aroclor-1016	**245**		µg/kg wet	20.0	250		98	40-140	0	30
Aroclor-1016 [2C]	**249**		µg/kg wet	20.0	250		100	40-140	4	30
Aroclor-1260	**222**		µg/kg wet	20.0	250		89	40-140	2	30
Aroclor-1260 [2C]	**230**		µg/kg wet	20.0	250		92	40-140	5	30
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*22.0*		µg/kg wet		*20.0*		*110*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*22.0*		µg/kg wet		*20.0*		*110*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*25.0*		µg/kg wet		*20.0*		*125*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*22.0*		µg/kg wet		*20.0*		*110*	*30-150*		
Duplicate (1319562-DUP1)			**Source: SB74697-01**		Prepared: 15-Aug-13 Analyzed: 19-Aug-13					
Aroclor-1016	< 21.4		µg/kg dry	21.4		BRL				30
Aroclor-1016 [2C]	< 21.4		µg/kg dry	21.4		BRL				30
Aroclor-1221	< 21.4		µg/kg dry	21.4		BRL				30
Aroclor-1221 [2C]	< 21.4		µg/kg dry	21.4		BRL				30
Aroclor-1232	< 21.4		µg/kg dry	21.4		BRL				30
Aroclor-1232 [2C]	< 21.4		µg/kg dry	21.4		BRL				30
Aroclor-1242	< 21.4		µg/kg dry	21.4		BRL				30
Aroclor-1242 [2C]	< 21.4		µg/kg dry	21.4		BRL				30
Aroclor-1248	< 21.4		µg/kg dry	21.4		BRL				30

