Final Supplemental Remedial Investigation Report Eighteenmile Creek Superfund Site OU2, Niagara County, New York

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List of Abbreviations and Acronyms

µg/L	micrograms per liter
AMSL	above mean sea level
APE	area of potential effect
AVS/SEM	acid volatile sulfides/simultaneously extracted metals
BERA	Baseline Ecological Risk Assessment
BG	background
BGS	below ground surface
Canal	New York State Erie Canal
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cis-1,2-DCE	cis-1,2-dichloroethene
CLP	Contract Laboratory Procedure
cm/sec	centimeters per second
COPC	contaminants of potential concern
cfs	cubic feet per second
CSM	conceptual site model
DDT	dichlorodinitrophenol
DER	Department of Environmental Remediation
DPT	direct-push technology
E & E	Ecology and Environment Inc.
EDD	electronic data deliverable
EEEPC	Ecology and Environment Engineering, P.C.
EPA	(United States) Environmental Protection Agency
ESA	Environmental Site Assessment
FERC	Federal Energy Regulatory Commission
FS	Feasibility Study
GIS	geographic information system
GLLA	Great Lakes Legacy Act

List of Abbreviations and Acronyms (cont.)

GLNPO	Great Lakes National Program Office
Hartgen	Hartgen Archeological Associates, Inc.
HHRA	human health risk assessment
ID	inner diameter
mg/kg	milligrams per kilogram
NCHD	Niagara County Health Department
NCP	National Contingency Plan
NPL	National Priorities List
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OPRHP	(New York State) Office of Parks, Recreation and Historic Preservation
OSWER	(EPA) Office of Solid Waste and Emergency Response
OU	Operable Unit
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
QAPP	Quality Assurance Project Plan
QC	quality control
RA	reserved area
RI	Remedial Investigation
ROD	Record of Decision
SHPO	State Historic Preservation Office
SI	Site Investigation
SI/RAR	Site Investigation/Remedial Alternatives Report
Site	Eighteenmile Creek Superfund Site Operable Unit 2
SOP	Standard Operating Procedure
SVOC	semivolatile organic compound
TAGM	Technical and Administrative Guidance Memorandum
TAL	Target Analyte List
TCE	trichloroethene
TCL	Target Compound List
TGVA	TGVA Consultants
TOC	total organic carbon
TSC	Tissue Screening Concentration

List of Abbreviations and Acronyms (cont.)

TVGA	TVGA Consultants
UPL	upper prediction limit
USACE	United States Army Corps of Engineers
VOC	volatile organic compound

Executive Summary

Supplemental Remedial Investigations (RIs) were performed in 2014 through 2016 at the Eighteenmile Creek Superfund Site (NYN000206456) (the Site) Operable Unit 2 (OU2) to collect additional data to supplement previous RIs performed at the Site beginning as early as 1987. The purpose of the OU2 supplemental RI was to collect additional data needed to define nature and extent of contamination, develop a complete conceptual model, improve the understanding of the fate and transport of sediment, and assess risk to humans and ecological receptors within the OU2 creek corridor from exposures to fish, soils and sediment, and groundwater. As part of the RI/FS for OU2, a human health risk assessment (HHRA) and baseline ecological risk assessment (BERA) were performed to evaluate risks to human and ecological receptors from exposure to a range of contaminants in various media. The HHRA and BERA reports are provided separately as standalone documents. The results of the HHRA and BERA, in conjunction with the findings of the remedial investigation conducted for OU2, will also be summarized is a separate memorandum that is designed to pull together the results from each RI component to support decisions at the site.

Eighteenmile Creek is located in Niagara County, New York, to the south of Lake Ontario. The main channel of Eighteenmile Creek flows north from the New York State Erie Canal (Canal) for approximately 15 miles and discharges into Lake Ontario in Olcott, New York. The OU2 creek corridor is the part of Eighteenmile Creek that extends from the Canal to Harwood Street in the city of Lockport. The OU2 creek corridor includes the Eighteenmile Creek and the following adjacent upland properties: Former Flintkote Plant Property, Upson Park, White Transportation Property, and the Former United Paperboard Company Property. Eighteenmile Creek is a National Priorities List hazardous waste site under investigation pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund.

New York State Department of Environmental Conservation (NYSDEC) in conjunction with the Niagara County Department of Planning, Development, and Tourism completed a Site Investigation (SI) in July 2005 and Remedial Alternatives Report (RAR) in October 2005 for the Former Flintkote Plant Property site (TVGA 2005a, 2005b). In March 2006, NYSDEC selected a remedy to address the Former Flintkote Plant Property (NYSDEC 2006b). For the Eighteenmile Creek Corridor including the other upland properties, NYSDEC completed an RI in September 2006, a supplemental RI in July 2009, and a feasibility study (FS) in

September 2009 (NYSDEC 2006a; EEEPC 2009a, 2009c). In March 2010, NYSDEC selected a remedy to address the creek corridor from the Canal to Harwood Street and the upland properties Upson Park, White Transportation Property, and the Former United Paperboard Company Property (NYSDEC 2010).

In order to satisfy federal regulations pertaining to selecting a remedy under CERCLA, past studies, site information, and existing analytical data were evaluated to determine the additional data/information needed to complete an RI/FS for OU2. As part of this process, additional data were collected to fill the identified data gaps and prepare the HHRA and BERA for OU2. The additional field investigations to collect this data are described in this supplemental RI report.

The City of Lockport Comprehensive Plan shows the future use of portions of the Site as park land and as a recreational area, including a proposed nature trail. The Comprehensive Plan proposes extension of the Canalway Trail west from the Canal locks and improved fishing access. The City of Lockport Tourism Focus Area Nomination Study shows a similar future use scenario. Therefore, future use scenarios considered the potential for this change in use from undeveloped open space to recreational area(s). The potential use of the Former United Paper and White Transportation properties as Waterfront Mixed Use will be considered as part of the HHRA.

The primary focus of this supplemental RI was to collect the following additional data:

- Additional surface soil data in Upson Park away from the creek banks to understand whether contamination identified along the creek banks extends into the general public use areas of the park area.
- Additional subsurface soils/sediment/fill data beneath the Former Flintkote Plant Property buildings to characterize potential sources of contamination and extent of fill that could not have been sampled previously.
- Investigate the low-level chlorinated volatile organic compounds (VOCs) identified in the groundwater on the west side of the creek near Upson Park, Clinton Street, and Water Street to further characterize the nature and extent of groundwater contamination, including the identification of potential source(s).
- Perform toxicity and bioaccumulation testing to determine whether contaminants (polychlorinated biphenyls [PCBs], metals, pesticides, and polynuclear aromatic hydrocarbons [PAHs]) found in the sediment and soil samples collected from the OU2 creek corridor are bioavailable and associated with unacceptable levels of risk.
- Provide additional data for the full Target Compound List (TCL)/Target Analyte List (TAL) analyses in order to comply with EPA risk assessment guidance and provide assurance that no significant contaminants of potential concern (COPCs) are missed in the RI and risk assessment process.

- Collect fish tissue to assess bioaccumulation exposure pathways for the HHRA and BERA and to determine whether fish tissue levels exceed tissue screening concentrations. The concentrations of COPCs in the tissue of sport fish likely caught and eaten by the local population will be used to assess the bioaccumulation pathway for human health. The concentrations of COPCs in forage fish will be used to access bioaccumulation pathway for piscivorous wildlife.
- Collect analytical data for environmental media in nearby reference or background areas to distinguish site-specific concentrations, exposures and risks from those found in the general western New York environment.

Nature and Extent of Contamination

The Site contains contaminated sediments in the creek and on its banks, contaminated soils adjacent to the creek banks and to a lesser extent on upland areas, and contaminated groundwater beneath the west side of the creek near Upson Park and beneath the Former Flintkote Plant Property. Contaminants in the soils and sediments predominantly include PCBs and heavy metals; and to a lesser extent semivolatile organic compounds (SVOCs) (predominantly PAHs) and pesticides. The predominant contaminants in groundwater include chlorinated VOCs and heavy metals, and PCBs in one well. In general, the source of PAH contamination appears to be related to anthropogenic sources typical of urban and industrial areas. Additional data collected for pesticides and VOCs did not identify any new contaminants or sources and concentrations found are similar to background samples.

The properties along the OU2 creek corridor have areas of high contamination that appear to be related to areas of fill. High levels of lead contamination are found in all fill areas, but PCB contamination was not associated with all of the fill areas. The transport of fill material via erosion and runoff appears to be the primary mechanism for transport of PCBs and lead contamination farther downstream.

Soils

Upson Park. Significant areas of subsurface fill contaminated with lead were identified in Upson Park and one area of high levels of PCBs were found during the NYSDEC RI. However, the NYSDEC 2009 supplemental RI data did not confirm the high levels of PCBs. The fill from Upson Park appears to contribute lead contamination to the creek, as well as PCBs.

Sample results from the Upson Park upland soils collected as part of this OU2 supplemental RI indicate that the upland soils in the area of the park generally accessed by the general public do contain PAHs and metals slightly lower but comparable to historical concentrations, but not PCB contamination. The samples collected in the creek bank within the park contain elevated levels of PAHs and metals, as well as PCBs.

Former Flintkote Plant Property. Surface/subsurface soils/fill samples collected from vaults inside buildings and beneath building foundations, once EPA removed the buildings in 2015, did not identify specific sources of contamination for PCBs or other site-related contaminants. Lower concentrations of PCBs were identified in some areas, thus the potential for contaminant contribution from soil or fill from below the foundations cannot be eliminated at this time.

In summary, subsequent soil/sediment/surface water sampling efforts on the Former Flintkote Plant Property, United Paperboard Company Property and the creek banks of Eighteenmile Creek within OU2 as part of this supplemental RI was performed in an effort to fill the data gaps described above. The result of these field efforts did not identify any PCB, PAH, or metals sources that would impact nature and extent identified in previous investigations except for an area of PCBs delineated near the creek in Upson Park. Soil/sediment/surface water sampling for volatiles and pesticides indicated VOCs and pesticides levels are both very low.

Groundwater

Chlorinated volatile organics were found in the groundwater in several wells on the west side of the creek. Since insufficient data previously existed to identify the potential source of VOC contamination in the groundwater, a groundwater investigation was performed as part of this supplemental RI. Although two wells were planned, only one well was installed (OU2-MW18) due to dry overburden conditions. Supplemental RI sampling of the new well and nearby existing wells indicates that the VOC contamination is not upgradient of contaminated well OU2-MW05, but due to the lack of overburden groundwater upgradient of the other contaminated wells (OU2-MW14 and OU2-MW15), the source of the VOCs is still inconclusive. Findings to date indicate that the creek waters do not contain detectable levels of these VOCs, the creek has been determined to be losing water to groundwater this this area (as opposed to groundwater discharging to the creek). Groundwater is not used for drinking in the area.

Additional groundwater sampling was also attempted on the east side of the creek, adjacent to the creek bank in the vicinity of the Flintkote Property in attempt to locate a source of PCB-contaminated groundwater that may be discharging to the creek adjacent to the Flintkote Property. Although groundwater samples were planned to be collected every 25 feet from 31 hand-driven well-point locations between the creek bank and the toe of the slope along the Flintkote property, only two samples were collected due to the abundant presence of fill material (e.g., bricks and concrete) and tree root causing the equipment to break on each attempt. The two samples were collected in the vicinity of the only OU2 creek corridor well that historically contained PCBs, but no PCBs were detected.

Sediments

Since PCBs, metals, pesticides and PAHs were found in the sediment samples collected from previous investigations in the OU2 creek corridor at concentrations that indicate the potential for both acute and chronic toxicity impacts based on

comparison with screening criteria, bioaccumulation testing was performed. The results of this testing were used to assess exposure pathways for invertivorous terrestrial and aquatic-dependent wildlife. Toxicity testing was performed during supplemental RI activities suggest to determine whether sediment contaminant levels are at concentrations great enough to adversely affect benthic aquatic organisms. Toxicity and results from bioaccumulation testing and determination of site-specific bioaccumulation factors are presented in the BERA (provided under separate cover).

Fish Tissue

Supplemental RI activities included the collection of fish tissue samples from a reference area and the OU2 creek corridor in an effort to compare contaminant levels in fish from the OU2 creek corridor to those from fish in nearby bodies of water. However, fewer fish tissue samples were collected than originally planned due to insufficient numbers of suitable species present for game fish, forage fish, and the number and species of forage fish available for collection varied between areas. Thus, the correlation of fish contaminant levels between the OU2 creek corridor and the designated background has a lower degree of confidence than originally anticipated. Metals, PCBs, and many chlorinated pesticides were found in forage and game fish from OU2 and from the background area. The BERA report (to be provided under separate cover) will compare the forage fish data with ecological screening levels for fish tissue.

The HHRA report (provided under separate cover) compares the fillet data with human health screening levels for fish tissue to select contaminants of potential concern in fish for the HHRA.

Fate and Transport

Contaminant fate and transport in OU2 is well documented in Section 6 of the NYSDEC 2009 supplemental RI report (EEEPC 2009a) and Section 5 of the SI Report for the Former Flintkote Plant Site (TVGA 2005a). Additional data collection activities performed as part of this supplemental RI reinforced the contaminant assessment presented in these previous reports. However, no new contaminant sources or migration pathways were identified through the supplemental RI data collection activities. The following are conclusions regarding fate and transport based on the Supplemental SI activities:

Soils. Since the only response actions were those associated with the 2015 demolition of the Former Flintkote Plant Property buildings, most of the contaminants identified in the Flintkote SI report remain in the subsurface and can therefore migrate off site as described in previous investigations. Potential transport of harmful building materials identified in the Flintkote SI report, such as non-friable asbestos containing materials, were eliminated as part of the building remediation.

Groundwater. An upgradient source of VOCs was not confirmed and contamination appears to be localized to the same wells as previously identified. Based on a hydrogeologic cross-section of the OU2 creek corridor in the vicinity of the

VOC-contaminated monitoring wells, the water table is below the elevation of the creek bottom, therefore, the creek is a losing stream in this area thus contaminated groundwater does not discharge to the creek.

Sediments and Surface Water. Chemical concentrations in the sediment and surface water are consistent with previous investigations. No additional sources or hotspots were identified as part of the supplemental RI sampling and primary assessment of contaminants are the same as previously described. The NYSDEC 2009 supplemental RI report concluded that Canal sediments do not appear to be a significant contributor of PCBs or metals to Eighteenmile Creek in the project area and the likelihood of re-contamination of the creek by the Canal is small.

Fish Tissue. Metals, PCBs, and many chlorinated pesticides were detected in forage and game fish from OU2 and the reference area. This potential contaminant migration pathway is assessed in the HHRA and BERA.

Contaminant Persistence. Contaminant persistence is fully described in Section 6.4 of the NYSDEC 2009 supplemental RI report (EEEPC 2009a). Migration of the PCBs, lead, and other contaminants from OU2 downstream to Lake Ontario is documented in the Great Lakes Legacy Act RI of sediments. A limited number of samples were analyzed for hexavalent chromium, dioxins/furans, and PCB congeners for this OU2 supplemental RI. This sampling confirms there are no sources of these contaminants. Evaluation of the potential contribution to the total risks for these contaminants is assessed qualitatively in the HHRA and BERA.

Data Limitations and Potential Data Gaps

The OU2 supplemental RI data collection activities provided complete data sets to assess risk to human and ecological receptors at the contaminated properties in the OU2 creek corridor for the HHRA and BERA. The OU2 supplemental RI data collection activities also focused on identification of contaminant sources in support of the FS. However, no additional specific sources of contamination were identified. The groundwater investigation did not identify an upgradient source of VOCs; however, contamination appears to be localized to the same wells as previously identified. Samples collected beneath the foundations of the Former Flintkote Plant building did not identify a specific source of contamination for PCBs or other site-related contaminants. Lower concentrations of contaminants found in the samples collected near the foundations do not eliminate the potential for contaminant contribution from soil or fill from below the foundations.

1 Introduction

Supplemental remedial investigations (RIs) were performed in 2014 through 2016 at the Eighteenmile Creek Superfund Site (NYN000206456) (the Site) Operable Unit 2 (OU2) to collect additional data to supplement previous investigations performed at the Site beginning as early as 1987. The purpose of the OU2 supplemental RI was to collect additional data needed to define nature and extent of contamination, develop a complete conceptual model, improve the understanding of the fate and transport of sediment, and assess risk to humans and ecological receptors within the OU2 creek corridor from exposures to fish, soils and sediment, and groundwater. As part of the supplemental RI and feasibility study (FS) for OU2, a human health risk assessment (HHRA) and baseline ecological risk assessment (BERA) were performed to evaluate risks to human and ecological receptors from exposure to a range of contaminants in various media. The HHRA and BERA reports are provided separately as standalone documents. The results of the HHRA and BERA, in conjunction with the findings of the RI conducted for OU2, will also be summarized is a separate memorandum that is designed to pull together the results from each RI component to support decisions at the Site.

1.1 Purpose of the Report

This report for the Eighteenmile Creek Superfund Site OU2 (the Site) was prepared by Ecology and Environment, Inc. (E & E) for the United States Environmental Protection Agency (EPA) under the United States Army Corps of Engineers (USACE) Northwestern Division Contract W912DQ-11-D-3006, Task Order 0009. The purpose of this report is to present additional data collected in 2014 through 2016 to supplement existing Site Investigation (SI) and RI performed at the Site as described in Section 1.4. The existing reports include the following:

- *Final Supplemental Remedial Investigation for the Eighteenmile Creek Corridor Site* (Ecology and Environment Engineering, P.C. [EEEPC] 2009a);
- *Final Additional Investigation Addendum to the Supplemental Remedial Investigation Report for the Eighteenmile Creek Corridor Site* (EEEPC 2009b);
- *Remedial Investigation Report, Eighteenmile Creek Corridor, Lockport, Niagara County, New York* (New York State Department of Environmental Conservation [NYSDEC] 2006a); and

- *Site Investigation Report Site Investigation/Remedial Alternatives Report (SI/RAR), Former Flintkote Site, 198 and 300 Mill Street, City of Lockport, Niagara County, New York* (TVGA Consultants [TGVA] 2005a).

This supplemental RI report supports the FS for OU2 at the Site. The EPA, in cooperation with a group of partner agencies, including the USACE and NYSDEC, completed this supplemental RI/FS to evaluate the need for remedial action in OU2.

The scope of the supplemental RI for OU2 includes collection of data needed to:

- Characterize the nature and extent of contamination;
- Characterize the mechanisms governing long-term fate and transport of Site contaminants;
- Assess the human health and ecological risks posed by contamination; and
- Support the development and evaluation of remedial alternatives in the FFS.

This supplemental RI report was prepared under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), consistent with the National Contingency Plan (NCP) and EPA Office of Solid Waste and Emergency Response (OSWER) RI/FS guidance (EPA 1988).

1.2 Site Overview

Eighteenmile Creek is located in Niagara County, New York, to the south of Lake Ontario (see Figure 1-1). The main channel of Eighteenmile Creek flows north from the New York State Erie Canal (Canal) for approximately 15 miles and discharges into Lake Ontario in Olcott, New York. The Eighteenmile Creek watershed also includes its two main tributaries: the East Branch and Gulf Creek. The Eighteenmile Creek Corridor Site is the part of Eighteenmile Creek that extends from the Canal to Harwood Street in the city of Lockport. The OU2 creek corridor includes the Eighteenmile Creek and adjacent upland properties. Eighteenmile Creek is a National Priorities List (NPL) hazardous waste site under investigation pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund. On September 16, 2011, EPA proposed to place the Site on the NPL and on March 15, 2012, EPA placed the Site final on the NPL.

1.2.1 General Site Description

The EPA has divided Eighteenmile Creek into three separate OUs, as shown in Figure 1-2. OU1 includes contaminated soil at nine residential properties on Water Street in Lockport, New York, and the building at the Former Flintkote Plant Property (former Flintkote Building). The EPA issued a Record of Decision (ROD) for OU1 on September 30, 2013. Pursuant to the OU1 ROD, relocation of residents from five houses on six properties, demolition of the houses and the former Flintkote Building, and off-site disposal of the demolition debris were completed by the EPA in September 2015 (EPA 2013, EPA forthcoming). As

indicated in the OU1 ROD, the portion of the remedial action involving the soil excavation at the nine residential properties will be performed during cleanup of the sediments in the OU2 creek corridor. OU2 comprises a portion of the creek channel (defined by NYSDEC as the Eighteenmile Creek corridor) and adjacent industrial properties, including the Former Flintkote Plant Property, Upson Park, White Transportation, and the Former United Paperboard Company as shown in Figure 1-3. OU3 addresses the Eighteenmile Creek from the north end of the OU2 creek corridor (Harwood Street in Lockport) to the mouth of the Eighteenmile Creek in Olcott, New York, where it discharges into Lake Ontario (see Figure 1-2).

In March 2006, NYSDEC selected a remedy to address the Former Flintkote Plant Property (NYSDEC 2006b). In March 2010, NYSDEC selected a remedy to address the creek corridor, which comprises the Eighteenmile Creek channel from the Canal to Harwood Street and adjacent industrial properties, including Upson Park, White Transportation, and the Former United Paperboard Company (NYSDEC 2010).

In order to satisfy federal regulations pertaining to selecting a remedy under CERCLA, past studies, site information, and existing analytical data were evaluated to determine the additional data/information needed to complete an RI/FS for OU2. The evaluation included the development of a complete conceptual model, understanding the fate and transport of sediment in the Eighteenmile Creek, and assessing risk to humans and ecological receptors at the contaminated properties in the OU2 creek corridor. As part of this process, additional data were collected to fill the identified data gaps and prepare the HHRA and BERA for OU2. The additional field investigations, completed in 2014 to 2016, are described in Section 2 and the results are presented in Section 5 of this supplemental RI report.

1.2.2 Site History

NYSDEC listed a portion of the Former Flintkote Plant Property as a Class 3 site in the Registry of Inactive Hazardous Waste Disposal Sites in New York State in 1983. NYSDEC listed the entire Eighteenmile Creek corridor as a Class 2 site in 2008 (NYSDEC 2010). NYSDEC divided the Eighteenmile Creek corridor into the following six geographic OUs: NYSDEC OU1, Eighteenmile Creek corridor and millrace; NYSDEC OU2, Former Flintkote Plant Property; NYSDEC OU3, Former United Paperboard Company; NYSDEC OU4, Upson Park; NYSDEC OU5, White Transportation; and NYSDEC OU6, Water Street Residential Properties (EEEPC 2009c).

NYSDEC in conjunction with the Niagara County Department of Planning, Development, and Tourism prepared an SI Report in July 2005 and an RAR in October 2005 for the Former Flintkote Plant Property site (TVGA 2005a, 2005b). NYSDEC selected a remedy for the Former Flintkote Plant Property (NYSDEC OU2) in 2006 (NYSDEC 2006b). NYSDEC prepared an RI report, supplemental RI report, and FS report for the remaining portions of the Eighteenmile Creek corridor OUs (NYSDEC 2006a; EEEPC 2009a, 2009c). NYSDEC selected a reme-

dy and issued a ROD for the Eighteenmile Creek corridor (NYSDEC OU1, 3, 4, 5, and 6) in 2010 (NYSDEC 2010).

In addition, in March 2015, EPA Region 5 completed an RI report under the Great Lakes Legacy Act (GLLA) program for the contaminated sediment in the creek channel from the north of the OU2 creek corridor to the mouth of the Eighteenmile Creek at Lake Ontario (i.e., Olcott Harbor) (CH2M Hill, Inc. and EEEPC 2015). The EPA GLLA RI report is relevant to OU2 because all sediment data for both OU2 and OU3 were compiled and evaluated together.

1.3 OU2 Summary of Existing Site Conditions

EPA's OU2 encompasses Eighteenmile Creek from the Canal to Harwood Street and upland properties (see Figure 1-3). EPA's OU2 is divided based on property ownership and the areas described in detail in the NYSDEC RI reports (TVGA 2005a; NYSDEC 2006a; EEEPC 2009a, 2009b). A brief summary of each area of EPA's OU2 is provided below along with a description of current and future land use.

The City of Lockport Comprehensive Plan has been the basis of future use scenarios in all previous studies (Nutter Associates 1998). However, in December 2015, the City of Lockport released the final Tourism Focus Area Nomination Study under the New York State Brownfield Opportunity Area Program. The objective of the nomination study was to identify key properties along Main Street, the Canal, and the Eighteenmile Creek corridor that possess the potential for redevelopment (Bergmann Associates 2015). A comparison of the City of Lockport Future Land Use Concept in the Comprehensive Plan with the Tourism Focus Area Nomination Study, Future Land Use Plan, shows a change in the community vision for the OU2 properties as presented in Table 1-1.

1.3.1 Eighteenmile Creek Channel

The Eighteenmile Creek channel contains contaminated sediments in the creek and its banks. To delineate boundaries between sediment and upland soil within OU2, the bankfull width of the creek was field-delineated by NYSDEC in 2008 (EEEPC 2009b). The bankfull width is commonly known as the width at which water begins to leave the channel and discharge to the floodplain. The Eighteenmile Creek channel outlined in blue on Figure 1-3 represents the bankfull width. The headwaters of Eighteenmile Creek consist of an east and west branch, which begins immediately north of the Canal. The Canal is located at the most upstream portion of the creek and is a potential source of contamination. Water from the Headwater East Branch originates at the spillway on the south side of the Canal, where it is directed northward underneath the Canal and the Mill Street Bridge through a culvert. Water from the Headwater West Branch originates from the dry dock on the north side of the Canal and then flows northward. The Headwater East Branch and West Branch converge just south of Clinton Street in Lockport. The Canal contributes the majority of the flow for the OU2 portion of the Eighteenmile Creek.

The City of Lockport Comprehensive Plan shows the future use of the Eighteenmile Creek channel as parkland and as a recreational area, including a proposed nature trail (Nutter Associates 1998). The Comprehensive Plan proposes extension of the Canalway Trail west from the locks and improved fishing access. The City of Lockport Tourism Focus Area Nomination Study shows a similar future use scenario (Bergmann Associates 2015). Therefore, future use scenarios considered the potential for this change in use from undeveloped open space to recreational area(s). The potential use as Waterfront Mixed Use will be considered as part of the Former United Paper and White Transportation properties.

1.3.2 The Former Flintkote Plant Property

The Former Flintkote Plant Property (198, 225, and 300 Mill Street) in the city of Lockport, Niagara County, New York, is bounded by the Eighteenmile Creek to the west, Mill Street to the east, a commercial property to the north, and vacant land owned by the Former United Paperboard Company to the south (see Figure 1-3). A small portion of the site, however, is located along the western bank of the Eighteenmile Creek and is bounded to the south by the Water Street residential properties. A dam approximately 10 feet high diverts the creek westward for approximately 300 feet along William Street (located on top of the dam). The two sluice gates located at the east end of the dam have been reportedly closed for at least 30 years. A millrace containing a sluggish stream approximately 6 inches to 1 foot deep runs along the west side of the buildings at 300 Mill Street. The section of 300 Mill Street between the Eighteenmile Creek and the millrace is commonly referred to as the Island. The building structure on 300 Mill Street was demolished by the EPA in 2015 (EPA forthcoming).

The City of Lockport currently zones this parcel as heavy industrial (i.e., District I-3). The City of Lockport Comprehensive Plan shows future use of the Flintkote Plant Property as industrial (Nutter Associates 1998). Under the industrial zoning requirements, uses that are incompatible with industry, such as residential properties or daycare centers, are not to be permitted. The City of Lockport Tourism Focus Area Nomination Study shows a future use as open space (Bergmann Associates 2015). Therefore, future use scenarios considered both industrial and open space.

1.3.3 Upson Park

Upson Park is located at 100 Clinton Street in the city of Lockport, Niagara County, New York (see Figure 1-3). Upson Park is bordered by Clinton Street and a residential area to the north, the West Branch of the Eighteenmile Creek and the Canal Authority to the east, the Canal to the south, and a wooded area to the west. The land is currently a town park and contains picnic areas and a walking trail along the Canal. There is a parking area on the site but no standing buildings. The City of Lockport Assessor's Office lists the parcel (Parcel ID 109.10-1-76) as consisting of 5.9 acres of land owned by the City of Lockport.

The City of Lockport currently zones this parcel as reserved area (RA). The purpose of the RA District is to delineate those areas where substantial development

of the land in the form of buildings or structures is prohibited due to various conditions listed in the zoning regulations. Therefore, development of future structures is not anticipated for Upson Park. The City of Lockport Comprehensive Plan shows future use of Upson Park as park land and the area is designated as part of the Erie Canal Tourism Area (Nutter Associates 1998). The park is also listed on the state and national registers of historic places as the Lockport Industrial District (#90NR01975), and the area is deemed to have "archaeological sensitivity" by the State Historic Preservation Office (SHPO) (http://pwa.parks.ny.gov/nr/). The City of Lockport Tourism Focus Area Nomination Study shows a similar future use scenario (Bergmann Associates 2015). Therefore, future use scenarios considered recreational area and maintenance of the area by a worker as the primary future uses.

1.3.4 White Transportation

The White Transportation property is located at 30-40 Mill Street in the city of Lockport, Niagara County, New York (see Figure 1-3). The property is bordered by the Canal to the south, Mill Street to the east, Clinton Street to the north, and the East Branch of the Eighteenmile Creek to the west. No commercial or industrial activities are currently conducted at the Site.

Lockport currently zones this parcel as light industrial (i.e., District I-2). Under the industrial zoning requirements, uses incompatible with industry, such as residential properties or daycare centers are not permitted. The City of Lockport Comprehensive Plan shows the future use of White Transportation as commercial although there are no specific projects designated for this area in the plan (Nutter Associates 1998). Lockport's current zoning requirements do not include zoning for commercial areas. The City of Lockport Tourism Focus Area Nomination Study shows a future use as Waterfront Mixed Use (Bergmann Associates 2015). Therefore, future use scenarios considered both industrial and residential as potential future uses.

1.3.5 The Former United Paperboard Company Property

The Former United Paperboard Company property is located at 62 and 70 Mill Street (see Figure 1-3). Sixty-two Mill Street is the larger of the two parcels and is bordered by Olcott Street to the north, Mill Street to the east, Clinton Street to the south, and Water Street to the west. The property is currently occupied by Duraline Abrasives, Inc., and contains one warehouse building. Seventy Mill Street is a vacant lot with fill material and building ruins and is bordered by the Former Flintkote Plant Property to the north, Mill Street to the east, Olcott Street to the south, and Eighteenmile Creek to the west. The dam located in the creek channel behind the building on 62 Mill Street is called the Clinton Street Dam, and the ponded water behind the dam is commonly referred to as Mill Pond. A storm sewer line also crosses the Eighteenmile Creek approximately 25 to 50 feet downstream of the dam, and several sewer manholes were observed on both banks (east and west) of the creek. The City of Lockport Assessor's Office lists the parcel (Parcel ID 109.10-1-57) as consisting of 3.7 acres and Parcel ID 109.06-3-11 as consisting of 1.2 acres of land owned by Tri-Side LLC.

Lockport currently zones this parcel as heavy industrial (i.e., District I-3). The City of Lockport Comprehensive Plan shows future use of United Paper Board as industrial (Nutter Associates 1998). Under the industrial zoning requirements, uses incompatible with industry, such as residential properties or daycare centers, are not permitted. However, the City of Lockport Tourism Focus Area Nomination Study shows a future uses as Open Space and Waterfront Mixed Use (Bergmann Associates 2015). Therefore, future use scenarios considered both industrial and residential as potential future uses. The area is also deemed to have "archaeological sensitivity" by the SHPO (Hartgen 2015).

1.4 Previous Investigations/Data Summary

1.4.1 Early Sediment Investigations and Water Street

Between 1987 and 1998 NYSDEC collected 10 sediment samples from the Eighteenmile Creek between Remick Parkway south of the Canal and the Former Flintkote Plant Property in the city of Lockport. In 1996 the NYSDEC Department of Environmental Remediation (DER) collected six additional sediment samples from the area between Clinton Street and the Former Flintkote Plant Site. Polychlorinated biphenyls (PCBs) were detected in all 15 samples analyzed. PCB levels in 11 of these samples exceeded NYSDEC's sediment criteria (0.6 milligrams per kilogram [mg/kg]) for chronic toxicity to benthic aquatic life and the NYSDEC's Technical and Administrative Guidance Memorandum (TAGM) No. 4046 surface soil cleanup objective (1.0 mg/kg). PCB concentrations ranged from 0.013 to 25 mg/kg. Lead was detected in all 15 samples analyzed, with concentrations exceeding the sediment criteria (110 mg/kg) for the severe effect level in 10 samples and concentrations exceeding the TAGM 4046 soil cleanup objective (400 mg/kg) in five samples. Lead concentrations ranged from 103 to 5,940 mg/kg. Subsequent to this sampling, in December 2006 NYSDEC promulgated soil cleanup objectives that replaces TAGM 4046. References to TAGM in this supplemental RI report is an artifact of references to information in historical documents. Other inorganic contaminants also present in Eighteenmile Creek sediment at concentrations exceeding sediment criteria include arsenic, cadmium, chromium, and iron (one sample); nickel (two samples); mercury (three samples); silver (four samples); copper (nine samples); and zinc (10 samples) (NYSDEC 2006a). The most contaminated sample was a sediment sample collected near the Former Flintkote Plant Property.

In April 2002, the owner of the 143 Water Street property submitted a request to the Niagara County Health Department (NCHD) for sample collection and evaluation of soils from their property. In response to this request, the NCHD and NYSDEC inspected the property. During the site visit, the NCHD identified a portion of the 143 Water Street yard that would flood during high water events and a small vegetable garden within the reported flood area. Per the NCHD's request, NYSDEC collected four samples (SS-1 through SS-4) from the property at 143 Water Street. Based on the results of this sampling event, the New York State Department of Health (NYSDOH) requested 15 additional samples from properties along Water Street, including one sediment sample from Eighteenmile

Creek and two waste samples from wooded property south of the Former Flintkote Plant Property on Mill Street (NYSDEC 2002). These samples (SS-5 and SS-8 through SS-21; SED-6; and SS-6 and SS-7, respectively) were collected on July 23, 2002. Two soil samples (SS-6 and SS-7) and three sediment samples (SED-7, SED-8, and SED-9) near the Clinton Street dam from an area identified as a potential source of PCBs to Eighteenmile Creek were collected in November 2002 by NYSDEC (NYSDEC 2003). The analytical results for samples collected within the Water Street properties were evaluated as part of the EPA's OU1 HHRA and Supplemental FS and are not presented as part of this report (EPA 2013).

1.4.2 Former Flintkote Plant Property

The Former Flintkote Plant Property was cited by the NYSDEC Division of Water as a potential source of contaminants to Eighteenmile Creek based on analytical results for two ash samples collected by NYSDEC (NYSDEC 1996). Two more samples from the Island that were collected by NYSDEC in August 1996 failed the Toxicity Characteristic Leaching Procedure regulatory limit for lead (characteristic hazardous waste D008). A site investigation of the Flintkote Plant Property conducted in 1999 by NYSDEC determined that the Flintkote Plant Property had received various wastes, refuse, and debris over the years. Much of the waste was visible at the surface and along the Eighteenmile Creek embankments and millrace (NYSDEC 2000). Eleven ash samples were analyzed for PCBs and seven of these samples contained PCBs at concentrations ranging from 0.02J to 6.8 mg/kg. None of these concentrations, however, exceeded the 10 mg/kg TAGM 4046 soil cleanup objective.

In 2003, a site investigation of the Former Flintkote Plant Property was conducted by Niagara County under NYSDEC's Brownfield program to fill in data gaps in NYSDEC's 1999 investigation. The results of the Niagara County site investigation were consistent with NYSDEC site investigation results. The scope included the following:

- Collection of surface soil/fill samples;
- Twenty-five soil probes and 10 test borings;
- Installation and sampling of three overburden groundwater monitoring wells and seven bedrock wells, as well as the sampling of three existing wells;
- Sampling of concrete building surfaces for PCBs;
- Inspection of sumps and low areas within the building and outfall pipes to Eighteenmile Creek;
- Sampling of suspect material adhering to interior building surfaces; and
- Chemical analysis of soil/fill, sediment, liquids, groundwater concrete samples, and miscellaneous materials. Significant quantities of suspect asbestos-containing materials were also observed throughout the building complex.

Analytical data from this investigation indicated the absence of widespread facility-derived dissolved groundwater contamination, and the absence of surface water contamination in the creek. However, contamination was detected in the surface and subsurface soil/fill across the entire site; fill from a berm extending onto 143 Water Street; overburden groundwater (PCBs) in well 198-F; bedrock groundwater in MW-RK1; standing water and sediments with the building drains and sumps; sediment in the outfall to the south of William Street; and viscous material adhering to surfaces in Buildings D and E.

In July 2005, Niagara County and NYSDEC reported the data in an SI Report (TVGA 2005a). The data was used to qualitatively evaluate the potential exposure pathways and receptors for each media to identify potential risks to human health and the environment. In October 2005, Niagara County and NYSDEC completed an evaluation of remedial alternatives and issued an RAR (TVGA 2005b). The two reports are combined as Site Investigation/Remedial Alternatives Report (SI/RAR) which is equivalent to the RI and FS reports completed for the OU2 creek corridor. A ROD for the Former Flintkote Plant Property was issued by NYSDEC in March 2006 (NYSDEC 2006b).

1.4.3 OU2 Creek Corridor

In fall 2005, NYSDEC completed an RI of the Eighteenmile Creek in order to better define the nature and extent of sediment contamination in Eighteenmile Creek and the millrace, to further evaluate the impact of creek flooding on residential properties along Water Street, and to evaluate potential sources of contaminants to the creek (NYSDEC 2006a). These source areas include the Former Flintkote Plant Property, the White Transportation property, the former United Paperboard Company property, Upson Park, and the Canal (see Figure 1-3). During this RI, elevated concentrations of PCBs and metals (i.e., arsenic, chromium, copper, lead, and zinc) were found in sediment samples from Eighteenmile Creek and the millrace adjacent to the Former Flintkote Plant Property. PCBs were detected in 58 of the 61 samples at concentrations ranging from 0.007 J to 1,400 mg/kg and the principal Aroclors detected were 1248, 1254 and 1260. For the samples that exceeded the NYSDEC sediment criterion, the lead concentrations ranged from 116 to 25,400 mg/kg. Additionally, contaminated sediment was found in the Canal upstream of Eighteenmile Creek. PCBs, arsenic, chromium, copper, lead, and zinc levels detected in the fill at Upson Park, the White Transportation property, the Former United Paperboard Company property, and the Former Flintkote Plant Property may potentially adversely impact Eighteenmile Creek. However, these potential source areas were not fully investigated and the volume of contaminated sediment requiring remediation was not quantified during the RI.

The NYSDEC RI identified several sites adjacent to Eighteenmile Creek as potential contributors of contaminants to the creek. A brief description of previous evaluations and investigations completed at these sites is presented below.

A Phase I Environmental Site Assessment (ESA) of the White Transportation property was completed in 2002 by TVGA for the Niagara County Department of Planning, Development, and Tourism (TVGA 2002). On November 3, 2005, a site reconnaissance was conducted by NYSDEC as part of the Eighteenmile Creek Corridor RI. In early 2007, E & E updated the Phase I ESA (EEEPC 2007). A Phase I ESA for the other Eighteenmile Creek corridor sites (United Paperboard Company and Upson Park) also was prepared for NYSDEC (EEEPC 2007). Following the Phase I ESA, a supplemental RI was conducted for Eighteenmile Creek corridor site in 2007 (EEEPC 2009a).

An additional field investigation was performed for Eighteenmile Creek corridor site in late 2008/early 2009 to fill in gaps in the NYSDEC RI and supplemental RI data and to facilitate the FS (EEEPC 2009b). The objectives of the additional investigation were to:

- Determine whether the Canal is a significant source of contamination to Eighteenmile Creek by qualitatively estimating the contribution of contamination to Eighteenmile Creek from the Canal and gain a better understanding of sediment transport from the Canal to Eighteenmile Creek. These data will be used to complete the FS for the Site; and
- Understand the presence of volatile organic compounds (VOCs) in the groundwater in the Upson Park and Former United Paperboard Company properties.

The findings of the additional investigation (EEEPC 2009b) were submitted as an addendum to the final supplemental RI report (EEEPC 2009a). In general, Canal sediments did not appear to be a significant contributor of PCBs and metals to Eighteenmile Creek sediments. Groundwater samples from the southern Upson Park bedrock well (18MC-MW16) did not contain VOCs. The groundwater sample collected from the 18MC-MW14 bedrock well installed at the northern portion of Upson Park, near the property line at the shoulder of Clinton Street, contained trichloroethene (TCE) and cis-1,2-dichloroethene (cis-1,2-DCE) at concentrations above the New York State groundwater quality standards. Five other VOCs (chloroform and four chlorinated hydrocarbons) were detected in the July 2007 sample collected from the 18MC-MW14 well at concentrations below the New York State standard. Only one of these chlorinated hydrocarbons (trans-1,2-DCE) was found in the February 2009 sample, also below the New York State standard. Three chlorinated hydrocarbons were found in the two samples from the 18MC-MW15 well between wells 18MC-MW14 and 18MC-MW16 at concentrations below the New York State groundwater quality standards. Two VOCs (cis-1,2-DCE and vinyl chloride) were detected in 18MC-MW05 located on the Former United Paperboard Company property. Only cis-1,2-DCE was detected at a concentration above the New York State groundwater standard (5 micrograms per liter [µg/L]) at 9.4 µg/L. No other VOCs have been found in the Former United Paperboard Company wells installed during the NYSDEC supplemental RI wells at concentrations above the New York State standards.

In March 2015, an RI report was prepared for the EPA's Great Lakes National Program Office (GLNPO) for Eighteenmile Creek sediments (CH2M Hill, Inc. and EEEPC 2015). The RI report included sediment data collected under investigations performed from Olcott Harbor (mouth of the creek) to upstream through the city of Lockport to the Canal included sediment data collected in OU2. The GLNPO field investigations were performed between November 2009 and November 2010 and focused on sediment characterization from Burt Dam to the base of the Niagara Escarpment in area that EPA has designated as OU3.

1.5 Report Organization

This supplemental RI report is organized as follows:

- **Section 1 Introduction.** Brief description of the Site history and existing conditions.
- **Section 2 Supplemental Remedial Investigation Activities.** Summary of supplemental RI activities completed from 2014 to 2016.
- **Section 3 Physical Characteristics of the Site.** Summary of environmental settings, geology, hydrology, and ecological characteristics.
- **Section 4 Data Quality Evaluation**. Summary of data usability evaluation of the historical data and supplemental RI data collected from 2014 to 2016.
- **Section 5 Nature and Extent of Contamination.** Presentation of the combined historical and supplemental RI sample results used to describe the nature and extent of contamination.
- **Section 6 Contaminant Fate and Transport.** Updated conceptual site model (CSM), migration pathways, and contaminant persistence.
- **Section 7 Summary and Conclusions.**
- **Section 8 References.**

Appendices include analytical data tables for samples collected as part of this supplemental RI (Appendix A); photo and field documentation for the events completed as part of the supplemental RI (Appendix B); analytical reports for samples analyzed as part of this supplemental RI (Appendix C); historical data evaluation (Appendix D); and toxicity and bioaccumulation results (Appendix E).

Table 1-1 Land Use Plans

Area/Property	Comprehensive Plan Future Land Use	Nomination Study Future Land Use
Eighteenmile Creek Channel	Park land and recreational area, including a proposed nature trail	Open Space[1] and Waterfront Mixed Use[2]
Former Flintkote Plant Property	Industrial	Open Space
Upson Park	Park land	Open Space
White Transportation	Commercial	Waterfront Mixed Use
Former United Paperboard Company	Industrial	Open Space and Waterfront Mixed Use

Notes:

[1] Mix of developed and maintained active park land and undeveloped, naturalized areas.

[2] Predominantly residential with some smaller-scale commercial businesses that support the adjacent neighborhoods or the tourism industry.