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1319562 - SW846 3545A										
Duplicate (1319562-DUP1)			**Source: SB74697-01**			Prepared: 15-Aug-13 Analyzed: 19-Aug-13				
Aroclor-1248 [2C]	< 21.4		µg/kg dry	21.4		BRL				30
Aroclor-1254	< 21.4		µg/kg dry	21.4		BRL				30
Aroclor-1254 [2C]	< 21.4		µg/kg dry	21.4		BRL				30
Aroclor-1260	< 21.4		µg/kg dry	21.4		BRL				30
Aroclor-1260 [2C]	< 21.4		µg/kg dry	21.4		BRL				30
Aroclor-1262	< 21.4		µg/kg dry	21.4		BRL				30
Aroclor-1262 [2C]	< 21.4		µg/kg dry	21.4		BRL				30
Aroclor-1268	< 21.4		µg/kg dry	21.4		BRL				30
Aroclor-1268 [2C]	< 21.4		µg/kg dry	21.4		BRL				30
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*13.9*		µg/kg dry		*21.4*		*65*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*20.4*		µg/kg dry		*21.4*		*95*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*33.2*	S02	µg/kg dry		*21.4*		*155*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*19.3*		µg/kg dry		*21.4*		*90*	*30-150*		
Matrix Spike (1319562-MS1)			**Source: SB74697-01**			Prepared: 15-Aug-13 Analyzed: 19-Aug-13				
Aroclor-1016	**217**		µg/kg dry	21.6	270	BRL	80	40-140		
Aroclor-1016 [2C]	**191**		µg/kg dry	21.6	270	BRL	71	40-140		
Aroclor-1260	**186**		µg/kg dry	21.6	270	BRL	69	40-140		
Aroclor-1260 [2C]	**191**		µg/kg dry	21.6	270	BRL	71	40-140		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*17.3*		µg/kg dry		*21.6*		*80*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*21.6*		µg/kg dry		*21.6*		*100*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*40.0*	S02	µg/kg dry		*21.6*		*185*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*23.8*		µg/kg dry		*21.6*		*110*	*30-150*		
Matrix Spike Dup (1319562-MSD1)			**Source: SB74697-01**			Prepared: 15-Aug-13 Analyzed: 19-Aug-13				
Aroclor-1016	**243**		µg/kg dry	21.5	268	BRL	90	40-140	12	30
Aroclor-1016 [2C]	**193**		µg/kg dry	21.5	268	BRL	72	40-140	2	30
Aroclor-1260	**228**		µg/kg dry	21.5	268	BRL	85	40-140	21	30
Aroclor-1260 [2C]	**189**		µg/kg dry	21.5	268	BRL	70	40-140	0.6	30
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*21.5*		µg/kg dry		*21.5*		*100*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*17.2*		µg/kg dry		*21.5*		*80*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*44.0*	S02	µg/kg dry		*21.5*		*205*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*30.1*		µg/kg dry		*21.5*		*140*	*30-150*		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1319563 - SW846 3550C										
Blank (1319563-BLK1)					Prepared & Analyzed: 15-Aug-13					
Gasoline	< 26.6		mg/kg wet	26.6						
Fuel Oil #2	< 26.6		mg/kg wet	26.6						
Fuel Oil #4	< 26.6		mg/kg wet	26.6						
Fuel Oil #6	< 26.6		mg/kg wet	26.6						
Motor Oil	< 26.6		mg/kg wet	26.6						
Aviation Fuel	< 26.6		mg/kg wet	26.6						
Unidentified	< 26.6		mg/kg wet	26.6						
Other Oil	< 26.6		mg/kg wet	26.6						
Total Petroleum Hydrocarbons	< 26.6		mg/kg wet	26.6						
C9-C36 Aliphatic Hydrocarbons	< 26.6		mg/kg wet	26.6						
n-Nonadecane	< 0.005		mg/kg wet	0.005						
n-Nonane	< 0.005		mg/kg wet	0.005						
n-Decane	< 0.005		mg/kg wet	0.005						
n-Dodecane	< 0.005		mg/kg wet	0.005						
n-Tetradecane	< 0.005		mg/kg wet	0.005						
n-Hexadecane	< 0.005		mg/kg wet	0.005						
n-Octadecane	< 0.005		mg/kg wet	0.005						
n-Eicosane	< 0.005		mg/kg wet	0.005						
n-Docosane	< 0.005		mg/kg wet	0.005						
n-Tetracosane	< 0.005		mg/kg wet	0.005						
n-Hexacosane	< 0.005		mg/kg wet	0.005						
n-Octacosane	< 0.005		mg/kg wet	0.005						
n-Triacontane	< 0.005		mg/kg wet	0.005						
n-Hexatriacontane	< 0.005		mg/kg wet	0.005						
Surrogate: 1-Chlorooctadecane	*2.33*		mg/kg wet		*3.33*		*70*	*50-150*		
LCS (1319563-BS1)					Prepared & Analyzed: 15-Aug-13					
C9-C36 Aliphatic Hydrocarbons	**76.3**		mg/kg wet	26.6	93.3		82	60-120		
Surrogate: 1-Chlorooctadecane	*2.56*		mg/kg wet		*3.33*		*77*	*50-150*		
Duplicate (1319563-DUP1)		R01	**Source: SB74697-05**		Prepared: 15-Aug-13		Analyzed: 17-Aug-13			
Gasoline	< 153	D	mg/kg dry	153		BRL				50
Fuel Oil #2	< 153	D	mg/kg dry	153		BRL				50
Fuel Oil #4	< 153	D	mg/kg dry	153		BRL				50
Fuel Oil #6	< 153	D	mg/kg dry	153		BRL				50
Motor Oil	< 153	D	mg/kg dry	153		BRL				50
Aviation Fuel	< 153	D	mg/kg dry	153		BRL				50
Unidentified	**529**	D	mg/kg dry	153		500			6	50
Other Oil	**Calculated as**		mg/kg dry	153		Calculated as				50
Total Petroleum Hydrocarbons	**529**	D	mg/kg dry	153		500			6	50
C9-C36 Aliphatic Hydrocarbons	**529**	D	mg/kg dry	153		500			6	50
Surrogate: 1-Chlorooctadecane	*2.21*		mg/kg dry		*3.83*		*58*	*50-150*		
Matrix Spike (1319563-MS1)		R01	**Source: SB74697-05**		Prepared: 15-Aug-13		Analyzed: 17-Aug-13			
C9-C36 Aliphatic Hydrocarbons	**622**	D	mg/kg dry	153	107	500	113	50-150		
Surrogate: 1-Chlorooctadecane	*2.08*		mg/kg dry		*3.83*		*54*	*50-150*		
Matrix Spike Dup (1319563-MSD1)		R01	**Source: SB74697-05**		Prepared: 15-Aug-13		Analyzed: 17-Aug-13			
C9-C36 Aliphatic Hydrocarbons	**532**	QM7, QR5, D	mg/kg dry	152	107	500	30	50-150	117	30
Surrogate: 1-Chlorooctadecane	*2.06*		mg/kg dry		*3.80*		*54*	*50-150*		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1319713 - SW846 3050B										
Blank (1319713-BLK1)					Prepared: 16-Aug-13 Analyzed: 20-Aug-13					
Arsenic	< 1.48		mg/kg wet	1.48						
Lead	< 1.48		mg/kg wet	1.48						
Duplicate (1319713-DUP1)			**Source: SB74697-05**		Prepared: 16-Aug-13 Analyzed: 20-Aug-13					
Arsenic	**4.87**		mg/kg dry	1.58		4.92			0.9	20
Lead	**61.5**		mg/kg dry	1.58		61.0			0.7	20
Matrix Spike (1319713-MS1)			**Source: SB74697-05**		Prepared: 16-Aug-13 Analyzed: 20-Aug-13					
Lead	**170**		mg/kg dry	1.67	139	61.0	78	75-125		
Arsenic	**115**		mg/kg dry	1.67	139	4.92	79	75-125		
Matrix Spike Dup (1319713-MSD1)			**Source: SB74697-05**		Prepared: 16-Aug-13 Analyzed: 20-Aug-13					
Lead	**173**		mg/kg dry	1.66	138	61.0	81	75-125	1	20
Arsenic	**115**		mg/kg dry	1.66	138	4.92	80	75-125	0.2	20
Post Spike (1319713-PS1)			**Source: SB74697-05**		Prepared: 16-Aug-13 Analyzed: 20-Aug-13					
Lead	**178**		mg/kg dry	1.63	136	61.0	86	80-120		
Arsenic	**126**		mg/kg dry	1.63	136	4.92	89	80-120		
Reference (1319713-SRM1)					Prepared: 16-Aug-13 Analyzed: 20-Aug-13					
Arsenic	**34.5**		mg/kg wet	1.50	38.6		89	82.97-117.58		
Lead	**26.6**		mg/kg wet	1.50	28.8		92	83.82-116.91		
Reference (1319713-SRM2)					Prepared: 16-Aug-13 Analyzed: 20-Aug-13					
Lead	**28.2**		mg/kg wet	1.50	28.9		97	83.82-116.91		
Arsenic	**36.5**		mg/kg wet	1.50	38.7		94	82.97-117.58		