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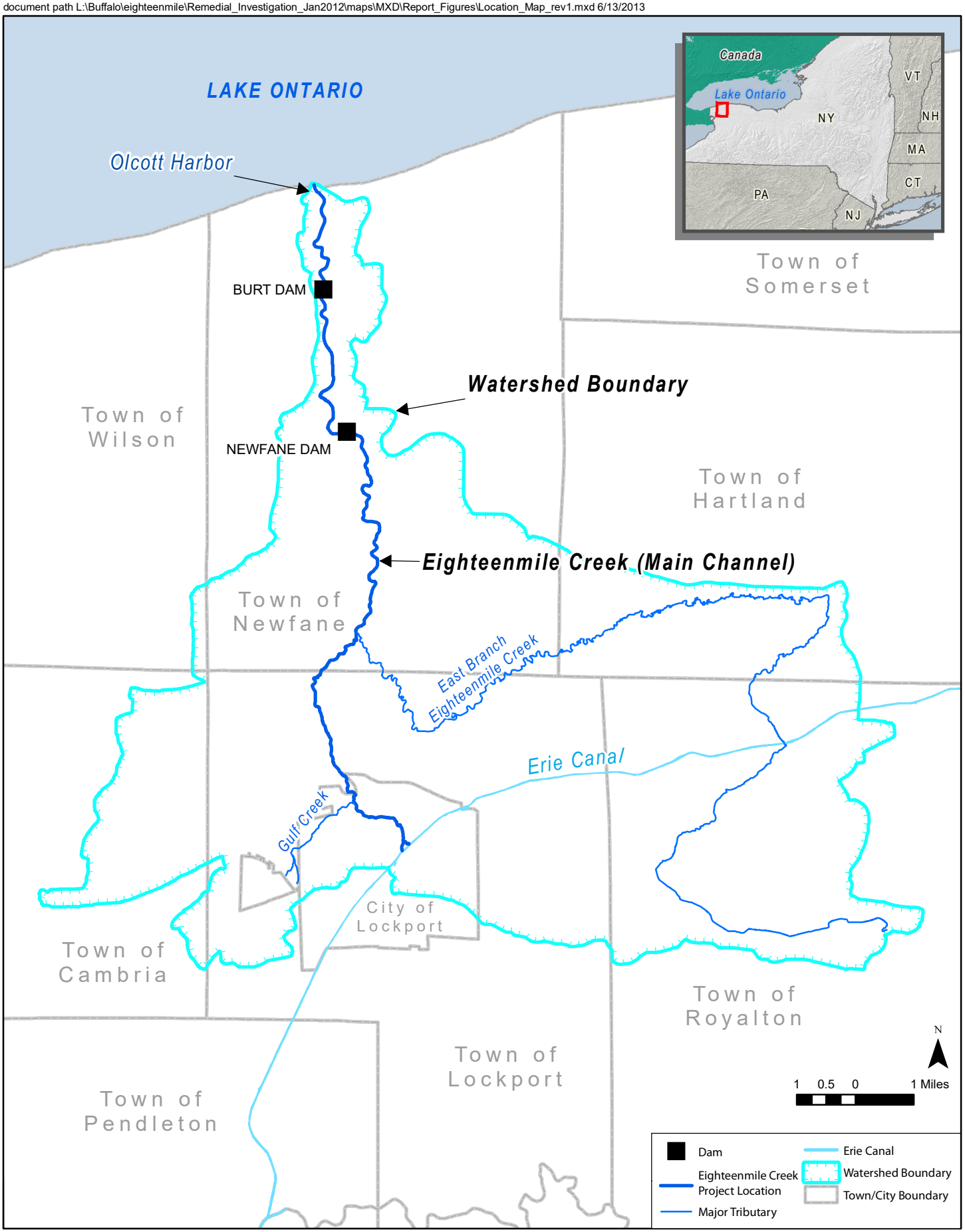

Figure 1-1 Site Location Map
Eighteenmile Creek
Lockport, NY

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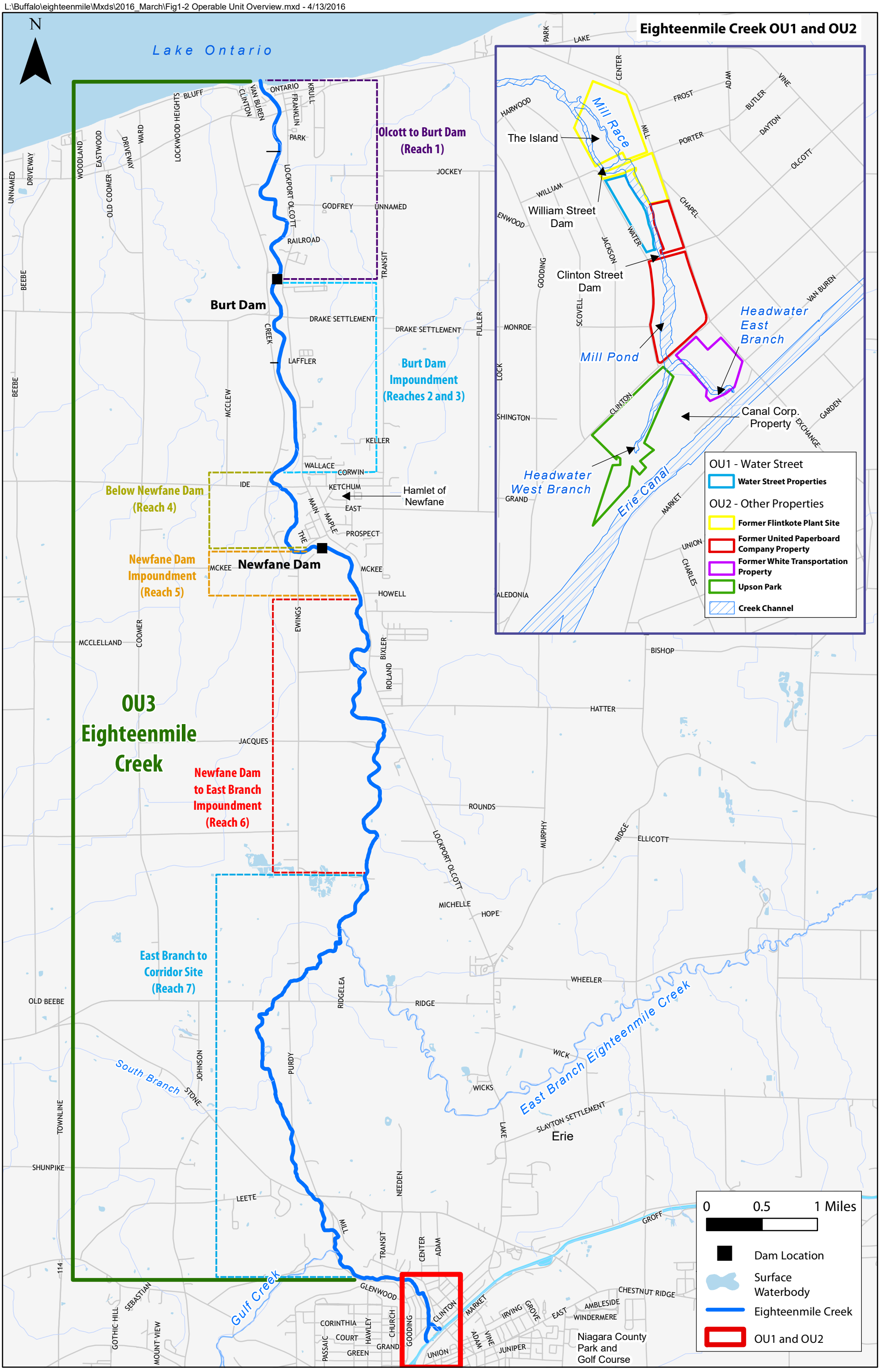

Figure 1-2 Operable Unit Overview, Eighteenmile Creek Superfund Site
Lockport, NY

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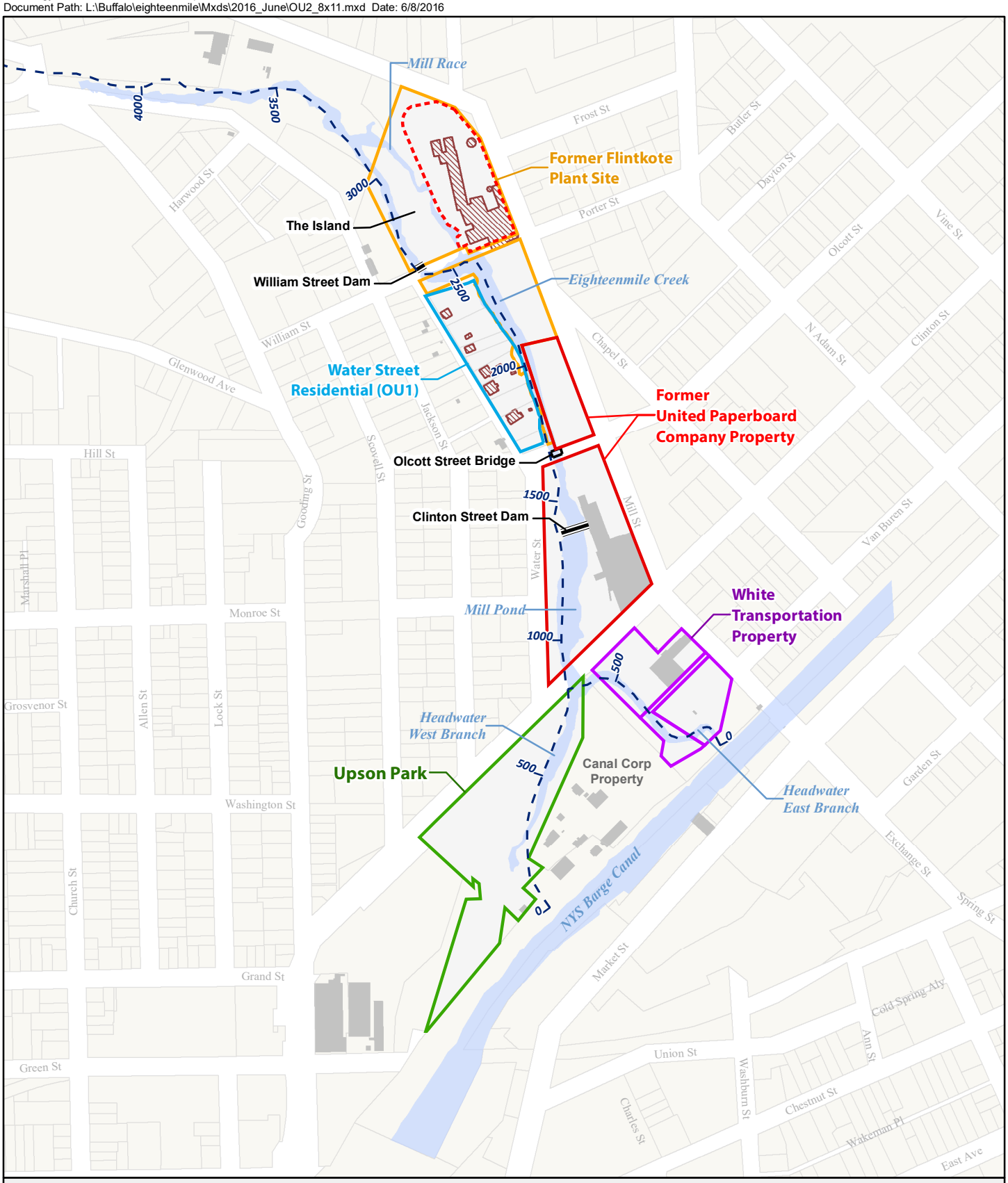

Eighteenmile Creek / Headwater East Branch Centerline (500-ft marker)

Building

Former Building Footprint

Demolition Area

Tax Parcels

Figure 1-3
Eighteenmile Creek RI OU2

0 200 400 800 Feet

N

Data Source: Esri 2012, Niagara County 2014.

2 Supplemental Remedial Investigation Activities

Past studies, site information, and existing analytical data were evaluated to determine whether additional data were needed to define nature and extent of contamination, develop a complete conceptual model of OU2, understand the fate and transport of sediment in the Eighteenmile Creek, and assess risk to humans and ecological receptors at the contaminated properties in the OU2 creek corridor. The data gaps were identified and summarized in the *Evaluation of Existing Data Eighteen Mile Creek Superfund Site* (LATA/E & E 2014a). Section 4 provides a more detailed description of the analytical data and the data evaluation process. Data collection activities to address these data gaps were documented in a Project-Specific Quality Assurance Project Plan (QAPP) for Eighteenmile Creek OU2 RI/FS (LATA/E & E 2014a). The first phase of field data collection activities was completed in November and December 2015. The QAPP was updated in April 2015 (LATA/E & E 2015) and the second phase of field data collection activities was completed in May and July 2015. The QAPP was updated in January 2016 (E & E 2016a) to address additional data gaps for the BERA and limited samples were collected in January 2016 (third phase). Table 2-1 provides a summary of all samples collected as part of this supplemental RI.

Consistent with EPA QA/QC Guidance, samples were analyzed for Target Compound List (TCL)/Target Analyte List (TAL) parameters including TCL VOCs, semivolatile organic compounds (SVOCs), PCBs, pesticides, and TAL metals. A fraction of the samples were analyzed for PCB congeners, dioxin/furans (i.e., polychlorinated dibenzo-p-dioxin/polychlorinated dibenzofuran), and hexavalent chromium. The congener analysis evaluated cancer risks from dioxin-like PCBs to determine if there was enhancement of cancer risks associated with exposures to dioxin-like PCBs (EPA 1996). Evaluation of the form of chromium was needed to determine if Chromium +6, the more toxic chromium form, was present. Sediment toxicity testing and bioaccumulation studies were also completed to support the BERA. Data summary tables for all analytical results are provided in Appendix A. Photo and field documentation for all three phases of the field work is provided in Appendix B. Sample collection activities by matrix are summarized in the following subsections.

2.1 Soil Sample Collection

Soil samples were collected during three field efforts (phases), November/December 2014, May/July 2015, and January 2016. These samples were collected to fill data gaps from previous investigations. In 2014 and 2015, soil samples were collected to assess concentrations to support the HHRA and BERA and delineate extent of contamination. In 2016, soil samples were collected to reflect a range contaminant concentrations to support invertebrate bioaccumulation studies. The soil locations were selected to achieve the following chemical concentration ranges: PCBs 0.025 to 23.0 mg/kg; lead 22.1 to 2,860 mg/kg; copper 17.0 to 1,640 mg/kg; arsenic 4.7 to 63.2 mg/kg; zinc 69.7 to 6,360 mg/kg; cadmium: 0.17 to 26.6 mg/kg; mercury 0.041 to 10.8; nickel 11.0 to 152 mg/kg and; chromium: 7.7 to 154 mg/kg. The locations of all soil samples collected within the OU2 boundaries are shown on Figure 2-1. The samples collected as part of this supplemental RI are identified with the prefix OU2. The specific samples collected within each source area are summarized below.

2.1.1 Upson Park

During November and December 2014, surface soil samples were collected from 10 locations in Upson Park (OU2-SS01 through OU2-SS10) (see Figure 2-1). Samples were collected because insufficient surface soil data were available for the Upson Park Property away from the stream banks. At each location, samples were collected from two depth intervals as follows: Z1 was collected from 0 to 0.5 feet below ground surface (BGS) and sample Z2 was collected from 0.5 to 2 feet BGS. All samples were tested for TCL VOCs, SVOCs, PCBs, pesticides, and TAL metals to provide additional data for all parameters for the HHRA. The Z1 portions of samples OU2-SS02, OU2-SS05, and OU2-SS09 (collected from 0 to 0.5 feet BGS) were also tested for PCB congeners and dioxin/furans. Soil sample results for Upson Park are included in Appendix A, Table A-1.

To delineate elevated PCB concentrations found in sample OU2-SS09, collected in 2014, four additional locations (OU2-SS11 through OU2-SS14) were sampled in Upson Park in May 2015. At each location, samples were collected from three intervals as follows: Z1 was collected from 0 to 0.5 feet BGS, Z2 was collected from 0.5 to 2 feet BGS, and Z3 was collected from 2 to 3 feet BGS. During this sampling event, samples were tested for TCL PCBs only. The Z1 interval at location OU2-SS12 was also tested for dioxins/furans. The Z1 interval at location OU2-SS13 was also tested for PCB congeners.

Three surface soil samples representing a range of PCB and lead concentrations were collected from the Upson Park area in January 2016 to support site-specific bioaccumulation studies for the BERA (E & E 2016c [forthcoming]). These samples were identified as OU2-SS22, OU2-SS23, and OU2-SS24 and were collected from the ground surface to 1 foot BGS. The locations are shown in Figure 2-4. The 28-day *Lumbriculus* earthworm (*Eisenia fetida*) bioaccumulation test (American Society of Testing and Material Designation E1676-12) was used to assess bioaccumulation from soil to invertebrate tissue using field collected soil samples throughout OU2. The samples also were analyzed for TCL SVOCs, PCBs, pesti-

cides, and TAL metals as shown on Appendix A, Table A-1. The sample results for the tissue analysis of the earthworms are presented on Appendix A, Table A-13. The bioaccumulation report is presented in Appendix E and discussed in the BERA.

2.1.2 Former Flintkote Plant Property

In December 2014, soil borings were drilled at three locations on the Former Flintkote Plant Property (OU2-SB01 through OU2-SB03) to determine if wastes could be present in the northeast corner that was not previously evaluated (LATA/E & E 2014a). Three subsurface soil samples were collected from each soil boring at depth intervals ranging from 1 to 7.2 feet BGS. As with the samples taken in December 2014 in Upson Park, these samples were analyzed for TCL VOCs, SVOCs, PCBs, pesticides, and TAL metals. In addition to these analyses, the Z1 interval (1 to 1.5 feet) of OU2-SB02 was also analyzed for dioxins/furans, and PCB congeners. Sample results are shown in Appendix A, Table A-2.

The EPA demolition of the Former Flintkote Plant was completed between May and July 2015. Once the building foundation was exposed, subsurface soils/sediment/fill were collected in the building footprint to characterize potential sources of contamination that could not have been sampled previously. Samples were collected from the following locations (see Figure 2-1):

- OU2-TP01: Soil beneath the central portion of former Building E (two samples);
- OU2-TP02: Ash-like material in a vault near southwest corner of former Building D;
- OU2-TP03: Soil beneath the west-central portion of former Building D (two samples);
- OU2-TP04: Excavation beneath the northwest of OU2-TP02 in the southwest corner of former Building D (no sample due to high volumes of groundwater entering the excavation);
- OU2-TP05: Soils beneath the southern end of former Building E;
- OU2-TP06: Soils beneath the southwest corner of former Building C near the floor drain;
- OU2-TP07, -TP08, and -TP09: Soils/sediment beneath vaults in former Building B (from the former race below Building B) (two samples from TP07 and TP09);
- FL-Turb: Soil/sediment beneath turbine in former Building B (from the former race below the turbine); and
- Arch-SP: Spoils from the excavation on the north side of former Building B (outlet of the race beneath former Building B).

The samples were analyzed for TCL VOCs, SVOCs, PCBs, pesticides, and TAL metals. Sample results for the former Flintkote Plant Property test pits are included in Appendix A, Table A-3.

Three surface soil samples representing a range of PCB and lead concentrations were collected from the OU2 creek corridor near the former Flintkote Plant Property in January 2016 in support of the bioaccumulation studies described in Section 2.1.1. These samples were identified as OU2-SS15 through OU2-SS17 and were collected from the ground surface to 1 foot BGS. The locations are shown in Figure 2-4. Soil sample results for these samples are included in Appendix A, Table A-2. The sample results for the tissue analysis of earthworms are presented on Appendix A, Table A-13.

2.1.3 United Paperboard Company

Four surface soil samples representing a range of PCB and lead concentrations were collected from the OU2 creek corridor near the former United Paperboard Company Parcel in January 2016 in support of the bioaccumulation studies described in Section 2.1.1. These samples were identified as OU2-SS18 through OU2-SS21 and were collected from the ground surface to 1 foot BGS. The locations are shown in Figure 2-4. Soil sample results for these samples are included in Appendix A, Table A-4. The sample results for the tissue analysis of the earthworms are presented on Appendix A, Table A-13.

2.1.4 White Transportation Property

Although no samples were collected on the White Transportation Property, historical data is presented in Section 5.2.4 for completeness.

2.1.5 Surface Soil Background

In November 2014, surface soil samples were collected from seven background locations (BG1-SS01 through BG1-SS07). Background locations were selected as outlined in 2002 EPA Role of Background in the CERCLA Cleanup Program to allow comparison of OU2 samples (EPA 2002). Background sample locations were selected from an area with the same physical, chemical, geological, and biological characteristics as the OU2 soils, but has not been influenced by the releases from the Site. The background samples were collected in a wooded area east of the city of Lockport, northeast of the Lockport Town and Country Club and south of the Canal (see Figure 2-2). These locations on the Canal were farther upstream from the Site and in areas that did not have industrial usage were selected. The specific locations were selected to avoid paved or rocky areas. At each location, soil samples were collected from two depth intervals as follows: Z1 was collected from 0 to 0.5 feet BGS; and Z2 was collected from 0.5 to 2 feet BGS. All background soil samples were analyzed for TCL VOCs, SVOCs, PCBs, pesticides, and TAL metals. Also, the Z1 interval from each location was analyzed for dioxins/furans and the Z1 intervals from locations BG1-SS01 and BG1-SS06 were analyzed for PCB congeners. Soil sample results for background soils are included in Appendix A on Table A-5.

2.2 Groundwater Investigation

Due to the uncertain nature of the source of the elevated levels of chlorinated volatiles present in MW05 (Former United Paperboard Company, west side of the Eighteenmile Creek) and MW14 (Upson Park), two new monitoring wells were planned to address the contaminant source data gap. Following review of the existing monitoring well locations and chlorinated VOC concentrations, a Geoprobe investigation was planned to pre-characterize groundwater upgradient of MW05, MW09, and MW14 near and around Clinton Street, Jackson Street, and Monroe Street in an effort to choose optimal locations for the new monitoring wells.

In December 2014, a total of 23 Geoprobe boring attempts were made within the right-of-way along Clinton Street, Jackson Street, and Monroe Street. This consisted of borings from the ground surface to refusal (assumed to be bedrock). However, refusal was encountered between 1.6 and 8.9 feet BGS and as a result, only one boring contained groundwater. Thus, only one groundwater grab sample, OU2-GW01, was collected by installing a temporary groundwater monitoring well consisting of 1-inch diameter Schedule 40 PVC screen and a 0.010-inch slot size, 5 feet in length. The sample was collected, using a dedicated bailer, analyzed in an off-site laboratory, and no VOCs were detected. Figure 2-3 presents locations of each of the attempted soil borings. Upon completion of the Geoprobe investigation, the temporary well was removed and each borehole was backfilled with native soils and bentonite pellets. Since most of the areas investigated were dry, EPA and E & E decided to install only one of the two planned monitoring wells (MW18) (see Appendix B Daily Report for December 17, 2015).

2.2.1 Monitoring Well Installation

One additional groundwater monitoring well (MW18) was installed in December 2014. MW18 was installed on Jackson Street, west of Eighteenmile Creek (see Figure 2-3). The well was constructed with a 10-foot section of 2-inch inner diameter (ID), flush-joint Schedule 40 PVC screen (0.010-inch slot size), and flush-threaded 2-inch ID Schedule 40 PVC riser. A sand pack of U.S. Silica #0 sand was installed from the bottom of the borehole to 2 feet above the top of the screen, followed by a 2-foot-thick pelletized bentonite seal. Bentonite/cement grout was installed from the top of the seal to 1 foot BGS and the well was completed flush with the ground surface using 8-inch diameter by 12-inch deep steel casing. The well was fitted with a locked water-tight cap (J-plug). Table 2-2 summarizes monitoring well construction data for MW18 as well as the existing monitoring wells in the VOC plume area. The geotechnical well boring and construction log for MW18 is presented in Appendix B.

2.2.2 Groundwater Sample Collection

Prior to sampling the monitoring wells, static water levels were measured in each well (see Table 2-3). The volume of water in each well was then calculated, and a minimum of three volumes of water were removed (as per the QAPP) to ensure that the well water sampled was representative of natural conditions, not conditions affected by the drilling processes. Submersible pumps with dedicated tubing were used for purging the wells prior to sample collection. Groundwater quality

parameters, including temperature, pH, conductivity, and turbidity measurements, were recorded throughout the well purging process and immediately prior to sample collection. The water quality results are presented in Table 2-4. Purging was performed in accordance with the QAPP except for a few minor deviations as noted on Table 2-4. Appendix B contains well purge records.

Six monitoring wells were sampled in December 2014 and May 2015. Five were analyzed for TCL SVOCs, PCBs and pesticides, trace level TCL VOCs, and TAL metals (MW05, MW14, MW15, MW16, and MW18). Well MW09 was analyzed for trace level TCL VOCs only, due to insufficient water volume in the well. Groundwater sample results are included in Appendix A, Table A-6.

In an effort to determine potential sources of PCB contamination from buried outfalls, collection of groundwater samples was attempted along the bank of Eighteenmile Creek and the Former Flintkote Plant Property in 25-foot intervals at groundwater interface in January 2016. Samples were attempted between the toe of the slope and the creek bank, where groundwater is shallowest (see Figure 2-3).

Two of the 21 planned well point groundwater grab samples (OU2-WP01 and OU2-WP02) were collected. Repeated attempts were made to collect the remaining samples; however, the presence of abundant tree-roots and fill materials (e.g., bricks, and concrete) caused refusal and equipment failure/loss preventing collection of the remaining samples. Based on the multiple failed attempts, sampling of the remaining locations was abandoned. Well point samples were analyzed for TCL PCB Aroclors and PCBs were not detected, therefore, no additional sample techniques were attempted. The results are presented in Appendix A, Table A-6.

2.3 Sediment and Surface Water

Sediment has been extensively sampled as part of previous investigations at locations depicted on Figure 2-5. Additional sediment samples were collected from the OU2 creek corridor in areas with chemical concentrations in sediment from previous investigations indicate the potential for both acute and chronic toxicity impacts based on comparison with screening criteria. As part of the initial data gap evaluation (LATA/E & E 2014a), these areas were identified as areas that needed additional data to support the BERA. Toxicity testing was performed to determine if impacts exist. Acid volatile sulfides/simultaneously extracted metals (AVS/SEM) and organic carbon in sediment were also measured to help assess the bioavailability of divalent metals including cadmium, copper, lead, nickel, zinc, monovalent silver, and mercury. Surface sediment (0 to 0.5 feet beneath the sediment water interface) and surface water samples were collected in the creek channel at the same locations to assess the correlation of chemical parameters with toxicity testing and provide additional data for the BERA.

2.3.1 Sediment

Three sediment samples were collected from the OU2 creek corridor in May 2015 at locations to characterize the overall range of concentrations (i.e., High/Medium/Low) as shown on Figure 2-4. Sample OU2-SED01 was collected

from the bend in the creek adjacent to the Former Flintkote Plant Property in an area with average concentrations of 8.2 mg/kg for PCBs and 1,252 mg/kg for lead (considered medium concentration levels). Sample OU2-SED02 was collected in Mill Pond, upstream of the Clinton Street dam in an area with average concentrations of 5.5 mg/kg for PCBs and 363 mg/kg for lead (considered low concentration levels). Sample OU2-SED03 was collected approximately 100 feet downstream of the Clinton Street dam in an area with average concentrations of 23 mg/kg for PCBs and 3,518 mg/kg for lead (considered high concentration levels). All sediment samples were collected using a stainless-steel Wildco Petite Ponar dredge and analyzed for TCL VOCs, SVOCs, PCBs, pesticides and TAL metals, AVS/SEM, and total organic carbon (TOC). Sample OU2-SED02 was also analyzed for hexavalent chromium, PCB congeners, and dioxin/furans. The toxicity testing performed on all three samples is described in Section 2.3.3. Analytical results for the sediment chemistry are provided in Appendix A, Table A-7.

Six sediment samples were collected from the OU2 creek corridor in January 2016 to support site-specific bioaccumulation studies for the BERA (E & E 2016c [forthcoming]). The locations were selected to cover a range of contaminant concentrations to establish a relationship between sediment and benthic-macroinvertebrate contaminant levels (see Figure 2-4). The sediment locations were selected to achieve the following chemical concentration ranges: PCBs 0.07 to 37.7 mg/kg; lead 149 to 3,040 mg/kg; copper 29.2 to 2,640 mg/kg; arsenic 3.3 to 26.9 mg/kg; zinc 205 to 4,710 mg/kg and; chromium 11.3 to 68.5 mg/kg. These samples, identified as OU2-SED04 through OU2-SED09, were collected from the biologically active zone at (0 to 0.5 feet). The 28-day *Lumbriculus variegatus* bioaccumulation test (EPA Test Method 100.3) was performed on these samples to assess bioaccumulation from sediment to benthic macroinvertebrates using field-collected sediment from the OU2 Site. The samples also were analyzed TCL polynuclear aromatic hydrocarbon (PAH), PCBs, and pesticides; trace metals; and TOC. Analytical results for the sediment chemistry are provided in Appendix A, Table A-7. The sample results for the tissue analysis of the benthic macroinvertebrates are presented on Appendix A, Table A-13.

2.3.2 Surface Water

A total of three surface water samples were collected in May 2015 at three of the sediment sample locations as shown on Figure 2-4. The samples were collected using a peristaltic pump from the upper 1 foot of water. The surface water samples were collected from OU2 creek corridor sediment sample locations as described in Section 2.3.1. Samples were analyzed for trace level TCL VOCs, SVOCs, PCB congeners, pesticides, and TAL metals. The toxicity testing performed on all three samples is described in Section 2.3.3. Analytical results are provided in Appendix A, Table A-8. Sample locations are depicted in Figure 2-4.

In addition, two water samples were taken during the May 2015 test pit excavations at the former Flintkote building footprint described in Section 2.1.2 (see Figure 2-1). One sample was collected from groundwater that flowed out of OU2-TP04 into a buried drain that emptied into the millrace. The connection be-

tween the apparent drain and the millrace was confirmed with dye. The second sample was collected from the millrace (FL-DS). These samples were tested for TCL VOCs and PCBs.

2.3.3 Toxicity Analysis

Toxicity testing was conducted on three surface water and sediment samples collected in May 2015 from the OU2 creek corridor (OU2-SW01/SED01; OU2-SW02/SED02; and OU2-SW03/SED03) and one surface water and sediment sample from the background location as described below (BG1-SW01/SED01). The toxicity testing was done to support the BERA. The toxicity analysis for surface water samples consisted of the Fathead Minnow (*Pimephales promelas*) Larval Survival and Growth Test by EPA Method 1000.1 and the Daphnid (*Ceriodaphnia dubia*) Survival and Reproduction Test by EPA Method 1002.0. The toxicity analysis for sediment samples consisted of the *Hyalella azteca* 42-day (chronic) Test for Measuring the Effects of Sediment Associated Contaminants on Survival, Growth, and Reproduction by EPA Method 100.4 and the 20-day Test for Measuring the Effects of Sediment Associated Contaminants on *Chironomus tentans* by EPA Method 100.5. Samples results are summarized in Appendix A, Table A-9. The toxicity study reports are provided in Appendix E

2.3.4 Sediment and Surface Water Background

One background surface water sample (BG1-SW01) and seven background sediment samples (BG1-SED01 through BG1-SED07) were collected in May 2015 from the surface water impoundments (ponds) located on the East Branch of Eighteenmile Creek in Gasport, New York (see Figure 2-6). Background locations were selected as outlined in 2002 EPA Role of Background in the CERCLA Cleanup Program (EPA 2002) to allow comparison of OU2 samples. Background samples locations were selected from an area with the same physical, chemical, geological, and biological characteristics as the OU2 sediments and surface water, but has not been influenced by the releases from the Site. The impoundments were located northwest and southeast of the intersection of Quaker Road and Slayton Settlement Road. These ponds are very similar to the Site as they were created by mills and have influence from the Barge Canal. Reviews of historical records indicate there is no source of contamination associated with the historical mills. These locations were selected because there were in a similar setting, within the same watershed, and with surface water supplied from the Canal farther east and upstream of OU2 (see Figure 2-6). Although the impoundments received the same Canal surface water, the area is not influenced from the source areas within OU2. Samples BG1-SW01/SED01 were analyzed for the same chemistry and toxicity testing parameters as sediment and surface water samples collected in the OU2 creek corridor (see Appendix A, Table A-10). Samples BG1-SED02 through BG1-SED07 were submitted for chemical parameters only. Sediment samples were collected using a stainless-steel Wildco Petite Ponar dredge the same as were used for the OU2 creek corridor samples. Surface water samples were collected with a peristaltic pump, the same as were used for the OU2 creek corridor samples.

2.4 Fish Tissue

Fish tissue samples were collected from the OU2 creek corridor and background locations in May 2015 to assess the bioaccumulation exposure pathway from the sediment to fish in support of the HHRA and BERA as outlined in the approved QAPP (LATA/E & E 2014b). The target fish species were forage sunfish *(Lepomis* spp.) (forage) for the BERA and adult largemouth bass (game fish) (*Micropterus salmoides*) for the HERA. Both species are expected to be plentiful in OU2 based on historical sampling in other areas of Eighteenmile Creek. For game fish, such as largemouth bass, skin-on fillet samples were collected following NYSDEC protocols for use in the HHRA. Whole-body composite samples of juvenile sunfish (forage fish) were collected for use in the BERA. The fish tissue samples were analyzed for TCL PCBs, SVOCs, and pesticides; and TAL metals and percent lipids. One game fish from OU2 and the background locations (OU2-SMB-01 and BG1-LMB-01) and one forage fish composite from OU2 and the background location (OU2-ROC-C01 and BG1-PUM-C01A) were analyzed for dioxins/furans and dioxin-like PCB congeners. Samples results are summarized in Appendix A, Table A-11.

Fewer fish tissue samples were collected than originally planned due to insufficient numbers of suitable species present for game fish and for forage fish. At the time of sample collection in late May of 2015, low water levels were observed, due in part, to the lack of recent rainfall. Therefore, the resultant sample sizes were small. As insufficient numbers of largemouth bass (*Micropterus salmoides*) were collected at all of the sites, the field crews expanded the range of fish species collected for analysis.

At OU2, silver redhorse (*Moxostoma anisurum*), smallmouth bass (*Micropterus dolomieu*), and walleye (*Sander vitreus*) were collected for fillet analysis, as no largemouth bass were collected. In the reference area, one largemouth bass was collected, but the only other longer-bodied fish available was common carp (*Cyprinas carpio*) (see Table 2-5).

The number of forage fish composite samples collected from OU2 and the background location was also much lower than the target of 10 composite samples per area (see Table 2-5) due to limited forage fish availability. Also, the species of forage fish available for collection varied between areas. Rock bass (*Ambloplites repestris*) was the most abundant forage fish collected from OU2. Only one pumpkinseed sunfish (*Lepomis gibbosus*) was collected from OU2. Rock bass, pumpkinseed sunfish, bluegill sunfish (*Lepomis macrochirus*), and white crappie (*Pomoxis annularis*) were collected from the background location. The collection data, including sizes and species of fish is summarized in Table 2-5.

2.4.1 Eighteenmile Creek Channel

Ten game fish and 13 forage fish were collected from the OU2 creek corridor. Fish were collected using electroshock fishing techniques. Two areas within the OU2 portion of Eighteenmile Creek presented suitable conditions for fish collection and were utilized, including the area at the bend in the creek adjacent to the

Former Flintkote Plant Property, and the area just upstream (South) of the Clinton Street dam. These areas are depicted in Figure 2-4. Game fish fillets were sampled from all 10 fish collected. Three composite samples were submitted from the 13 forage fish collected. Samples results are presented on Appendix A Table A-11.

2.4.2 Fish Tissue Background Location

Fourteen fish tissue samples were collected from the background location using electroshock fishing techniques. All background fish tissue samples were collected from the same surface water impoundment (pond) used for the sediment and surface water described in Section 2.3.4. Both ponds are rather large and appear to provide plenty of habitats for common fish species, such as bass, sunfish, carp, and bullhead. Samples results are presented in Appendix A, Table A-12.

2.5 Cultural Resource Survey

Hartgen Archeological Associates, Inc. (Hartgen) was retained by LATA to conduct a Phase IA archeological investigation for the RI/FS Eighteenmile Creek OU2, which consists of the four parcels and the OU2 creek corridor, covering about 8.3 ha (20.5 acres) from the Canal north along the creek and Mill Street to a point just north of William Street (Hartgen 2015). The investigation was conducted to comply with Section 106 of the National Historic Preservation Act and was submitted for review by the New York State Office of Parks, Recreation and Historic Preservation (OPRHP). The investigation was conducted according to the New York Archaeological Council's Standards for Cultural Resource Investigations and the Curation of Archaeological Collections (NYAC 1994), which are endorsed by the OPRHP.

This report has been prepared according to the OPRHP's SHPO Phase I Archaeological Report Format Requirements (OPRHP 2005). The survey report identifies four new archeological sites and recommends a Phase IB field reconnaissance survey of the OU2 area of potential effects (APE) to further identify and record the archeological features and deposits found there. SHPO concurrence with the report recommendations was received March 23, 2016.

Table 2-1a Summary of Soil Samples Collected, Eighteenmile Creek RI OU2

Sample Name	Sample Matrix	Sample Type	X-Coordinates	Y-Coordinates	Sample Date	Interval Sample (ft)	Analysis							Comments
							Metals	PCB Aroclors	Pesticides	SVOCs	VOCs	PCB Congeners	Dioxins	
Background Soil Samples														
BG1-SS01-Z1	SO	N	-78.670769	43.185326	11/25/2014	0 - 0.5	X	X	X	X	--	X	X	
BG1-SS01-Z2	SO	N	-78.670769	43.185326	11/25/2014	0.5 - 2	X	X	X	X	--	--	--	
BG1-SS02-Z1	SO	N	-78.670166	43.185579	11/25/2014	0 - 0.5	X	X	X	X	--	--	X	
BG1-SS02-Z1/D	SO	FD	-78.670166	43.185579	11/25/2014	0 - 0.5	X	X	X	X	--	--	X	Field Duplicate
BG1-SS02-Z2	SO	N	-78.670166	43.185579	11/25/2014	0.5 - 2	X	X	X	X	--	--	--	
BG1-SS03-Z1	SO	N	-78.658136	43.188647	11/25/2014	0 - 0.5	X	X	X	X	--	--	X	
BG1-SS03-Z2	SO	N	-78.658136	43.188647	11/25/2014	0.5 - 2	X	X	X	X	--	--	--	
BG1-SS04-Z1	SO	N	-78.657882	43.188315	11/25/2014	0 - 0.5	X	X	X	X	--	--	X	
BG1-SS04-Z2	SO	N	-78.657882	43.188315	11/25/2014	0.5 - 2	X	X	X	X	--	--	--	
BG1-SS05-Z1	SO	N	-78.655343	43.189435	11/25/2014	0 - 0.5	X	X	X	X	--	--	X	
BG1-SS05-Z2	SO	N	-78.655343	43.189435	11/25/2014	0.5 - 2	X	X	X	X	--	--	--	
BG1-SS06-Z1	SO	N	-78.654948	43.188914	11/25/2014	0 - 0.5	X	X	X	X	--	X	X	
BG1-SS06-Z2	SO	N	-78.654948	43.188914	11/25/2014	0.5 - 2	X	X	X	X	--	--	--	
BG1-SS07-Z1	SO	N	-78.643282	43.19208	11/25/2014	0 - 0.5	X	X	X	X	--	--	X	
BG1-SS07-Z2	SO	N	-78.643282	43.19208	11/25/2014	0.5 - 2	X	X	X	X	--	--	--	
Upson Park Public Area														
OU2-SS01-Z1	SO	N	-78.689893	43.174176	12/1/2014	0 - 0.5	X	X	X	X	X	--	--	
OU2-SS01-Z2	SO	N	-78.689893	43.174176	12/1/2014	0.5 - 2	X	X	X	X	X	--	--	
OU2-SS02-Z1	SO	N	-78.689690	43.174461	12/1/2014	0 - 0.5	X	X	X	X	X	X	X	
OU2-SS02-Z2	SO	N	-78.689690	43.174461	12/1/2014	0.5 - 2	X	X	X	X	X	--	--	
OU2-SS03-Z1	SO	N	-78.689358	43.174481	12/1/2014	0 - 0.5	X	X	X	X	X	--	--	
OU2-SS03-Z1/D	SO	FD	-78.689358	43.174481	12/1/2014	0 - 0.5	X	X	X	X	X	--	--	Field Duplicate
OU2-SS03-Z2	SO	N	-78.689358	43.174481	12/1/2014	0.5 - 2	X	X	X	X	X	--	--	
OU2-SS04-Z1	SO	N	-78.689180	43.174713	12/1/2014	0 - 0.5	X	X	X	X	X	--	--	
OU2-SS04-Z2	SO	N	-78.689180	43.174713	12/1/2014	0.5 - 2	X	X	X	X	X	--	--	
OU2-SS05-Z1	SO	N	-78.689641	43.174809	12/1/2014	0 - 0.5	X	X	X	X	X	X	X	
OU2-SS05-Z2	SO	N	-78.689641	43.174809	12/1/2014	0.5 - 2	X	X	X	X	X	--	--	
OU2-SS06-Z1	SO	N	-78.689320	43.175063	12/1/2014	0 - 0.5	X	X	X	X	X	--	--	
OU2-SS06-Z2	SO	N	-78.689320	43.175063	12/1/2014	0.5 - 2	X	X	X	X	X	--	--	
OU2-SS07-Z1	SO	N	-78.689855	43.175213	12/1/2014	0 - 0.5	X	X	X	X	X	--	--	
OU2-SS07-Z2	SO	N	-78.689855	43.175213	12/1/2014	0.5 - 2	X	X	X	X	X	--	--	
OU2-SS08-Z1	SO	N	-78.689855	43.175541	12/1/2014	0 - 0.5	X	X	X	X	X	--	--	
OU2-SS08-Z2	SO	N	-78.689855	43.175541	12/1/2014	0.5 - 2	X	X	X	X	X	--	--	
OU2-SS22	SO	N	-78.688645	43.176968	1/25/2016	0 - 1	X	X	X	X	--	--	--	
OU2-SS23	SO	N	-78.689023	43.176386	1/25/2016	0 - 1	X	X	X	X	--	--	--	
OU2-SS24	SO	N	-78.689436	43.175598	1/25/2016	0 - 1	X	X	X	X	--	--	--	

Table 2-1a Summary of Soil Samples Collected, Eighteenmile Creek RI OU2

Sample Name	Sample Matrix	Sample Type	X-Coordinates	Y-Coordinates	Sample Date	Interval Sample (ft)	Analysis							Comments
							Metals	PCB Aroclors	Pesticides	SVOCs	VOCs	PCB Congeners	Dioxins	
Upson Park HAZ Area														
OU2-SS09-Z1	SO	N	-78.689603	43.175842	12/1/2014	0 - 0.5	X	X	X	X	X	X	X	
OU2-SS09-Z2	SO	N	-78.689603	43.175842	12/1/2014	0.5 - 2	X	X	X	X	X	--	--	
OU2-SS10-Z1	SO	N	-78.689376	43.176158	12/1/2014	0 - 0.5	X	X	X	X	X	--	--	
OU2-SS10-Z2	SO	N	-78.689376	43.176158	12/1/2014	0.5 - 2	X	X	X	X	X	--	--	
OU2-SS11-Z1	SO	N	-78.689471	43.175615	5/18/2015	0 - 0.5	--	X	--	--	--	--	--	
OU2-SS11-Z1-Q	SO	FD	-78.689471	43.175615	5/18/2015	0 - 0.5	--	X	--	--	--	--	--	Field Duplicate
OU2-SS11-Z2	SO	N	-78.689471	43.175615	5/18/2015	1 - 1.5	--	X	--	--	--	--	--	
OU2-SS11-Z3	SO	N	-78.689471	43.175615	5/18/2015	1.5 - 2.8	--	X	--	--	--	--	--	
OU2-SS12-Z1	SO	N	-78.689422	43.175705	5/18/2015	0 - 0.5	--	X	--	--	--	--	X	
OU2-SS12-Z2	SO	N	-78.689422	43.175705	5/18/2015	1 - 2	--	X	--	--	--	--	--	
OU2-SS12-Z3	SO	N	-78.689422	43.175705	5/18/2015	2 - 2.9	--	X	--	--	--	--	--	
OU2-SS13-Z1	SO	N	-78.689654	43.175790	5/18/2015	0 - 0.5	--	X	--	--	--	X	--	
OU2-SS13-Z2	SO	N	-78.689654	43.175790	5/18/2015	0.5 - 2	--	X	--	--	--	--	--	
OU2-SS13-Z3	SO	N	-78.689654	43.175790	5/18/2015	2 - 3	--	X	--	--	--	--	--	
OU2-SS14-Z1	SO	N	-78.689555	43.175899	5/18/2015	0 - 0.5	--	X	--	--	--	--	--	
OU2-SS14-Z1	SO	N	-78.689555	43.175899	5/18/2015	0 - 0.5	--	X	--	--	--	--	--	
OU2-SS14-Z2	SO	N	-78.689555	43.175899	5/18/2015	1.5 - 2	--	X	--	--	--	--	--	
OU2-SS14-Z3	SO	N	-78.689555	43.175899	5/18/2015	2 - 2.9	--	X	--	--	--	--	--	
United Paperboard Company Area														
OU2-SS18	SO	N	-78.688771	43.180116	1/25/2016	0 - 1	X	X	X	X	--	--	--	
OU2-SS19	SO	N	-78.688425	43.179606	1/25/2016	0 - 1	X	X	X	X	--	--	--	
OU2-SS19-Q	SO	FD	-78.688425	43.179606	1/25/2016	0 - 1	X	X	X	X	--	--	--	Field Duplicate
OU2-SS20	SO	N	-78.688185	43.178475	1/25/2016	0 - 1	X	X	X	X	--	--	--	
OU2-SS21	SO	N	-78.688715	43.178368	1/25/2016	0 - 1	X	X	X	X	--	--	--	
Flintkote Demo Area														
OU2-SB01-Z1	SO	N	-78.690091	43.182690	12/4/2014	2 - 10	X	X	X	X	X	--	--	
OU2-SB01-Z1/D	SO	FD	-78.690091	43.182690	12/4/2014	2 - 10	X	X	X	X	X	--	--	Field Duplicate
OU2-SB01-Z2	SO	N	-78.690091	43.182690	12/4/2014	2 - 10	X	X	X	X	X	--	--	
OU2-SB01-Z3	SO	N	-78.690091	43.182690	12/4/2014	2 - 10	X	X	X	X	X	--	--	
OU2-SB02-Z1	SO	N	-78.689903	43.182671	12/4/2014	2 - 10	X	X	X	X	X	X	X	
OU2-SB02-Z2	SO	N	-78.689903	43.182671	12/4/2014	2 - 10	X	X	X	X	X	--	--	
OU2-SB02-Z3	SO	N	-78.689903	43.182671	12/4/2014	2 - 10	X	X	X	X	X	--	--	
OU2-SB03-Z1	SO	N	-78.689890	43.182552	12/4/2014	2 - 10	X	X	X	X	X	--	--	
OU2-SB03-Z2	SO	N	-78.689890	43.182552	12/4/2014	2 - 10	X	X	X	X	X	--	--	
OU2-SB03-Z3	SO	N	-78.689890	43.182552	12/4/2014	2 - 10	X	X	X	X	X	--	--	
OU2-TP01-01	SO	N	-78.689748	43.182050	5/19/2015	2 - 10	X	X	X	X	X	--	--	
OU2-TP01-02	SO	N	-78.689748	43.182050	5/19/2015	2 - 10	X	X	X	X	X	--	--	
OU2-TP02-01	SO	N	-78.689484	43.181602	6/29/2015	2 - 10	X	X	X	X	X	--	--	
OU2-TP03-01	SO	N	-78.689392	43.181686	6/29/2015	2 - 10	X	X	X	X	X	--	--	