Extractable Petroleum Hydrocarbons - CCV Evaluation Report

Analyte(s)	Average RF	CCRF	% D	Limit
Batch S304818				
Initial Cal Check (S304818-ICV1)				
C9-C36 Aliphatic Hydrocarbons	6.238149E+08	4.270728E+08	-2.8	30
n-Nonadecane	3.561546E+08	3.675153E+08	3.2	30
n-Nonane	3.732875E+08	3.681448E+08	-1.4	30
n-Decane	3.651436E+08	3.651315E+08	-0.003	30
n-Dodecane	3.48398E+08	3.592906E+08	3.1	30
n-Tetradecane	3.588449E+08	3.665299E+08	2.1	30
n-Hexadecane	3.756608E+08	3.74015E+08	-0.4	30
n-Octadecane	3.775606E+08	3.791863E+08	0.4	30
n-Eicosane	3.825055E+08	3.811256E+08	-0.4	30
n-Docosane	3.815533E+08	3.84155E+08	0.7	30
n-Tetracosane	3.82641E+08	3.839073E+08	0.3	30
n-Hexacosane	3.864596E+08	3.855051E+08	-0.2	30
n-Octacosane	3.839113E+08	3.752925E+08	-2.2	30
n-Triacontane	3.841358E+08	3.849129E+08	0.2	30
n-Hexatriacontane	3.752619E+08	3.758944E+08	0.2	30