Table 2-1a Summary of Soil Samples Collected, Eighteenmile Creek RI OU2

Sample Name	Sample Matrix	Sample Type	X-Coordinates	Y-Coordinates	Sample Date	Interval Sample (ft)	Analysis							Comments
							Metals	PCB Aroclors	Pesticides	SVOCs	VOCs	PCB Congeners	Dioxins	
OU2-TP03-02	SO	N	-78.689392	43.181686	6/29/2015	2 - 10	X	X	X	X	X	--	--	
OU2-TP05-01	SO	N	-78.689758	43.181782	6/29/2015	2 - 10	X	X	X	X	X	--	--	
OU2-TP06-01	SO	N	-78.689529	43.181732	6/29/2015	2 - 10	X	X	X	X	X	--	--	
OU2-TP07-Z1	SO	N	-78.689519	43.181503	7/14/2015	2 - 10	X	X	X	X	X	--	--	
OU2-TP07-Z2	SO	N	-78.689519	43.181503	7/14/2015	2 - 10	X	X	X	X	X	--	--	
OU2-TP08-Z1	SO	N	-78.689581	43.181483	7/14/2015	2 - 10	X	X	X	X	X	--	--	
OU2-TP09-Z1	SO	N	-78.689569	43.181458	7/14/2015	2 - 10	X	X	X	X	X	--	--	
OU2-TP09-Z2	SO	N	-78.689569	43.181458	7/14/2015	2 - 10	X	X	X	X	X	--	--	
OU2-ARCH-SP	SL	N	-78.689594	43.181569	6/30/2015	0 - 0.5	X	X	X	X	X	--	--	Sediment
OU2-ARCH-Z1	SL	N	-78.689594	43.181569	7/14/2015	28 - 30	X	X	X	X	X	--	--	Sediment
OU2-FL-TURB	SL	N	-78.689539	43.181528	6/30/2015	0 - 2	X	X	X	X	X	--	--	Sediment
OU2-FL-US	W	N	-78.689606	43.181578	6/30/2015	--	--	X	--	--	X	--	--	Surface Water
OU2-FL-DS	W	N	-78.689611	43.181556	6/30/2015	--	--	X	--	--	X	--	--	Surface Water
OU2-SS15	SO	N	-78.691336	43.182020	1/25/2016	0 - 1	X	X	X	X	--	--	--	
OU2-SS16	SO	N	-78.690048	43.182073	1/26/2016	0 - 1	X	X	X	X	--	--	--	
OU2-SS17	SO	N	-78.690083	43.181618	1/26/2016	0 - 1	X	X	X	X	--	--	--	

Key:

BG1-SS = Eighteenmile Creek background surface soil

FD = Field duplicate sample

N = Normal sample

SL = Sludge

SO = Soil

OU2-SB = Eighteenmile Creek OU2 soil boring

OU2-SS = Eighteenmile Creek OU2 surface soil

OU2-TP = Eighteenmile Creek OU2 test pit

W = Water

Table 2-1b Summary of Water Samples Collected, Eighteenmile Creek RI OU2

Sample Name	Sample Matrix	Sample Type	X-Coordinates	Y-Coordinates	Sample Date	Screen Interval (ft bgs)	Analysis						Comments
							Metals	PCB Aroclors	Pesticides	SVOCs	VOCs	PCB Congeners	
Groundwater - Screening													
OU2-GW01-Z1	WG	N	-78.689761	43.178529	12/4/2014	7.5 - 8.4	--	--	--	--	X	--	
OU2-GW01-Z1/D	WG	FD	-78.689761	43.178529	12/4/2014	7.5 - 8.4	--	--	--	--	X	--	Field Duplicate
Monitoring Wells													
OU2-MW05	WG	N	-78.688632	43.179122	12/18/2014	13 - 23	X	X	X	X	X	--	
OU2-MW05	WG	N	-78.688632	43.179122	5/19/2015	13 - 23	X	X	X	X	X	--	
OU2-MW09	WG	N	-78.688835	43.177929	12/18/2014	9 - 14	--	--	--	--	X	--	
OU2-MW09	WG	N	-78.688835	43.177929	5/20/2015	9 - 14	--	--	--	--	X	--	
OU2-MW14	WG	N	-78.688593	43.176933	12/18/2014	20 - 25	X	X	X	X	X	--	
OU2-MW14	WG	N	-78.688593	43.176933	5/19/2015	20 - 25	X	X	X	X	X	--	
OU2-MW15	WG	N	-78.689143	43.176265	12/19/2014	16.7 - 21.7	X	X	X	X	X	--	
OU2-MW15	WG	N	-78.689143	43.176265	5/19/2015	16.7 - 21.7	X	X	X	X	X	--	
OU2-MW16	WG	N	-78.689840	43.175910	12/18/2014	15 - 25	X	X	X	X	X	--	
OU2-MW16/D	WG	FD	-78.689840	43.175910	12/18/2014	15 - 25	X	X	X	X	X	--	Field Duplicate
OU2-MW16	WG	N	-78.689840	43.175910	5/18/2015	15 - 25	X	X	X	X	X	--	
OU2-MW16-Q	WG	FD	-78.689840	43.175910	5/18/2015	15 - 25	X	X	X	X	X	--	Field Duplicate
OU2-MW18	WG	N	-78.689761	43.178529	12/19/2014	35.9 - 45.9	X	X	X	X	X	--	
OU2-MW18	WG	N	-78.689761	43.178529	5/20/2015	35.9 - 45.9	X	X	X	X	X	--	
Background Surface Water													
BG1-SW01	WS	N	-78.568716	43.209728	5/21/2015	--	X	--	X	X	X	X	Chemistry and Toxicity
Corridor Surface Water													
OU2-SW01	WS	N	-78.689534	43.181157	5/20/2015	--	X	--	X	X	X	X	Chemistry and Toxicity
OU2-SW02	WS	N	-78.688420	43.178361	5/21/2015	--	X	--	X	X	X	X	Chemistry and Toxicity
OU2-SW03	WS	N	-78.688464	43.178805	5/26/2015	--	X	--	X	X	X	X	Chemistry and Toxicity
Well Points													
OU2-WP01	WG	N	-78.689765	43.180706	1/26/2016	--	--	X	--	--	--	--	
OU2-WP02	WG	N	-78.688946	43.180478	1/25/2016	--	--	X	--	--	--	--	

Key:

FD = Field duplicate sample

N = Normal sample

OU2-MW = Eighteenmile Creek OU2 monitoring well

OU2-SW = Eighteenmile Creek OU2 surface water

OU2-WP = Eighteenmile Creek OU2 well point

WG = Groundwater

WS = Surface water

Table 2-1c Summary of Fish Samples Collected, Eighteenmile Creek RI OU2

Sample Name	Sample Matrix	Sample Type	X-Coordinates	Y-Coordinates	Sample Date	Analysis							Comments
						Metals	PCB Aroclors	Pesticides	SVOCs	Percent Lipids	PCB Congeners	Dioxins	
Background Fish Samples													
BG1-CAR-01	TA	N	-78.568716	43.209728	5/21/2015	X	X	X	X	X	--	--	Game Fish
BG1-CAR-02	TA	N	-78.568716	43.209728	5/21/2015	X	X	X	X	X	--	--	Game Fish
BG1-CAR-03	TA	N	-78.568716	43.209728	5/21/2015	X	X	X	X	X	--	--	Game Fish
BG1-CAR-04	TA	N	-78.568716	43.209728	5/21/2015	X	X	X	X	X	--	--	Game Fish
BG1-CAR-05	TA	N	-78.568716	43.209728	5/21/2015	X	X	X	X	X	--	--	Game Fish
BG1-CAR-06	TA	N	-78.568716	43.209728	5/21/2015	X	X	X	X	X	--	--	Game Fish
BG1-CAR-07	TA	N	-78.568716	43.209728	5/21/2015	X	X	X	X	X	--	--	Game Fish
BG1-CAR-08	TA	N	-78.568716	43.209728	5/21/2015	X	X	X	X	X	--	--	Game Fish
BG1-CAR-09	TA	N	-78.568716	43.209728	5/21/2015	X	X	X	X	X	--	--	Game Fish
BG1-LMB-01	TA	N	-78.568716	43.209728	5/21/2015	X	X	X	X	--	X	X	Game Fish
BG1-PUM-C01	TA	N	-78.568716	43.209728	5/21/2015	X	X	X	X	X	X	X	Forage Fish Composite
BG1-ROC-C01	TA	N	-78.568716	43.209728	5/21/2015	X	X	X	X	X	--	--	Forage Fish Composite
BG1-BLU-C01	TA	N	-78.568716	43.209728	5/21/2015	X	X	X	X	X	--	--	Forage Fish Composite
BG1-CRA-C01[1]	TA	N	-78.568716	43.209728	5/21/2015	X	X	X	X	--	--	--	Forage Fish Composite
Corridor Fish Samples													
OU2-RED-01	TA	N	-78.689534	43.181157	5/21/2015	X	X	X	X	X	--	--	Game Fish
OU2-RED-02	TA	N	-78.689534	43.181157	5/21/2015	X	X	X	X	X	--	--	Game Fish
OU2-RED-03	TA	N	-78.689534	43.181157	5/21/2015	X	X	X	X	X	--	--	Game Fish
OU2-SMB-01	TA	N	-78.689534	43.181157	5/21/2015	--	X	X	--	--	X	X	Game Fish
OU2-SMB-02	TA	N	-78.689534	43.181157	5/21/2015	X	X	X	--	--	--	--	Game Fish
OU2-SMB-03	TA	N	-78.689534	43.181157	5/21/2015	X	X	X	X	X	--	--	Game Fish
OU2-SMB-04	TA	N	-78.689534	43.181157	5/21/2015	X	X	X	X		--	--	Game Fish
OU2-WAL-01	TA	N	-78.689534	43.181157	5/21/2015	X	X	X	X	X	--	--	Game Fish
OU2-WAL-02	TA	N	-78.689534	43.181157	5/21/2015	X	X	X	X	X	--	--	Game Fish
OU2-WAL-03	TA	N	-78.689534	43.181157	5/21/2015	X	X	X	X	X	--	--	Game Fish
OU2-ROC-C01	TA	N	-78.689534	43.181157	5/21/2015	X	X	X	X	X	X	X	Forage Fish Composite
OU2-ROC-C02	TA	N	-78.689534	43.181157	5/21/2015	X	X	X	X	X	--	--	Forage Fish Composite
OU2-ROC-C03[2]	TA	N	-78.689534	43.181157	5/21/2015	X	X	X	X	X	--	--	Forage Fish Composite

Notes

1. Only one fish was composited due to a lack of number of species.
2. This sample is a composite of rock bass and pumpkinseed fish.

Key:

BG1-BLU = Eighteenmile Creek background bluegill
BG1-CAR = Eighteenmile Creek background crappie
BG1-LMB = Eighteenmile Creek background largemouth bass
BG1-PUM = Eighteenmile Creek background pumpkinseed
BG1-ROC = Eighteenmile Creek background rock bass
N = Normal sample
OU2-RED = Eighteenmile Creek OU2 silver redhorse
OU2-ROC = Eighteenmile Creek OU2 rock bass
OU2-SMB = Eighteenmile Creek OU2 smallmouth bass
OU2-WAL = Eighteenmile Creek OU2 walleye
TA = Fish tissue

Table 2-1d Summary of Sediment Samples Collected, Eighteenmile Creek RI OU2

Sample Name	Sample Matrix	Sample Type	X-Coordinates	Y-Coordinates	Sample Date	Interval Sampled (ft)	Analysis										Comments
							Metals	Acid Volatile Sulfides	Metals-SEM	PCB Aroclors	Pesticides	SVOCs	VOCs	Total Organic Carbon	PCB Congeners	Dioxins	
Background Sediment																	
BG1-SED01	SE	N	-78.568716	43.209728	5/21/2015	0 - 0.5	X	X	X	X	X	X	X	X	X	X	Chemistry and Toxicity
BG1-SED02	SE	N	-78.568354	43.209470	5/22/2015	0 - 0.5	X	--	--	X	X	X	X	X	--	--	
BG1-SED03	SE	N	-78.567800	43.209149	5/22/2015	0 - 0.5	X	--	--	X	X	X	X	X	--	--	
BG1-SED04	SE	N	-78.564643	43.207564	5/22/2015	0 - 0.5	X	--	--	X	X	X	X	X	--	--	
BG1-SED05	SE	N	-78.564574	43.207165	5/22/2015	0 - 0.5	X	--	--	X	X	X	X	X	--	--	
BG1-SED06	SE	N	-78.564610	43.206778	5/22/2015	0 - 0.5	X	--	--	X	X	X	X	X	--	--	
BG1-SED07	SE	N	-78.563802	43.206175	5/22/2015	0 - 0.5	X	--	--	X	X	X	X	X	--	--	
Corridor Sediment																	
OU2-SED01	SE	N	-78.689534	43.181157	5/26/2015	0 - 0.5	X	X	X	X	X	X	X	X	--	--	Chemistry and Toxicity
OU2-SED02	SE	N	-78.688420	43.178361	5/21/2015	0 - 0.5	X	X	X	X	X	X	X	X	X	X	Chemistry and Toxicity
OU2-SED03	SE	N	-78.688464	43.178805	5/26/2015	0 - 0.5	X	X	X	X	X	X	X	X	--	--	Chemistry and Toxicity
OU2-SED04	SE	N	-78.688386	43.178330	1/25/2016	0 - 6	X	--	X	X	--	X	--	--	--	--	
OU2-SED04-Q	SE	FD	-78.688386	43.178330	1/25/2016	0 - 6	X	--	X	X	--	X	--	--	--	--	
OU2-SED05	SE	N	-78.688388	43.177015	1/26/2016	0 - 6	X	--	X	X	--	X	--	--	--	--	
OU2-SED06	SE	N	-78.690251	43.181096	1/26/2016	0 - 6	X	--	X	X	--	X	--	--	--	--	
OU2-SED07	SE	N	-78.689360	43.180970	1/26/2016	0 - 6	X	--	X	X	--	X	--	--	--	--	
OU2-SED08	SE	N	-78.690861	43.182443	1/26/2016	0 - 6	X	--	X	X	--	X	--	--	--	--	
OU2-SED09	SE	N	-78.688601	43.179000	1/26/2016	0 - 6	X	--	X	X	--	X	--	--	--	--	

Key:

BG1-SED = Eighteenmile Creek background sediment

FD = Field duplicate sample

N = Normal sample

SE = Sediment

OU2-SED = Eighteenmile Creek OU2 sediment

Table 2-2 Monitoring Well Construction, Eighteenmile Creek RI OU2

Monitoring Well ID	Well Completion	Well Type	Northing	Easting	TOIC Elevation (ft AMSL)	Ground Surface Elevation (ft AMSL)	Depth to Bedrock (feet BGS)	Total Well Depth (ft BGS)	Screen Interval (ft BGS)	Sand Pack Interval (ft BGS)
18MC-MW-01	Above Ground	O	1,158,834.731	1,120,183.215	480.45	477.68	>22.0	22.0	12.0-22.0	10.0-22.0
18MC-MW-02	Above Ground	O	1,158,700.903	1,120,298.654	488.42	486.31	>30.0	28.0	18.0-28.0	16.0-28.0
18MC-MW-04	Above Ground	O	1,158,577.035	1,120,302.619	490.08	487.67	>26.0	26.0	16.0-26.0	14.0-26.0
18MC-MW-05	Above Ground	O	1,158,375.878	1,120,205.726	481.14	479.03	>23.0	23.0	13.0-23.0	11.0-23.0
18MC-MW-06	Flush	O	1,158,369.892	1,120,421.414	488.42	488.88	26.00	25.0	15.0-25.0	13.0-25.0
18MC-MW-08	Above Ground	O	1,157,857.947	1,120,356.158	491.62	488.91	16.00	16.0	6.0-16.0	4.0-16.0
18MC-MW-09	Flush	B	1,157,941.174	1,120,150.986	501.43	501.74	9.00	14.0	9.0-14.0	7.0-14.0
18MC-MW-10	Above Ground	O	1,157,698.176	1,120,387.09	493.77	490.54	18.00	17.0	7.0-17.0	5.0-17.0
18MC-MW-11	Flush	O	1,157,802.241	1,120,668.786	492.97	493.12	14.00	13.5	8.5-13.5	6.5-13.5
18MC-MW-12	Above Ground	O	1,157,622.865	1,120,537.622	495.06	492.68	>14.5	14.5	9.5-14.5	7.5-14.5
18MC-MW-13	Above Ground	O	1,157,502.776	1,120,677.517	496.07	493.52	10.00	9.0	4.0-9.0	2.0-9.0
18MC-MW-14	Flush	B	1,157,578.022	1,120,214.997	496.15	496.39	20.50	25.0	20.0-25.0	18.0-25.0
18MC-MW-15	Above Ground	B	1,157,334.775	1,120,067.983	506.85	504.42	16.70	21.7	16.7-21.7	14.7-21.7
18MC-MW-16	Above Ground	B	1,157,205.429	1,119,881.82	520.75	518.36	9.50	25.0	15.0-25.0	13.0-25.0
18MC-MW-17	Flush	O	1,156,791.828	1,119,981.357	516.88	517.16	>26.0	26.0	16.0-26.0	14.0-26.0
18MC-MW-18	Flush	B	1,158,160.060	1,119,904.300	507.71	508.01	8.00	45.9	35.9-45.9	33.9-45.9

Notes:
1. Horizontal Datum is NYS NAD 83(96) East Zone.
2. Vertical Datum is NGVD 88.

Key:

AMSL = Above mean sea level.
B = Bedrock.
BGS = Below ground surface.
ft = Feet.
O = Overburden.
TOIC = Top of Inner Casing.

Table 2-3 Groundwater Elevation Data, Eighteenmile Creek RI OU2

Well ID	Inner Casing Elevation (ft AMSL)	July 2007		November 2007		December 2014		May 2015	
		Water Level (ft BTOIC)	Water Level Elevation (ft AMSL)	Water Level (ft BTOIC)	Water Level Elevation (ft AMSL)	Water Level (ft BTOIC)	Water Level Elevation (ft AMSL)	Water Level (ft BTOIC)	Water Level Elevation (ft AMSL)
18MC-MW01	480.45	14.91	465.54	15.00	465.45	NM	NM	NM	NM
18MC-MW02	488.42	17.20	471.22	17.95	470.47	NM	NM	NM	NM
18MC-MW04	490.08	19.30	470.78	20.00	470.08	NM	NM	NM	NM
18MC-MW05	481.14	14.74	466.40	13.80	467.34	12.15	468.99	13.10	468.04
18MC-MW06	488.42	15.90	472.52	16.00	472.42	NM	NM	NM	NM
18MC-MW08	491.40	11.54	479.86	11.58	479.82	NM	NM	NM	NM
18MC-MW09	501.43	12.90	488.53	12.93	488.50	11.00	490.43	NM	NM
18MC-MW10	493.77	12.08	481.69	12.35	481.42	NM	NM	NM	NM
18MC-MW11	492.97	7.20	485.77	9.51	483.46	NM	NM	NM	NM
18MC-MW12	495.06	12.37	482.69	13.10	481.96	NM	NM	NM	NM
18MC-MW13	496.07	7.33	488.74	8.05	488.02	NM	NM	NM	NM
18MC-MW14	496.15	18.10	478.05	17.30	478.85	NM	NM	16.60	479.55
18MC-MW15	506.85	20.00	486.85	19.97	486.88	15.30	480.85	19.00	487.85
18MC-MW16	520.75	18.03	502.72	18.80	501.95	18.80	488.05	16.22	504.53
18MC-MW17	516.88	15.12	501.76	25.02	491.86	16.11	504.64	NM	NM
18MC-MW18	507.71	NM	NM	NM	NM	19.05	488.66	24.05	456.39
198-E	480.44	15.71	464.73	15.90	464.54	NM	NM	NM	NM
198-F	479.48	14.62	464.86	14.65	464.83	NM	NM	NM	NM
MCW-1	470.23	5.52	464.71	5.55	464.68	NM	NM	NM	NM

KEY:

AMSL = Above Mean Sea Level.
BTOIC = Below top of inner Casing.
ft = Feet.
NM = Not measured.

Table 2-4 Summary of Water Quality Field Data, Eighteenmile Creek RI OU2

Well and Sample ID	Sample Date	Purged Volume (gal)	pH (s.u.)	Temperature (°C)	Conductivity (µS/cm)	Turbidity (NTUs)
OU2-MW05	12/18/14	15(1)	6.91	11.7	2,495	5.97
OU2-MW05	05/19/15	5.9	7.13	11.3	2,120	9.57(3)
OU2-MW09	12/18/14	--(2)	NM	NM	NM	NM
OU2-MW09	05/20/15	--(2)	NM	NM	NM	NM
OU2-MW14	12/18/14	9.0	7.12	11.5	1,854	1.03
OU2-MW14	05/19/15	4.1	7.18	10.2	2,040	1.55
OU2-MW15	12/19/14	7.9	7.12	11.6	2,682	3.9(3)
OU2-MW15	05/19/15	3.7	7.15	11.0	3,160	10.48(3)
OU2-MW16	12/18/14	14.0	7.15	11.1	2,517	14(3)
OU2-MW16	05/18/15	6.4	7.13	12.3	3,450	2.23(3)
OU2-MW18	12/19/14	--(4)	7.91	10.6	3,145	6.81
OU2-MW18	05/20/15	10.5	7.35	15.2	5,870	1.92
BG1-SW01	05/21/15	--	8.20	16.3	6,300	11.8
OU2-SW01	05/20/15	--	8.17	15.6	5,340	9.59
OU2-SW02	05/21/15	--	8.08	17.4	6,800	11.9
OU2-SW03	05/26/15	--	NM	NM	NM	NM

Notes:

(1) Well was purged dry before parameters stabilized.
(2) Well had approximately 2 feet of water and historically has poor recharge. Therefore, it was not purged and only VOCs were sampled with bailer.
(3) Turbidity continually decreased but did not stabilize.
(4) Sample collected immediately after development.

Key:

BG1-SW = Eighteenmile Creek background surface water.
OU2-MW = Eighteenmile Creek OU2 monitoring well.
OU2-SW = Eighteenmile Creek OU2 surface water.
°C = Degrees Celsius.
gal = Gallons.
µS/cm = Microsiemens per centimeter.
NTU = Nephelometric turbidity units.
s.u. = Standard units.
-- = Not applicable.
NM= Not measured.

Table 2-5 Fish Collection Data, Eighteenmile Creek RI OU2

Date	Station	Method	Common Name	*Genus Species*	Length (total, mm)	Weigt (g)	Anomolies	Sample Name
5/22/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Common Carp	*Cyprinus carpio*	522	1814		BG1-CAR01
5/22/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Common Carp	*Cyprinus carpio*	550	1956		BG1-CAR02
5/22/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Common Carp	*Cyprinus carpio*	457	1162		BG1-CAR03
5/22/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Common Carp	*Cyprinus carpio*	462	1361		BG1-CAR04
5/22/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Common Carp	*Cyprinus carpio*	452	1219		BG1-CAR05
5/22/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Common Carp	*Cyprinus carpio*	436	1134		BG1-CAR06
5/22/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Common Carp	*Cyprinus carpio*	497	1503		BG1-CAR07
5/22/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Common Carp	*Cyprinus carpio*	433	1191		BG1-CAR08
5/22/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Common Carp	*Cyprinus carpio*	401	964		BG1-CAR09
5/22/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Largemouth Bass	*Micropterus salmoides*	293	403		BG1-LMB01
5/21/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Pumpkinseed	*Lepomis gibbosus*	126	51		BG1-PUM-C01
5/21/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Pumpkinseed	*Lepomis gibbosus*	167	125		BG1-PUM-C01
5/21/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Pumpkinseed	*Lepomis gibbosus*	133	48		BG1-PUM-C01
5/21/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Pumpkinseed	*Lepomis gibbosus*	129	54		BG1-PUM-C01
5/21/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Pumpkinseed	*Lepomis gibbosus*	90	17		BG1-PUM-C01
5/21/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Pumpkinseed	*Lepomis gibbosus*	130	57		BG1-PUM-C01
5/21/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Pumpkinseed	*Lepomis gibbosus*	127	40		BG1-PUM-C01
5/21/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Bluegill	*Lepomis macrochirus*	143	62		BG1-BLU-C01
5/21/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Bluegill	*Lepomis macrochirus*	131	48		BG1-BLU-C01
5/21/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Bluegill	*Lepomis macrochirus*	133	45		BG1-BLU-C01
5/21/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Bluegill	*Lepomis macrochirus*	144	65		BG1-BLU-C01
5/21/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Bluegill	*Lepomis macrochirus*	137	45		BG1-BLU-C01
5/21/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Bluegill	*Lepomis macrochirus*	144	65		BG1-BLU-C01
5/21/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Bluegill	*Lepomis macrochirus*	137	45		BG1-BLU-C01
5/21/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Rock Bass	*Ambloplites rupestris*	183	142		BG1-ROC-C01
5/21/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Rock Bass	*Ambloplites rupestris*	202	167		BG1-ROC-C01
5/21/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Rock Bass	*Ambloplites rupestris*	143	68		BG1-ROC-C01
5/21/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	Rock Bass	*Ambloplites rupestris*	113	28		BG1-ROC-C01
5/21/2015	Background: East Branch of EMC	Electrofishing, 2500 sec.	White Crappie	*Pomoxis annularis*	172	60		BG1-CRA-C01
5/21/2015	OU2 Corridor: Upstream of Clinton Dam	Electrofishing, 850 sec.	Silver Redhorse	*Moxostoma anisurum*	557	1503		OU2-RED-01
5/21/2015	OU2 Corridor: Upstream of Clinton Dam	Electrofishing, 850 sec.	Silver Redhorse	*Moxostoma anisurum*	396	595		OU2-RED-02
5/21/2015	OU2 Corridor: Upstream of Clinton Dam	Electrofishing, 850 sec.	Silver Redhorse	*Moxostoma anisurum*	380	567		OU2-RED-03
5/21/2015	OU2 Corridor: Upstream of Clinton Dam	Electrofishing, 850 sec.	Walleye	*Sander vitreus*	555	1332	Operculum scar	OU2-WAL-01
5/21/2015	OU2 Corridor: Upstream of Clinton Dam	Electrofishing, 850 sec.	Walleye	*Sander vitreus*	465	907		OU2-WAL-02
5/21/2015	OU2 Corridor: Upstream of Clinton Dam	Electrofishing, 850 sec.	Walleye	*Sander vitreus*	572	1389		OU2-WAL-03
5/21/2015	OU2 Corridor: Upstream of Clinton Dam	Electrofishing, 850 sec.	Smallmouth Bass	*Micropterus dolomieui*	300	335		OU2-SMB-01
5/21/2015	OU2 Corridor: Upstream of Clinton Dam	Electrofishing, 850 sec.	Smallmouth Bass	*Micropterus dolomieui*	276	244		OU2-SMB-02
5/20/2015	OU2 Corridor: Downstream of Clinton St.	Electrofishing, 750 sec.	Smallmouth Bass	*Micropterus dolomieui*	325	454		OU2-SMB-03
5/20/2015	OU2 Corridor: Downstream of Clinton St.	Electrofishing, 750 sec.	Smallmouth Bass	*Micropterus dolomieui*	295	332		OU2-SMB-04
5/21/2015	OU2 Corridor: Upstream of Clinton Dam	Electrofishing, 2500 sec.	Rock Bass	*Ambloplites rupestris*	196	153		OU2-ROC-C01
5/21/2015	OU2 Corridor: Upstream of Clinton Dam	Electrofishing, 2500 sec.	Rock Bass	*Ambloplites rupestris*	183	96		OU2-ROC-C01
5/21/2015	OU2 Corridor: Upstream of Clinton Dam	Electrofishing, 2500 sec.	Rock Bass	*Ambloplites rupestris*	201	179		OU2-ROC-C01
5/21/2015	OU2 Corridor: Upstream of Clinton Dam	Electrofishing, 2500 sec.	Rock Bass	*Ambloplites rupestris*	100	17		OU2-ROC-C01

Table 2-5 Fish Collection Data, Eighteenmile Creek RI OU2

Date	Station	Method	Common Name	*Genus Species*	Length (total, mm)	Weigt (g)	Anomolies	Sample Name
5/21/2015	OU2 Corridor: Upstream of Clinton Dam	Electrofishing, 2500 sec.	Rock Bass	*Ambloplites rupestris*	133	40		OU2-ROC-C01
5/21/2015	OU2 Corridor: Upstream of Clinton Dam	Electrofishing, 2500 sec.	Rock Bass	*Ambloplites rupestris*	196	142		OU2-ROC-C02
5/21/2015	OU2 Corridor: Upstream of Clinton Dam	Electrofishing, 2500 sec.	Rock Bass	*Ambloplites rupestris*	134	51		OU2-ROC-C02
5/21/2015	OU2 Corridor: Upstream of Clinton Dam	Electrofishing, 2500 sec.	Rock Bass	*Ambloplites rupestris*	172	96		OU2-ROC-C02
5/21/2015	OU2 Corridor: Upstream of Clinton Dam	Electrofishing, 2500 sec.	Rock Bass	*Ambloplites rupestris*	205	164		OU2-ROC-C02
5/21/2015	OU2 Corridor: Upstream of Clinton Dam	Electrofishing, 2500 sec.	Rock Bass	*Ambloplites rupestris*	172	105		OU2-ROC-C02
5/21/2015	OU2 Corridor: Downstream of Clinton Dam	Electrofishing, 2500 sec.	Rock Bass	*Ambloplites rupestris*	163	79		OU2-ROC-C03
5/21/2015	OU2 Corridor: Downstream of Clinton Dam	Electrofishing, 2500 sec.	Pumpkinseed	*Lepomis gibbosus*	100	20		OU2-ROC-C03

Key:

g = Gram
mm = Millimeter
sec = Seconds

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Document Path: L:\Buffalo\eighteenmile\Mxds\2016_March\Fig2-1 Soil_Sample_Locations.mxd Date: 6/7/2016

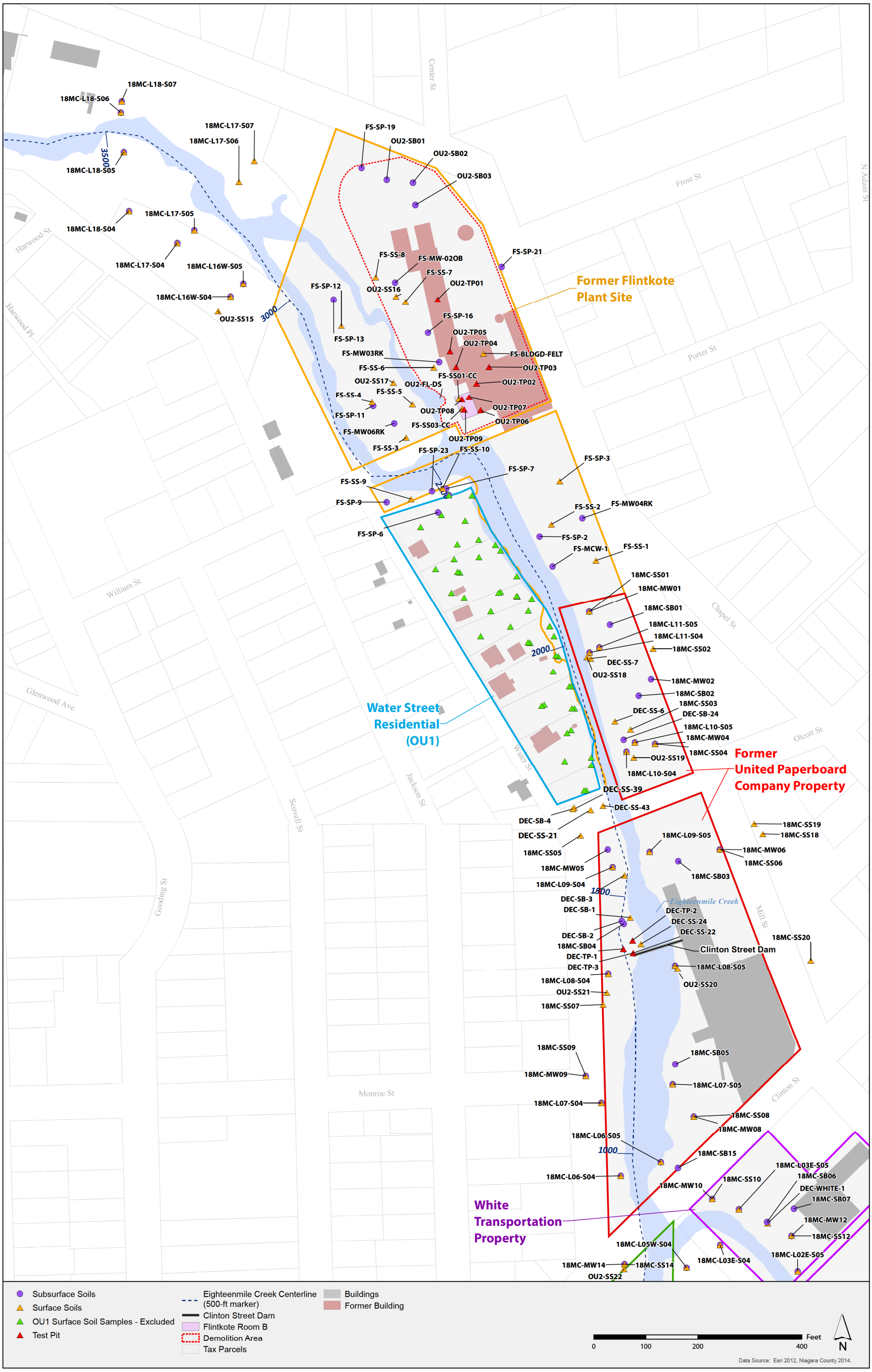

Figure 2-1
Soil Sample Locations, Eighteenmile Creek RI OU2
Map 1 of 2

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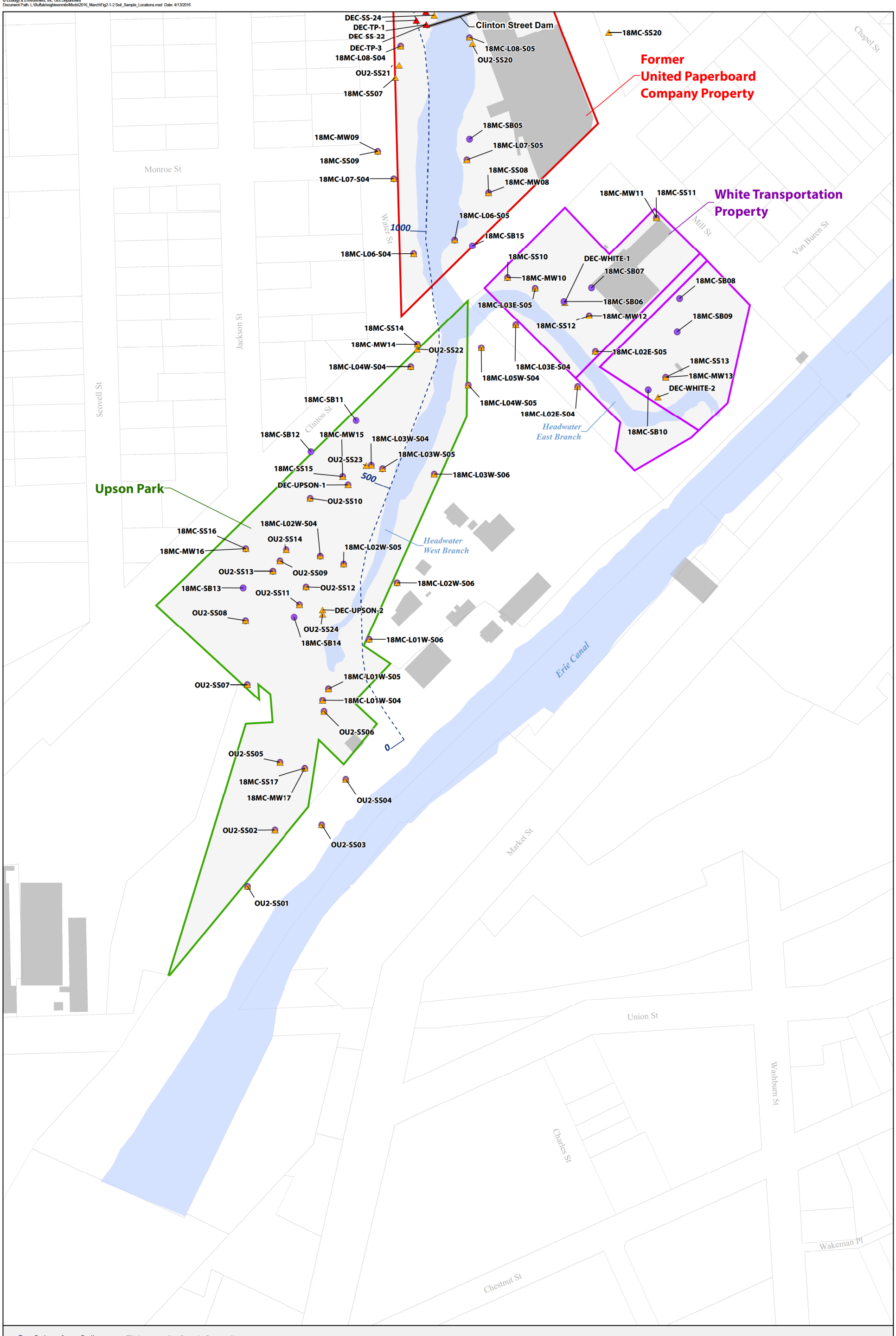


Figure 2-1
Soil Sample Locations, Eighteenmile Creek RI OU2
Map 2 of 2

© Ecology & Environment, Inc. GIS Department
Document Path: L:\Buffalo\eighteenmile\Mxds\2016_March\Fig2-2 Background_Soil_Locations.mxd Date: 4/13/2016

Niagara County

Lake Ave

Day Rd

N Canal Rd

Groff Rd

BG1-SS07

BG1-SS05

BG1-SS06

Erie Canal

BG1-SS03

BG1-SS04

Old Niagara Rd

Lockport Town and Country Club

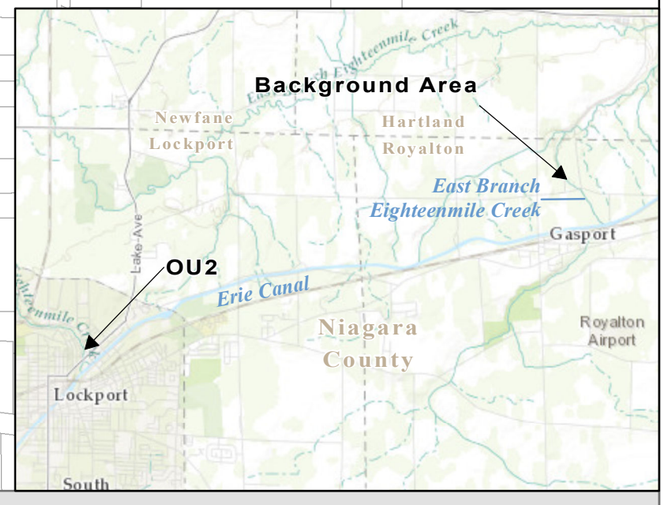
BG1-SS02

BG1-SS01

Market St

Cold Springs Rd

Chestnut Ridge Rd



Soil Sample Location - 11-24-2014

Tax Parcels (2014)

N

0 250 500 1,000 Feet

Figure 2-2
Soil Sample Background Locations
Eighteenmile Creek RI OU2

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Document Path: L:\Buffalo\eighteenmile\Mxds\2016_March\Fig2-3 MonitoringWells_11x17.mxd Date: 4/13/2016

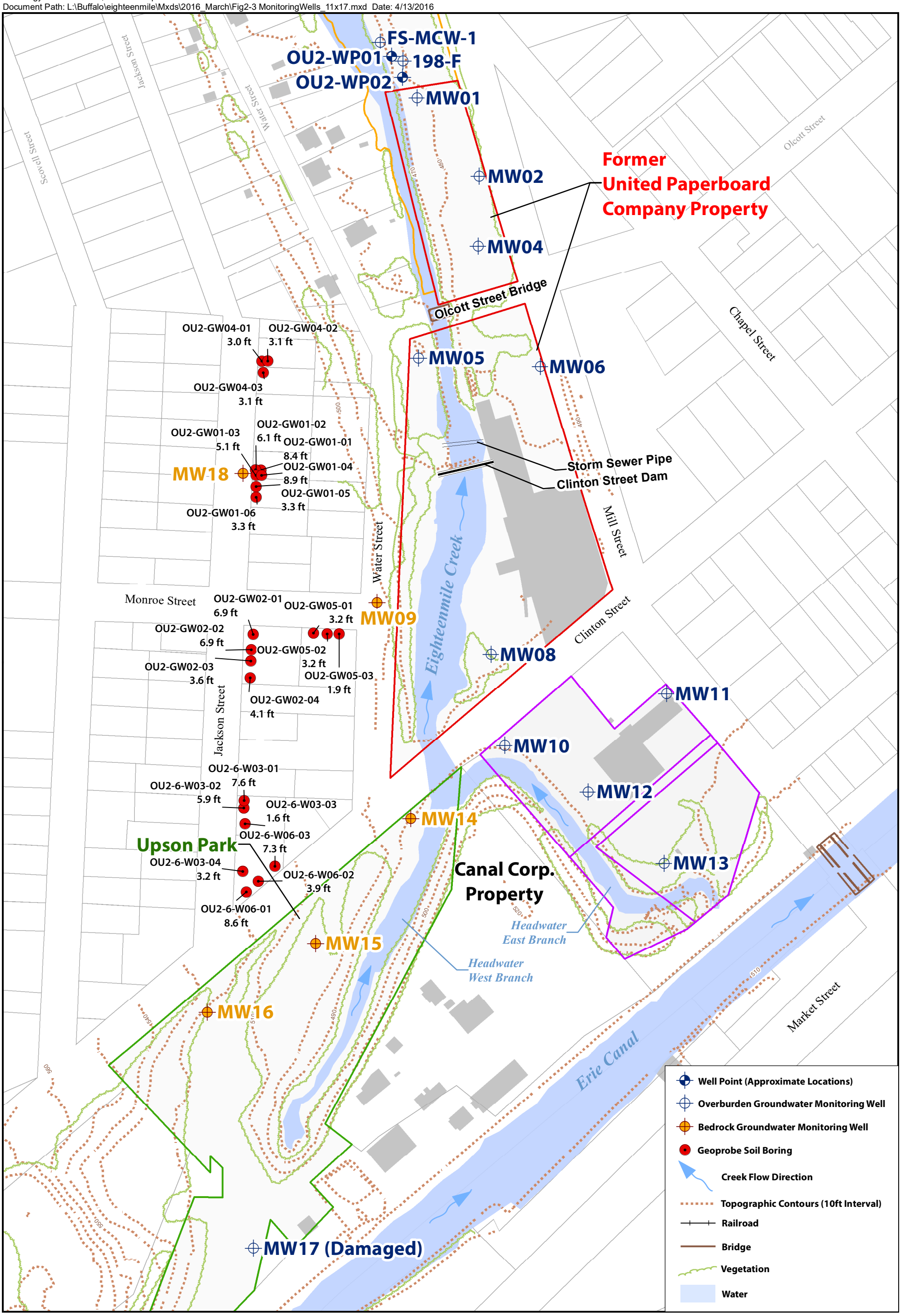

Figure 2-3 Monitoring Well, Geoprobe, and Well Point Locations, Eighteenmile Creek RI OU2

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Document Path: L:\Buffaloleighteenmile\Mxds\2016_March\Fig2-4 OU2_Creek_Sample_Locations_Northern.mxd Date: 6/9/2016

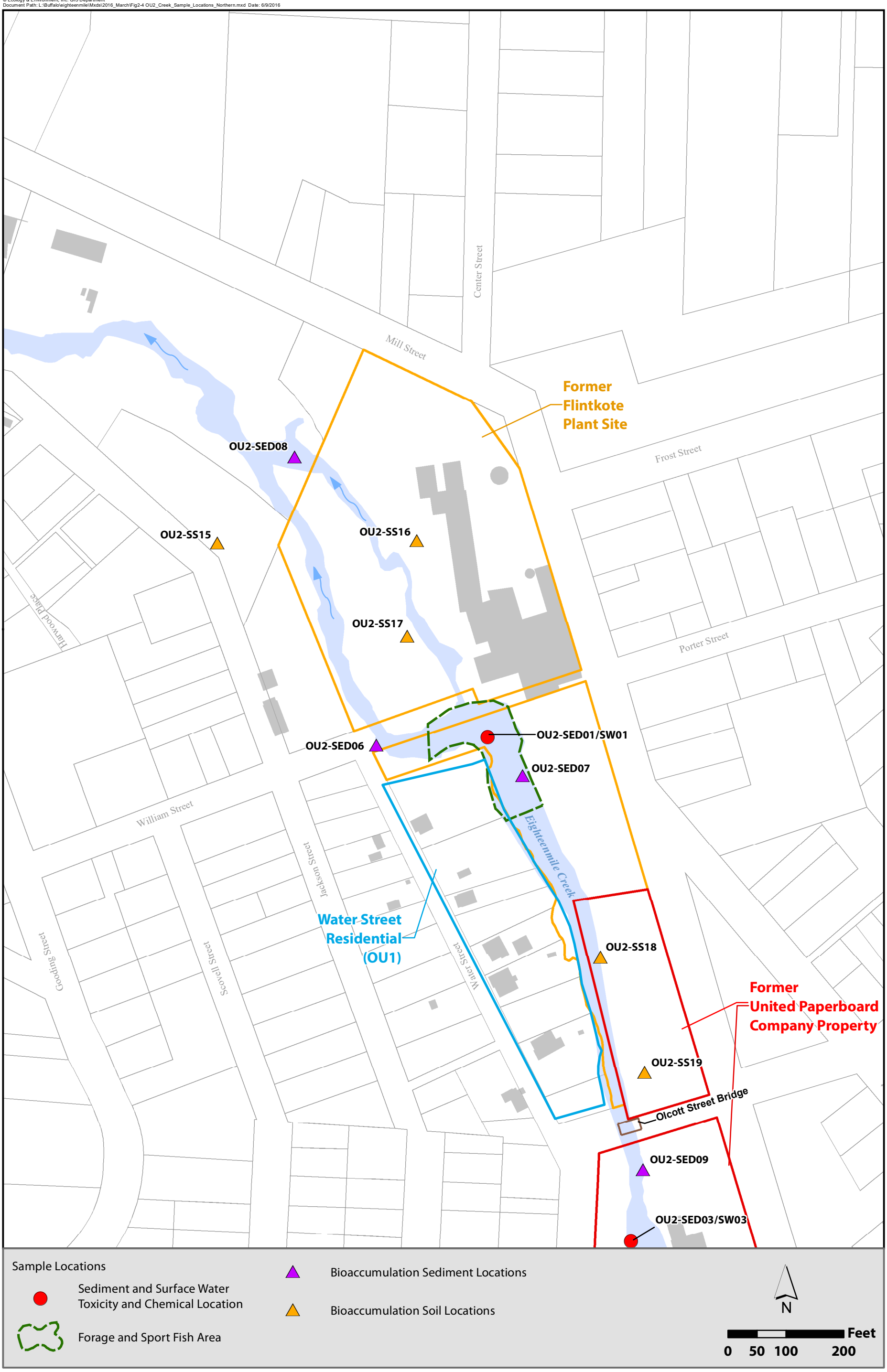

Figure 2-4 Toxicity, Bioaccumulation and Fish Sample Locations
Eighteenmile Creek RI OU2
Map 1 of 2