Extractable Petroleum Hydrocarbons - CCV Evaluation Report

Analyte(s)	Average RF	CCRF	% D	Limit
Batch S306464				
Initial Cal Check (S306464-ICV1)				
C9-C36 Aliphatic Hydrocarbons	4.461755E+08	3.595381E+08	3.0	30
n-Nonadecane	3.353948E+08	3.37716E+08	0.7	30
n-Nonane	3.350168E+08	3.313795E+08	-1.1	30
n-Decane	3.360605E+08	3.337294E+08	-0.7	30
n-Dodecane	3.365143E+08	3.362975E+08	-0.06	30
n-Tetradecane	3.376027E+08	3.356885E+08	-0.6	30
n-Hexadecane	3.442821E+08	3.382331E+08	-1.8	30
n-Octadecane	3.391093E+08	3.381322E+08	-0.3	30
n-Eicosane	3.378662E+08	3.365021E+08	-0.4	30
n-Docosane	3.35257E+08	3.381542E+08	0.9	30
n-Tetracosane	3.322211E+08	3.365853E+08	1.3	30
n-Hexacosane	3.327109E+08	3.358834E+08	1.0	30
n-Octacosane	3.278913E+08	3.249442E+08	-0.9	30
n-Triacontane	3.256576E+08	3.32436E+08	2.1	30
n-Hexatriacontane	3.14041E+08	3.184885E+08	1.4	30

Analyte(s)	Average RF	CCRF	% D	Limit
Batch S309788				
Calibration Check (S309788-CCV2)				
C9-C36 Aliphatic Hydrocarbons	4.461755E+08	3.438995E+08	-2.2	30
n-Nonadecane	3.353948E+08	2.799328E+08	-16.5	30
n-Nonane	3.350168E+08	2.696507E+08	-19.5	30
n-Decane	3.360605E+08	2.684268E+08	-20.1	30
n-Dodecane	3.365143E+08	2.65785E+08	-21.0	30
n-Tetradecane	3.376027E+08	2.712813E+08	-19.6	30
n-Hexadecane	3.442821E+08	2.771084E+08	-19.5	30
n-Octadecane	3.391093E+08	2.804677E+08	-17.3	30
n-Eicosane	3.378662E+08	2.83061E+08	-16.2	30
n-Docosane	3.35257E+08	2.811796E+08	-16.1	30
n-Tetracosane	3.322211E+08	2.82809E+08	-14.9	30
n-Hexacosane	3.327109E+08	2.863225E+08	-13.9	30
n-Octacosane	3.278913E+08	2.852618E+08	-13.0	30
n-Triacontane	3.256576E+08	2.856801E+08	-12.3	30
n-Hexatriacontane	3.14041E+08	2.853422E+08	-9.1	30

Analyte(s)	Average RF	CCRF	% D	Limit
Batch S309788				
Calibration Check (S309788-CCV4)				
C9-C36 Aliphatic Hydrocarbons	4.461755E+08	3.419276E+08	-2.9	30
n-Nonadecane	3.353948E+08	2.867648E+08	-14.5	30
n-Nonane	3.350168E+08	2.769404E+08	-17.3	30
n-Decane	3.360605E+08	2.7719E+08	-17.5	30
n-Dodecane	3.365143E+08	2.732496E+08	-18.8	30
n-Tetradecane	3.376027E+08	2.77827E+08	-17.7	30
n-Hexadecane	3.442821E+08	2.84501E+08	-17.4	30
n-Octadecane	3.391093E+08	2.873944E+08	-15.3	30
n-Eicosane	3.378662E+08	2.897481E+08	-14.2	30
n-Docosane	3.35257E+08	2.873294E+08	-14.3	30
n-Tetracosane	3.322211E+08	2.891673E+08	-13.0	30
n-Hexacosane	3.327109E+08	2.932899E+08	-11.8	30
n-Octacosane	3.278913E+08	2.930784E+08	-10.6	30
n-Triacontane	3.256576E+08	2.941394E+08	-9.7	30
n-Hexatriacontane	3.14041E+08	2.93917E+08	-6.4	30

Extractable Petroleum Hydrocarbons - CCV Evaluation Report

Analyte(s)	Average RF	CCRF	% D	Limit
Batch S309848				
Calibration Check (S309848-CCV2)				
C9-C36 Aliphatic Hydrocarbons	6.238149E+08	4.120941E+08	-7.1	30
n-Nonadecane	3.561546E+08	3.043914E+08	-14.5	30
n-Nonane	3.732875E+08	2.992127E+08	-19.8	30
n-Decane	3.651436E+08	3.008789E+08	-17.6	30
n-Dodecane	3.48398E+08	2.988991E+08	-14.2	30
n-Tetradecane	3.588449E+08	3.02208E+08	-15.8	30
n-Hexadecane	3.756608E+08	3.050412E+08	-18.8	30
n-Octadecane	3.775606E+08	3.067542E+08	-18.8	30
n-Eicosane	3.825055E+08	3.062027E+08	-19.9	30
n-Docosane	3.815533E+08	3.042496E+08	-20.3	30
n-Tetracosane	3.82641E+08	3.027464E+08	-20.9	30
n-Hexacosane	3.864596E+08	3.029252E+08	-21.6	30
n-Octacosane	3.839113E+08	2.992997E+08	-22.0	30
n-Triacontane	3.841358E+08	2.968836E+08	-22.7	30
n-Hexatriacontane	3.752619E+08	2.97292E+08	-20.8	30

Extractable Petroleum Hydrocarbons - CCV Evaluation Report

Analyte(s)	Average RF	CCRF	% D	Limit
Batch S309848				
Calibration Check (S309848-CCV4)				
C9-C36 Aliphatic Hydrocarbons	6.238149E+08	4.051271E+08	-9.1	30
n-Nonadecane	3.561546E+08	3.108901E+08	-12.7	30
n-Nonane	3.732875E+08	2.906055E+08	-22.1	30
n-Decane	3.651436E+08	2.954703E+08	-19.1	30
n-Dodecane	3.48398E+08	2.944341E+08	-15.5	30
n-Tetradecane	3.588449E+08	3.012488E+08	-16.1	30
n-Hexadecane	3.756608E+08	3.077131E+08	-18.1	30
n-Octadecane	3.775606E+08	3.123888E+08	-17.3	30
n-Eicosane	3.825055E+08	3.140319E+08	-17.9	30
n-Docosane	3.815533E+08	3.125952E+08	-18.1	30
n-Tetracosane	3.82641E+08	3.110542E+08	-18.7	30
n-Hexacosane	3.864596E+08	3.118181E+08	-19.3	30
n-Octacosane	3.839113E+08	3.086045E+08	-19.6	30
n-Triacontane	3.841358E+08	3.10248E+08	-19.2	30
n-Hexatriacontane	3.752619E+08	3.184348E+08	-15.1	30