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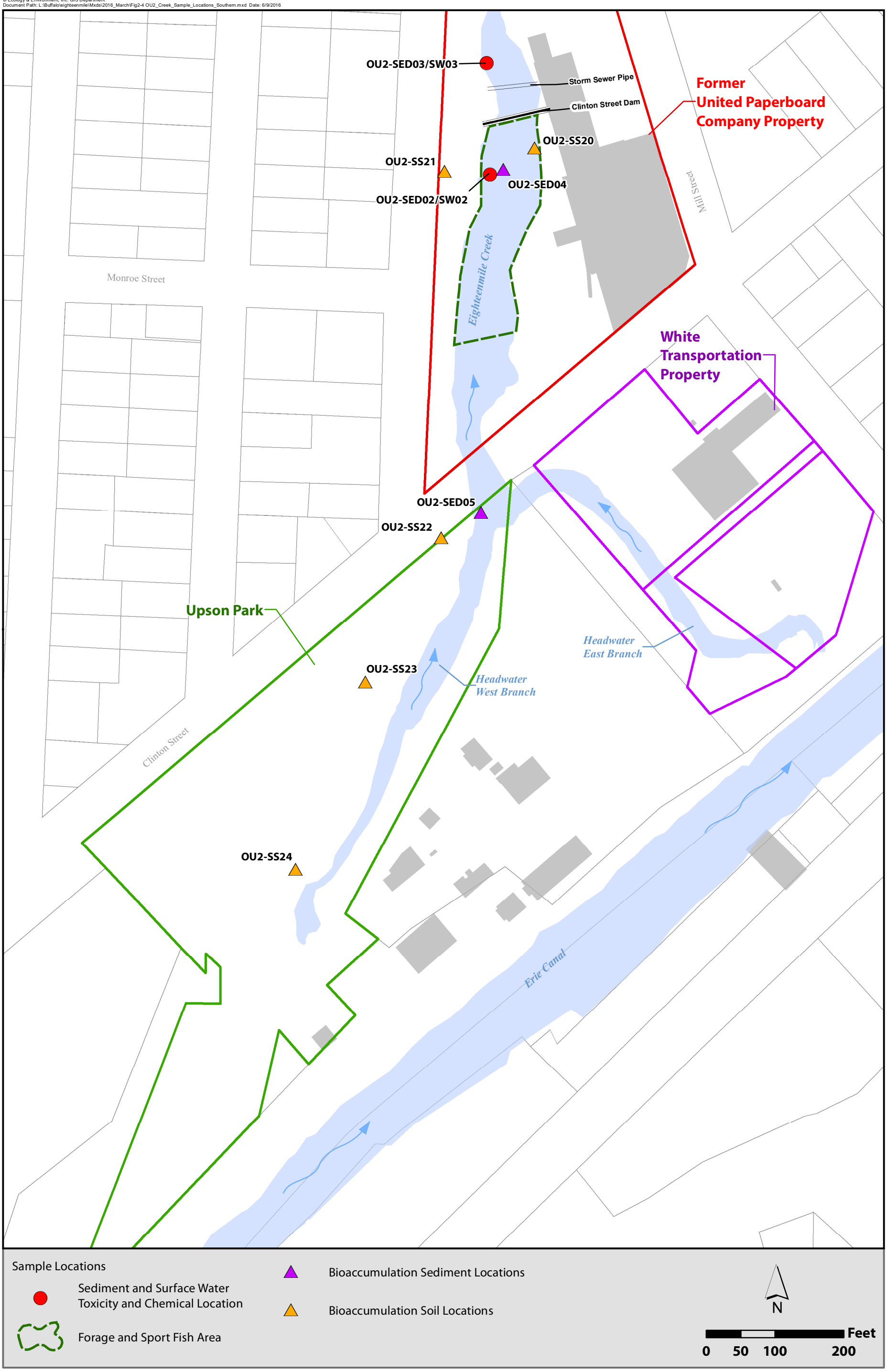

Figure 2-4 Toxicity, Bioaccumulation and Fish Sample Locations
Eighteenmile Creek RI OU2
Map 2 of 2

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Document Path: L:\Buffalo\eighteenmile\Mxds\2016_March\Fig2-5 Sediment_Samples.mxd Date: 4/13/2016

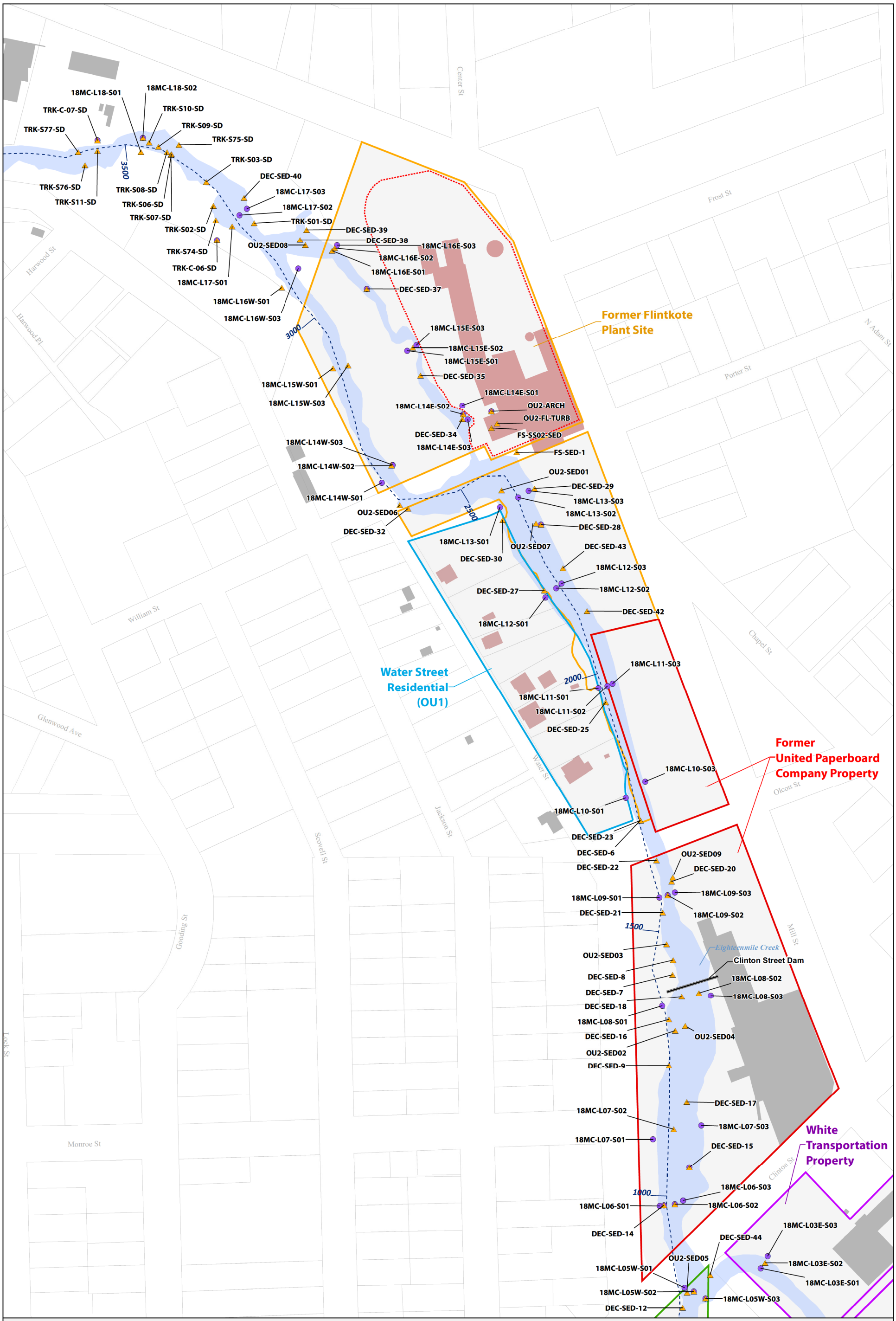

Figure 2-5
Sediment Sample Locations, Eighteenmile Creek RI OU2
Map 1 of 2

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Document Path: L:\Buffalo\eighteenmile\Mxds\2016_March\Fig2-5-2 Sediment_Samples.mxd Date: 4/13/2016

Clinton Street Dam
DEC-SED-7
18MC-L08-S03
DEC-SED-18
18MC-L08-S02
18MC-L08-S01
OU2-SED04
DEC-SED-16
OU2-SED02
DEC-SED-9
Former United Paperboard Company Property
DEC-SED-17
18MC-L07-S02
18MC-L07-S03
18MC-L07-S01
DEC-SED-15
White Transportation Property
Water St
1000
18MC-L06-S03
18MC-L06-S01
18MC-L06-S02
DEC-SED-14
18MC-L03E-S03
DEC-SED-44
OU2-SED05
18MC-L03E-S02
18MC-L05W-S01
18MC-L03E-S01
18MC-L05W-S02
18MC-L05W-S03
DEC-SED-12
18MC-L02E-S03
18MC-L01E-S01
18MC-L04W-S02
18MC-L02E-S02
18MC-L01E-S03
18MC-L04W-S01
18MC-L04W-S03
18MC-L02E-S01
Headwater East Branch
18MC-AS-S01
DEC-SED-13
DEC-SED-11
18MC-L03W-S01
500
18MC-L03W-S03
Upson Park
BC-L04-S01
18MC-BC05
18MC-L03W-S02
BC-L04-S02
BC-L04-S03
18MC-L02W-S02
Headwater West Branch
18MC-L02W-S01
18MC-L02W-S03
18MC-BC04
DEC-SED-10
18MC-L01W-S03
18MC-L01W-S02
Erie Canal
18MC-L01W-S01
BC-L03-S02
BC-L03-S01
0
BC-L03-S03
18MC-BC03
18MC-BC02
18MC-BC01
BC-L02-S01
BC-L02-S02
BC-L02-S03
Monroe St
Jackson St
Scovell St
Clinton St
Mill St
Van Buren St
Chapel St
Market St
Union St
Washburn St
Charles St
Wakeman Pl
Chestnut St

Subsurface Sediments
Surface Sediments
Eighteenmile Creek Centerline (500-ft marker)
Clinton Street Dam
Tax Parcels
Buildings

0 100 200 400 Feet
N

Data Source: Esri 2012, Niagara County 2014.

Figure 2-5
Sediment Sample Locations, Eighteenmile Creek RI OU2
Map 2 of 2

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Document Path: L:\Buffalo\eighteenmile\Mxds\2016_March\Fig2-6 OU2_Reference_Sample_Locations.mxd Date: 4/13/2016

Niagara County

Quaker Rd

BG1-SED01/SW01

BG1-SED02

BG1-SED03

BG1-SED04

BG1-SED05

BG1-SED06

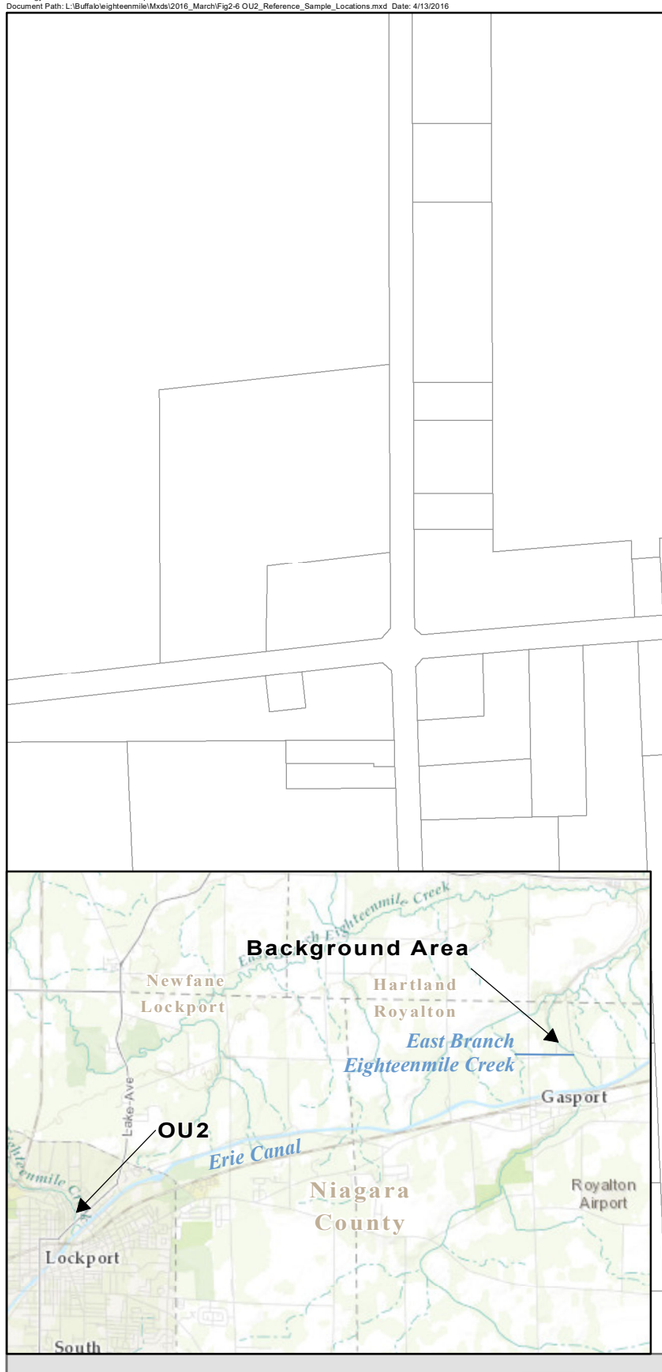
BG1-SED07

Slayton Settlement Rd

East Branch Eighteenmile Creek

Bolton Rd

Erie Canal



Background Sediment and Chemical Location

Background Sediment and Surface Water Toxicity and Chemical Location

Forage and Sport Fish Area

Tax Parcels (2015)

Water Feature

N

0 250 500 1,000 Feet

Figure 2-6
Sediment, Surface Water and Fish Sample Background Locations
Eighteenmile Creek RI OU2

3 Physical Characteristics of the OU2 Site

Detailed descriptions of the OU2 Site existing conditions and physical characteristics are provided in previous study reports as described in Section 1.4. A summary of key features relative to the OU2 Site are as follows.

- The most prominent topographic feature in the Eighteenmile Creek watershed is the Niagara Escarpment. The watershed is located within both the Ontario and Huron plains, two relatively flat plains that are separated by the escarpment, which runs generally east-west along the northern portion of the city of Lockport. OU2 lies at the top of escarpment where the elevation is highest at the Canal and drops 65 feet to just before the escarpment (see Section 3.1).
- The early Erie Canal increased water flow to Eighteenmile Creek, which led to the construction of mills and dams on the creek. The significance of the Erie Canal and the historic features along creek were addressed as part of the Phase IA archeological investigation (see Section 2.5) and these cultural resources need to be considered during the development of future remedial alternatives.
- Sediment contaminated with PCBs and metals has been identified along the entire 15-mile length of the Eighteenmile Creek. The source area of metals contamination appears to be historic fill throughout OU2. The extent of the fill is fairly well documented and it appears that most of the creek channel banks are fill. The thickness of fill was difficult to determine as it was found mixed at different proportions with other overburden material, but it generally ranged from less than 1 foot to more than 10 feet thick BGS (see Sections 3.2 and 3.3).
- The Canal is located at the most upstream portion of the Site. Most of the water in the western portion of the Canal comes from Lake Erie via the Niagara River and Tonawanda Creek via the Lockport locks. During the navigational season, water flows through the Canal from the Niagara River to Lockport in a northeasterly direction. In the winter, a guard gate in Pendleton, New York, is lowered and the Canal water level is drawn down (New York State Canal Corporation 2000). During normal operating and drawdown periods, water is discharged from the Canal into Eighteenmile Creek, resulting in an increase in flow volumes and a potential hydrological link to Lake Erie. Drawdown primarily occurs in November after the Canal is closed for the winter and the

Canal is drained into the creek. During dry periods, the Canal contributes the majority of the flow for the portion of the creek in the city of Lockport. Under terms of an agreement with the Federal Energy Regulatory Commission (FERC) for Burt Dam in Olcott, New York, the New York State Department of Transportation issued a permit in which they agreed to provide a diversion of excess water from the Canal to augment the natural flow of Eighteenmile Creek to maintain a flow of up to 400 cubic feet per second (cfs) at Burt Dam (see Section 3.4).

- Most of the banks of the Eighteenmile Creek channel are forested and steeply sloped, making access to the creek channel difficult in most places. Almost all of the Former Flintkote Plant Property is overgrown with vegetation except for the OU1 demolition area. The Property is fenced. Of the other properties, approximately 75% of the surface area at OU2 is covered by grass/vegetation and some areas of exposed soils and fill, with the other 25% of the surface area covered by buildings and asphalt/stone (see Section 3.5).

The following subsections provide more detail the OU2 features and specific references to previous reports.

3.1 Environmental Setting

The environmental setting was summarized in the NYSDEC 2009 supplemental RI report (EEEPC 2009a). Additional details may be found in that document.

The Site has moderate relief, with elevations that range between approximately 450 and 515 feet above mean sea level (AMSL) (see Figure 1 in EEEPC 2009a). The Site is comprised of a portion of Eighteenmile Creek, commercial/industrial properties, as well as residential properties, and undeveloped woodlands. Land use within 1 mile of the Site is primarily residential, with some commercial and light industrial use.

The Canal is immediately south of the Site and Lock No. 34 is located around 0.5 miles upstream (southwest) from Upson Park, on the Canal. The Eighteenmile Creek empties into Lake Ontario, which is located approximately 15 miles north of the city of Lockport.

Niagara County is characterized by a humid continental climate representative of the humid climate of the northeastern United States, with mild summers and very cold winters when temperatures tend to be in the 20° Fahrenheit range. Although rainfall is fairly evenly distributed throughout the year, minimum monthly precipitation is less in the winter than the other seasons. Since most atmospheric systems affect Niagara County as they move across the continent or up the Atlantic Coast, the weather in the region is very variable with temperatures and other atmospheric elements undergoing noticeable changes within a few days. The climate is influenced mainly by the proximity of lakes Erie and Ontario. The cold lake waters function like a sink that retards normal air temperature rising during the spring and restricts extreme high temperatures in the summer. In the fall the lake waters re-

duce cooling at night. Since the area is relatively flat, elevation has a lesser influence over the climate in Niagara County. Eighteenmile Creek is surrounded by six residential townships, and many citizens own creek-front property. The creek is used extensively for fishing, boating, and recreation.

The Main Branch of Eighteenmile Creek begins at the Canal in Lockport, New York. The headwaters of the creek originate southeast of Lockport, in the Niagara County Park and Golf Course, and flow aboveground to the northwest for one mile until the flow enters an underground pipe on the east side of Lockport. The pipe extends for three-quarters of a mile and empties into a sluice on the Canal, southwest of the Mill Street Bridge. Water from the Canal also flows into this sluice through a spillway in the Canal's south wall. The combined water flows through a culvert under the Canal and exits on the north side of the Canal, forming the Headwater East Branch of Eighteenmile Creek (see Figure 1-3). (This Headwater East Branch of Eighteenmile Creek should not be confused with the stream known as the "East Branch of Eighteenmile Creek," which is a tributary that flows into Eighteenmile Creek just south of Newfane, New York, approximately 4 miles downstream of the headwaters.)

The Headwater West Branch of Eighteenmile Creek originates in Upson Park at the dry dock on the north side of the Canal and also receives water from two underground flows from the south and southwest. The Headwater West Branch flows north toward Clinton Street. The Headwater East and West Branches converge on the south side of Clinton Street and flow under Clinton Street to the Mill Pond on the north side of Mill Street.

A dam, known as the Clinton Street Dam, is located in the Eighteenmile Creek behind the building on 62 Mill Street, the larger of the two United Paperboard parcels. Water from Mill Pond leaks around the west side of the dam and flows adjacent to or over the top (during high flow conditions) of an abandoned transformer pad. Mill Pond exists due to the presence of the Clinton Street dam (see Figure 1-2 in EEEPC 2009a). A storm sewer line crosses the Eighteenmile Creek approximately 25 to 50 feet downstream of the Clinton Street Dam, and several sewer manholes were observed on both the east and west banks of the creek.

In the area of the Former Flintkote Plant Property, a dam approximately 10 feet high diverts Eighteenmile Creek westward for approximately 300 feet along William Street (located on top of the dam). The creek continues northward and returns to its original natural channel approximately 500 feet downstream. The two sluice gates located at the east end of the dam have been closed for many years. A millrace containing a sluggish stream approximately 6 inches to 1 foot deep runs along the west side of the buildings at 300 Mill Street and empties into Eighteenmile Creek (see Figure 2-1 in EEEPC 2009a). The sluice gates were covered during the OU1 remedial action (EPA forthcoming). Eighteenmile Creek flows north and eventually discharges to Lake Ontario in Olcott, New York.

During operation, New York State Canal Corporation estimates that the Canal discharges approximately 50 cfs of water into the east and west branches of the creek (NYSDEC 2006a) well below the up to 400 cfs expected to support Burt Dam. The average flow measured during the NYSDEC additional supplemental RI investigations in 2008 was 35 cfs in the Headwaters West Branch and 200 cfs in the Headwaters East Branch. During dry periods, the Canal provides a significant portion of the creek's flow.

Surface topography at the Upson Park property slopes from Clinton Street to a large parking area and from the parking area steeply downward toward Eighteenmile Creek and steeply upward to the west (elevation ranges from approximately 490 to 530 feet AMSL).

Topography of the White Transportation property is terraced, sloping from east to west, toward the East Branch of Eighteenmile Creek.

Topography of the Former United Paperboard Company property and the Former Flintkote Plant Property dips toward the creek.

Along Mill Street surface topography is generally flat and the Water Street portion of the Former United Paperboard Company property slopes steeply downward toward the creek (elevation ranges from 470 to 490 feet AMSL).