Extractable Petroleum Hydrocarbons - CCV Evaluation Report

Analyte(s)	Average RF	CCRF	% D	Limit
Batch S309848				
Calibration Check (S309848-CCV6)				
C9-C36 Aliphatic Hydrocarbons	6.238149E+08	4.476631E+08	3.1	30
n-Nonadecane	3.561546E+08	3.254383E+08	-8.6	30
n-Nonane	3.732875E+08	3.059399E+08	-18.0	30
n-Decane	3.651436E+08	3.108184E+08	-14.9	30
n-Dodecane	3.48398E+08	3.105523E+08	-10.9	30
n-Tetradecane	3.588449E+08	3.171172E+08	-11.6	30
n-Hexadecane	3.756608E+08	3.237033E+08	-13.8	30
n-Octadecane	3.775606E+08	3.274405E+08	-13.3	30
n-Eicosane	3.825055E+08	3.28294E+08	-14.2	30
n-Docosane	3.815533E+08	3.267529E+08	-14.4	30
n-Tetracosane	3.82641E+08	3.247866E+08	-15.1	30
n-Hexacosane	3.864596E+08	3.255533E+08	-15.8	30
n-Octacosane	3.839113E+08	3.222075E+08	-16.1	30
n-Triacontane	3.841358E+08	3.229273E+08	-15.9	30
n-Hexatriacontane	3.752619E+08	3.376274E+08	-10.0	30

Extractable Petroleum Hydrocarbons - CCV Evaluation Report

Analyte(s)	Average RF	CCRF	% D	Limit
Batch S309918				
Calibration Check (S309918-CCV2)				
C9-C36 Aliphatic Hydrocarbons	6.238149E+08	4.992642E+08	17.8	30
n-Nonadecane	3.561546E+08	4.469205E+08	25.5	30
n-Nonane	3.732875E+08	4.416265E+08	18.3	30
n-Decane	3.651436E+08	4.437384E+08	21.5	30
n-Dodecane	3.48398E+08	4.403708E+08	26.4	30
n-Tetradecane	3.588449E+08	4.446558E+08	23.9	30
n-Hexadecane	3.756608E+08	4.493236E+08	19.6	30
n-Octadecane	3.775606E+08	4.515216E+08	19.6	30
n-Eicosane	3.825055E+08	4.498621E+08	17.6	30
n-Docosane	3.815533E+08	4.442918E+08	16.4	30
n-Tetracosane	3.82641E+08	4.38197E+08	14.5	30
n-Hexacosane	3.864596E+08	4.377423E+08	13.3	30
n-Octacosane	3.839113E+08	4.317486E+08	12.5	30
n-Triacontane	3.841358E+08	4.296714E+08	11.9	30
n-Hexatriacontane	3.752619E+08	4.174434E+08	11.2	30

Extractable Petroleum Hydrocarbons - CCV Evaluation Report

Analyte(s)	Average RF	CCRF	% D	Limit
Batch S309918				
Calibration Check (S309918-CCV4)				
C9-C36 Aliphatic Hydrocarbons	6.238149E+08	4.276923E+08	-2.6	30
n-Nonadecane	3.561546E+08	3.382362E+08	-5.0	30
n-Nonane	3.732875E+08	3.199135E+08	-14.3	30
n-Decane	3.651436E+08	3.19125E+08	-12.6	30
n-Dodecane	3.48398E+08	3.194722E+08	-8.3	30
n-Tetradecane	3.588449E+08	3.266518E+08	-9.0	30
n-Hexadecane	3.756608E+08	3.347309E+08	-10.9	30
n-Octadecane	3.775606E+08	3.394984E+08	-10.1	30
n-Eicosane	3.825055E+08	3.422976E+08	-10.5	30
n-Docosane	3.815533E+08	3.403606E+08	-10.8	30
n-Tetracosane	3.82641E+08	3.421442E+08	-10.6	30
n-Hexacosane	3.864596E+08	3.45744E+08	-10.5	30
n-Octacosane	3.839113E+08	3.436953E+08	-10.5	30
n-Triacontane	3.841358E+08	3.444917E+08	-10.3	30
n-Hexatriacontane	3.752619E+08	3.34462E+08	-10.9	30

Notes and Definitions

D	Data reported from a dilution
GS1	Sample dilution required for high concentration of target analytes to be within the instrument calibration range.
QM7	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QR5	RPD out of acceptance range.
R01	The Reporting Limit has been raised to account for matrix interference.
S01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference's.
S02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

Interpretation of Total Petroleum Hydrocarbon Report

Petroleum identification is determined by comparing the GC fingerprint obtained from the sample with a library of GC fingerprints obtained from analyses of various petroleum products. Possible match categories are as follows:

Gasoline - includes regular, unleaded, premium, etc.
Fuel Oil #2 - includes home heating oil, #2 fuel oil, and diesel
Fuel Oil #4 - includes #4 fuel oil
Fuel Oil #6 - includes #6 fuel oil and bunker "C" oil
Motor Oil - includes virgin and waste automobile oil
Ligroin - includes mineral spirits, petroleum naphtha, vm&p naphtha
Aviation Fuel - includes kerosene, Jet A and JP-4
Other Oil - includes lubricating and cutting oil, and silicon oil

At times, the unidentified petroleum product is quantified using a calibration that most closely approximates the distribution of compounds in the sample. When this occurs, the result is qualified as Calculated as.

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by:
Nicole Leja
Rebecca Merz

SB74697 OC

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
- ☑ Standard TAT - 7 to 10 business days
- ☐ Rush TAT - Date Needed: _____
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: PAYNE ENVIRONMENTAL LLC
85 WILLOW ST
NEW HAVEN, CT 06511

Telephone #: 203.865.1285 x10
Project Mgr. NEIL PAYNE

Invoice To: GAIL SIMON
(SAME)

* TAX EXEMPT PROJECT
P.O. No.: _____ RQN: 7511

Project No.: 13.104/002
Site Name: RIVERSIDE APTS. NORTH
Location: ANSONIA State: CT
Sampler(s): [signature]

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10= COOL 11= _____

List preservative code below: 10

QA/QC Reporting Notes:
* additional charges may apply

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	CT-ETPH	PAHs (8270)	PCBs	Total As, Pb
74697-01	SS-01 (0-1)	8/7/13	0730	G	SO			1				1	
02	SS-02 (0-1)		0735	G	SO			1				1	
03	SS-03 (0-1)		0740	G	SO			1				1	
04	SS-04 (0-1)		0745	G	SO			1				1	
05	SS-05 (0-1)		0750	G	SO			1		1	1		1
06	SS-06 (0-1)		0755	G	SO			1		1	1		1
07	B-1 (0-3)		0820	G	SO			1		1	1	1	1
08	B-2 (4-6)		0920	G	SO			1		1	1	1	1
09	B-3 (4-6)		0955	G	SO			1		1	1	1	1
10	B-5 (0-2)		1035	G	SO			1		1	1	1	1

Containers: # of VOA Vials, # of Amber Glass, # of Clear Glass, # of Plastic
Analyses: CT-ETPH, PAHs (8270), PCBs, Total As, Pb

MA DEP MCP CAM Report: Yes ☐ No ☐
CT DPH RCP Report: Yes ☑ No ☐

QA/QC Reporting Level
☐ Standard ☐ No QC ☐ DQA*
☐ NY ASP A* ☐ NY ASP B*
☐ NJ Reduced* ☐ NJ Full*
☐ TIER II* ☐ TIER V*
☐ Other _____

State-specific reporting standards:

Relinquished by:	Received by:	Date:	Time:	Temp°C
[signature]	[signature]	8-8-13	1355	
[signature]	JH	8/8/13	1820	

☐ EDD Format _____
☑ E-mail to npayne@payneco rp.com

☐ Ambient ☐ Iced ☑ Refrigerated ☐ Fridge temp ____ °C ☐ Freezer temp ____ °C

LC 10 1/6 IR 07