3.1.1 Demographics and Land Use

As of 2010, the total population of Niagara County was 216,469 people, with the greatest densities in the city of Lockport and Niagara Falls. The percentage of the population under 18 years is 21.5% while 15.9% of the population is aged 65 years and over. The racial makeup in the region is dominated by Caucasians – nearly 90% of the population is white. The majority of individuals over the age of 25 have high school educations or better, and around 10% have a Bachelor's degree or higher level of education. In 2010, the median household income in Niagara County was approximately $49,091 compared with Erie County's median household income of $41,967. The percentage of the population living below poverty in Niagara County was 9.9% in 2010 (U.S. Census Bureau 2016).

The Eighteenmile Creek watershed encompasses portions of the towns of Cambria, Lockport (including a portion of the city of Lockport), Royalton, Hartland, Newfane, and Wilson, all of which are located in Niagara County. Land use in the watershed consists primarily of cropland and orchards, with residential, commercial, and industrial areas located in and around Lockport, Newfane, and Olcott Harbor. The city of Lockport is the most densely populated area within the watershed. The investigation area is located primarily in a rural/residential area (CH2M Hill, Inc. and EEEPC 2015).

Land use is described in Section 1 for each site within OU2. Table 1-1 summarizes future use plans for each site within OU2. Further details can be found in the City of Lockport Comprehensive Plan and The City of Lockport Tourism Fo-

cus Area Nomination Study (Nutter Associates 1998; Bergmann Associates 2015).

3.2 Geology

Regional and Site geology was summarized in the NYSDEC 2009 supplemental RI report (EEEPC 2009a). Additional details may be found in that document. Observations of Site geology during these supplemental RI field activities were consistent with the conditions described therein.

Regional Geology

The advance and retreat of glaciers during past ice ages have largely defined regional topography, geology, and soils. The surficial geology of the watershed consists mostly of glacial deposits formed about 10,000 to 15,000 years ago during the Pleistocene, when glaciers covered the area. These glacial deposits are generally less than 50 feet thick in the watershed area (La Sala 1968). The most common deposits found in the watershed area are glacial tills and lacustrine silts and clays. The glacial tills were deposited beneath the glacial ice. They have a variable texture and consist of non-sorted clay, silt, sand, and gravel. The lacustrine silt and clay deposits generally consist of laminated silt and clay and are usually calcareous with low permeability (NYS Museum 2004; La Sala 1968).

Less widespread glacial deposits in the watershed area include kame moraine, lacustrine beach, and sand and till moraine. The kame moraine is composed of a variable texture, from boulders to sand, with calcareous cement. Lacustrine beach deposits are generally well-sorted sand and gravel and are stratified, permeable, well-drained, and generally non-calcareous. Lacustrine sand deposits typically consist of stratified, well-sorted quartz sand that is permeable. Till moraine was deposited adjacent to the glacial ice, which has a variable texture and is generally low in permeability (NYS Museum 2004).

The bedrock in the watershed consists of Ordovician and Silurian rocks that dip gently southward at 20 to 60 feet per mile (La Sala 1968). The bedrock found in the watershed from north to south (and also from oldest to youngest) includes the Queenston Formation, Thorold Sandstone, Irondequoit Limestone, Decew Dolostone, and Guelph Dolostone.

The Queenston Formation was deposited in the Upper Ordovician and is a member of the Richmond Group. During the Ordovician, as the Taconic mountains rose toward the east, the Queenston Formation is traditionally thought to have formed as sediments began eroding from the mountains. Thus, the Queenston consists of red non-marine or continental shale, siltstone, and sandstone (NYS Museum 1991).

The remaining formations found in the watershed are part of the Niagaran Series. They are generally richly fossiliferous and were deposited in shallow inland seas during the Silurian. The Niagaran Series includes the Medina, Clinton, and Lockport groups (Brett et al. 1995).

The Thorold Sandstone is in the Medina Group. It ranges in thickness from 4.5 to 20 feet, with an average of 12 feet. From Rochester to Lockport, it is a mottled pink to red, cross-bedded, channel sandstone with numerous trace fossils. From Lockport and west it consists of a light gray to white, massive, clayey, pelletal sandstone. It is typically interbedded with thin green silty shale layers whose number increases toward the top of the unit (Brett et al. 1995).

Irondequoit Limestone and Decew Dolostone are members of the Clinton Group. The Irondequoit Limestone is a thick- to massive-bedded, medium greenish-grey to pinkish-grey, dolomitic, fossiliferous limestone. Thin tongues of shale are common and increase in abundance in the upper portion of the unit. The Irondequoit ranges in thickness from 5 to 22 feet with an average of 15 feet (Brett et al. 1995).

The Decew Dolostone ranges in thickness from 8 to 12 feet with an average of 9 feet. It consists of variably bedded, dark gray to olive gray, clayey to sandy, fine-grained dolomite. Its most characteristic feature is soft sediment deformation features. Fossils are rare, but have occasionally been observed (Brett et al. 1995).

The Guelph Dolostone is a part of the Lockport Group. It is a medium to dark gray laminated, fine-grained dolostone with partings of dark greenish-gray to nearly black shale. Both the shale and dolomite are petroliferous and sparsely fossiliferous. The Guelph can be as thick as 300 feet (Brett et al. 1995).

Site Geology

Overburden deposits throughout the Site consist of mostly glacial tills and lacustrine silts and clays with localized areas of fill material overlying bedrock. Overburden also includes areas where massive pieces of bedrock are believed to have been backfilled, and has been encountered at depths as shallow as 1 to 3 feet BGS. According to the Soil Survey of Niagara County (USDA SCS 1972), the entire project area is classified as “Made Land (Me)”. Made Land consists of areas that have been filled with stone, masonry material, brick and other waste. Specific types of fill on each of the properties within the Site are described below.

Subsurface investigations completed at the Flintkote Plant Property revealed a thin topsoil layer overlying fill that consists of various colored ash with glass, coal, coke, slag, buttons, ceramic and brick. Glacially deposited native soil consisting of fine grained silts an clays underlie the fill in most areas followed by bedrock. Bedrock ranged from 2 to 29 feet BGS and was described as sandstone. Additional details describing each of the major units (topsoil, fill, native soil and bedrock) are provided in Section 3.1 of the SI report for the Former Flintkote Property (TVGA 2005a). Three soil borings were installed using direct-push technology (DPT) in December 2014 on the north portion of the Former Flintkote Property. The borings revealed a mixture of sand, gravel, silt and clay containing pieces of slag and black sandy fill. Refusal was encountered between 5.4 and 7.2 feet BGS in each of the three borings.

The nature of the overburden throughout the OU2 creek corridor was characterized by installation of 30 soil borings during the NYSDEC 2009 supplemental RI report. Drilling logs are presented in Appendix B of the NYSDEC 2009 supplemental RI report. Borings were installed using split-spoon and DPT drilling techniques. Suspected bedrock refusal ranged greatly. Refusal was encountered in all but six soil borings, at depths as shallow as 3 feet BGS in one boring, and at depths less than 10 feet BGS in eight borings. In other areas, soil borings were installed as deep as 30 feet BGS without encountering bedrock.

Fill material was observed at the ground surface at several locations along the OU2 creek corridor as well as in the subsurface of numerous soil borings, at varying depths. Thickness of fill varied between soil borings from less than 1 foot to more than 10 feet BGS. Two distinct fill units were observed throughout the Site, including:

- Unconsolidated dark gray to black slag material, ranging from moderately to well sorted fine–to-medium sand with gravel content ranging from zero to 50% found at the Upson Park, White Transportation, and Former Flintkote Plant Property properties; and
- Unconsolidated red-brown poorly sorted cinder material containing fragments of red brick, rubber, metal, glass, and buttons found at various locations at the Site but specifically at the Former United Paperboard Company property.

Additional possible fill was observed consisting of gray clay-matrix material containing varying proportions of unsorted sand and fine gravel. The color of the sand and gravel varied between black, gray, brown, tan, red, yellow, and more.

Soil borings installed in December 2014 along Clinton Street, Jackson Street, and Monroe Street revealed a thin layer of topsoil over a mix of silt, clay and gravel. Bedrock was encountered in each boring between 1.6 and 8.9 feet BGS.

Installation of monitoring well MW18 during the 2014 supplemental RI field activities revealed brown silty and silty clay overlying bedrock from the ground surface to 8 feet BGS, thus indicating the absence of fill material.

3.3 Sediment

Numerous sediment samples from along Eighteenmile Creek have been collected and described during previous investigations. OU2 sediments were sampled in 2007 during the NYSDEC supplemental RI (EEEPC 2009a). The sediments are described as gray silt underlain by native black clays or bedrock (encountered at less than 1 foot in some areas), with varying amounts of sand and gravel along the Former White Transportation property and Upson Park. Brown and orange clay was found along the Former United Paperboard Company property and the Former Flintkote Plant Property. Fill, black slag, shell fragments, and organic matter

(wood, rootlets, aquatic plants) were also present. Sediment thickness ranged from less than 0.5 feet to approximately 4 feet.

As part of the additional activities conducted for the NYSDEC 2009 supplemental RI, a bankfull width survey was conducted in OU2. The bankfull width is commonly known as the width at which water begins to leave the channel and discharge to the floodplain. Determination of the bankfull width is needed to estimate the stage at which contaminated sediments leave the OU2 creek corridor and potentially begin to be deposited on the floodplain. The bankfull elevation boundary is presented on Figure 2-1 of the *Additional Investigation Addendum to the Supplemental Investigation Report for the Eighteenmile Creek Corridor Site* (EEEPC 2009b). Sediment thickness and bankfull width measurements were used in the NYSDEC FS (EEEPC 2009c).

3.4 Hydrology

The Eighteenmile Creek watershed is located within both the Ontario and Huron plains, which are two relatively flat plains that are separated by the Niagara Escarpment, which runs generally east/west along the northern portion of the city of Lockport. Within the watershed area the escarpment ranges from 100 to 175 feet. The maximum elevations within the watershed occur within the Huron Plain in the southern portion of the watershed and are approximately 635 feet AMSL in the southwestern portion and approximately 655 feet AMSL along the southeastern extent.

The West Branch and the Main Branch of Eighteenmile Creek are located within a well-incised, steeply sloped channel for most of their lengths. The channel walls range in height, but average approximately 35 feet. The East Branch lacks the incised channel characteristic of the rest of Eighteenmile Creek.

The Site is located in an area in which deep, well drained to excessively drained, medium-textured soils formed in glacial outwash deposits composed primarily of sand and gravel.

3.4.1 Surface Water

Eighteenmile Creek

Eighteenmile Creek in OU2 is a Class D stream according to 6 New York Codes, Rules and Regulations Part 848 with Class D protection standards. The best usage of a Class D stream is identified as fishing, and the water quality is to be suitable for primary and secondary contact recreation. Eighteenmile Creek flows in a north-northwesterly direction for approximately 15 miles before emptying into Lake Ontario; approximately 18 miles east of the mouth of the Niagara River. The headwaters of the creek originate upstream of the Site, on the south of the Canal. Approximate 3,500 feet of the upstream portion of the creek runs through a culverted section beneath a portion of the city of Lockport where it converges with a spillway on the south side of the Canal near Market Street. At this point of convergence, the creek water and Canal waters merge to supplement the creek

flow, where it then flows north, under the Canal, and passes through the OU2 creek corridor. The Eighteenmile Creek receives Canal waters reportedly to maintain adequate flow volume necessary to dilute the discharge from the City of Lockport waste water treatment plant located approximately 3,000 feet downstream of the OU2 creek corridor and also to fulfill an agreement between the power generating facility at Burt Dam and the New York State Canal Authority (TGVA 2005a).

The locks in the Canal are operational during the navigation season from early May to mid- November (New York State Canal Corporation 2008). The Canal normally flows from west to east, but there is backflow in the Canal in the vicinity of Upson Park when the Canal gates are opened and closed. The Canal is drained annually at several locations along its length for the non-navigational season to minimize the potential for freeze/thaw effects on the Canal's elevated embankments. In the vicinity of the site, Canal waters are drained directly to the East Branch of Eighteenmile Creek through a spillway on the southern side of the Canal, just west of Mill Street. Personnel at the New York State Canal Corporation indicated that if maintenance is needed in the Canal, the water level in the Canal is further lowered by removing a "plug" located in the middle of the Canal bottom. One such plug drains into the tunnel that connects Eighteenmile Creek with the creek headwaters/Canal spillway waters (see Figure 1-3). Maintenance is performed as needed; therefore, the plug is not removed every year.

The Eighteenmile Creek varies from tens of feet wide or less just to the north of the Canal, to over 50 feet wide in the Mill Pond area along the Former United Paperboard Company property. In many areas the creek bed along the center of the channel was comprised mostly of coarse sand and various sizes of gravel, stone, and rubble. A larger proportion of silt was observed along the creek bottom in the West Branch of the creek, as well as between Clinton Street and the Clinton Street Dam. In the East Branch of the creek, as well as downstream of the Clinton Street Dam the creek bottom was comprised largely of gravel and rubble.

Water depth in the creek varies from a few inches in the southernmost point of the West Branch to around 10 feet in the center of the Mill Pond, along the Former United Paperboard Company property.

The East Branch of Eighteenmile Creek initially flows to the northeast, before turning west and joining with the Main Branch. This is caused by a topographic high point located in the southeastern portion of the watershed. The East Branch near the Canal and White Transportation property has high flow, with water depth of 1 to 3 feet at mid-channel, and rocky bottom. The West Branch has moderate to high flow velocity in most places and a bottom composed of cobble, gravel, and sand. The East Branch and West Branch of Eighteenmile Creek merge immediately upstream from Clinton Street and then flow north beneath Clinton Street into Mill Pond on the Former United Paperboard Company property. The natural flow of the creek has been altered by the construction of the Clinton Street Dam, resulting in the formation of the Mill Pond upstream of the dam. Flow is

also disturbed by a sewer main crossing just below the Clinton Street Dam, and a prominent diversion to the west for approximately 300 feet is caused by a dam along William Street. The creek resumes its northward course after passing through a pair of culverts beneath William Street. The flow velocity increases considerably after passing through the William Street culverts due to a narrower channel and a steeper gradient. The creek then rejoins its natural channel at an area approximately 460 feet north of William Street. A pair of sluice gates at the east end of the dam formerly allowed an unknown amount of flow from the creek to continue downstream into a millrace along the west side of the buildings at 300 Mill Street where a water turbine was reportedly once located. Although the sluice gates are now closed and soil has been deposited behind them, leakage from the creek through the gates and from the former turbine discharge portal supplies the millrace with a sluggish flow approximately 6 inches to 1 foot deep. Groundwater recharge and surface water runoff from the Flintkote Property also appears to also influence the water level in the millrace.

The turbidity of the water limits any visual assessment of the Eighteenmile Creek's channel bed. However, the flow depth upstream of William Street during non-storm events is expected to vary between 2 and 4 feet deep, while the flow depth downstream of William Street is expected to be less. The borings completed near the bank of the creek at the 198 Parcel indicate that bedrock is at an approximate elevation of 68 feet, which is about 8 feet below the surface water elevation of the creek during non-storm events.

A review of the updated September 17, 2010, Flood Insurance Rate Map developed for the Site's vicinity by the Federal Emergency Management Agency, indicates that Eighteenmile Creek and its lower banks are within a 100-year floodplain and the higher portions of the Site are within a Zone X, which is an area of minimal flooding (see Table 3-1).

Stormwater

Drainage ditches are generally absent on all of the individual properties along the OU2 creek corridor. Based on historical review, the only underground utility present on the Site is a storm sewer crossing the creek north of the Clinton Street Dam. Also several sewer manholes were observed on both banks (east and west) of the creek. Overland flow (runoff) on both sides of the creek is toward the creek due to the enhanced steep slopes toward the creek from historical fill material. Although there were no visible signs of catch basins/floor drains during the 2015 Flintkote Plant demolition, such drains may still exist on the Flintkote Plant Property, which may discharge to the creek (e.g., groundwater flow from a 2015 test pit excavation on the Flintkote Plant Property was noted to ultimately discharge to the millrace via an underground pipe [see Section 2.3.2]). As shown on Figure 2 of the 2005 SI report for Flintkote (TVGA 2005a), several discharge pipes of unknown origin have been identified along Eighteenmile Creek and the millrace. A concrete stormwater box culvert approximately 2.5 feet high and 4.5 feet wide discharges to the surface at the north end of the Flintkote Plant Property. This box culvert appears to originate from an off-site location.

3.4.2 Groundwater

Water-bearing zones in the Lockport area include unconsolidated glacial deposits and bedrock. Most of the unconsolidated deposits in the area consist of fine-grained glacial deposits with hydraulic conductivities of roughly 10^{-7} centimeters per second (cm/s) or less (Earth Dimensions 1980). These deposits, however, often contain horizontal laminations and sand lenses that can produce perched water table conditions, or if really extensive, can be utilized as sources of water (La Sala 1968). Because the unconsolidated deposits in the vicinity of the Former Flintkote Plant Property are relatively thin and horizontal laminations and sand lenses are uncommon, groundwater yields from these deposits would be too low for domestic or industrial purposes. Overburden groundwater flow near Eighteenmile Creek, therefore, is expected to be highly localized and sporadic, with an overall flow toward Eighteenmile Creek (NYSDEC 2000). Groundwater occurs primarily within the bedrock in the following ways: 1) weathered surface fractures; 2) bedding joints; 3) vertical joints; and 4) small cavities and vugs. The principal controls on bedrock groundwater flow, however, are the vertical and horizontal bedding plane fractures. The latter are expected to be the primary groundwater flow pathways in the Grimsby Formation, especially in the upper unit, which is extensively fractured. Some horizontal groundwater flow, however, could also occur through small cavities and vugs. Vertical movement of groundwater also occurs, especially in the upper 10 to 25 feet of rock, where vertical fractures, created by stress relief from tectonic events and glacial rebound have been enlarged by dissolution and/or glacial scour (Gross and Engelder 1991). The extent of the vertical groundwater movement within the Grimsby Formation is unknown. The groundwater in the Upper Grimsby Formation likely flows toward Eighteenmile Creek (NYSDEC 2000).

Groundwater elevations in the monitoring wells in the core of the VOC plume were measured several times throughout the previous RIs. The latest rounds of groundwater elevations were recorded in December 2014 and May 2015 (see Table 2-3). Prior to this supplemental RI, groundwater elevations were recorded and contoured in July and November 2007 (see Table 2-7 and Figures 3-1 and 3-2 in E & E 2009a). Figure 3-1 shows the groundwater isopleths from May 2015 water level measurements. In general, groundwater flow on the west side of the creek was still from west to east toward the creek. Groundwater elevations in 2007 and 2014/2015 in MW05 were generally the same; however, the elevations in May 2015 were 1.0 to 1.8 higher in MW14, -15, and -16 than in July 2007; and the water levels in MW15 and -16 in December 2014 were 6.03 to 13.9 feet lower than November 2007. These significantly lower elevations may be the result of the Canal water levels (in December 2014 the Canal was drained for the season, and in November 2007, the Canal may have still been full, or was in the process of being drained). Only a limited number of groundwater elevations were collected in May 2015 (wells on the west side of Eighteenmile Creek).

Groundwater contour patterns depicted in Figures 3-1 and 3-2 of the NYSDEC 2009 supplemental RI report show flow generally toward Eighteenmile Creek

(EEEPC 2009a). The horizontal hydraulic gradient at the Site ranged between 0.08 feet per foot and 0.32 feet per foot as measured from the contours and associated July and November 2007 water levels Detailed discussion of groundwater elevations at the Former Flintkote Plant Property are not changed based on these supplemental RI field activities.

The groundwater hydrogeology at the site is largely influenced by topography and the underlying geology (soils/bedrock). Although groundwater occurs primarily in the fractured bedrock, it also occurs in the overburden in some areas, especially where bedrock is deeper. The depth to groundwater also varied significantly with topography (approximately 5 to 18 feet BGS). Groundwater was encountered in the overburden in most of the wells, except MW09, MW15, and MW16 located on the west side of the creek where bedrock was shallower (between 9 and 17 feet BGS). Groundwater flow on both the east and west sides of the creek is toward the creek, and groundwater flow in the vicinity of the north side of the Canal near the White Transportation property is toward the Canal. The Eighteenmile Creek appears to both gain and lose water from groundwater (see Figure 3-2):

- Gaining Stream
  - The creek gains water on the Former Flintkote Plant Property near the 198 well cluster (see Figure 3-2, Cross Section B-B′); and
  - The Mill Race gains water on the Former Flintkote Property near MW-10B (see Figure 3-2, Cross Section C-C′).
- Losing Stream
  - The creek loses water to the water table in the vicinity of MW05 (see Figure 3-2, Cross Section A-A′); and
  - The creek loses water on the east side of the creek beneath the island near MW-6 on the Former Flintkote Plant Property (see Figure 3-2, Cross Section C-C′).

It is unclear whether the creek is gaining or losing on the west side in Cross Section C-C′ see Figure 3-2). Since water gain and loss was observed at various locations along the creek, it is possible that contaminated groundwater may impact the creek or contaminated creek water may impact groundwater.

3.5 Ecological Characteristics

A complete description of the Site's ecological characteristics is presented in the *Baseline Ecological Risk Assessment Problem Formulation for Eighteenmile Creek Operable Unit 2* (BERA report; EEEPC 2015). Figure 2-2 of the BERA report shows community types based on Edinger et al. (2002) that occur at the Site. Ecological community types were identified by an E & E ecologist during a Site visit in October 2007. Three natural community types were identified on the Site: headwater stream, successional southern hardwoods, and floodplain forest/successional southern hardwoods (see Figure 2-2 of the BERA report). No

significant or unique habitats were among them. The community type descriptions can be found in the BERA report (EEEPC 2015).

The physical habitat conditions within OU2 were consistent with those of a small to medium-sized perennial stream system, which has been modified through the creation of impoundments. The lower portion had a riffle-pool-run morphology, typical of a small to medium sized un-impounded stream, with the upper portion resembling more of a small reservoir environment, with impounded water from the Clinton Street dam. The impoundment of the channel creates a lentic (still water environment), which influences the types of fish that would reside within that habitat. Typical species would be from the Cyprinids (minnows), Catastomids (suckers), and Centrarchid Family (panfishes). This was consistent with some of the species captured, such as rockbass, smallmouth bass, and silver redhorse. However, the large walleye captured would not be expected, due to the size of the stream and presence of dams, impeding fish migration. These walleye, likely originated from the Erie Canal. The impoundment of the upper portion also creates a deeper water environment, which provide more aquatic habitat. The lower portion that was not impounded had relatively shallow water and limited amounts of suitable habitat to support fisheries populations; this section would not be expected to support Centrarchids. Both sections would be expected to support Cyprinids or minnows.

Table 3-1 Summary of 100-year Flood Elevation of Eighteenmile Creek in Relation to the Site

Location	Area of Minimal Flood Hazard	0.2% Annual Chance of Flood Hazard	1% Annual Chance of Flood Hazard	Regulatory Floodway
Upland Areas (Zone X)	X			
Canal (Zone A)			X	
West Branch			X	
East Branch				X
Eighteenmile Creek Main Channel				X
Mill Pond				X
Mill Race				X
West side of creel channel from Clinton Street to William Street			X	
Area adjacent to the building on the United Paperboard Company Property			X	
Thin band along east side of Water Street		X		
Southern tip of the island			X	
Near shore area on southern portion of Flintkote Property			X	
West bank of central portion of the island			X	
East and west banks of main channel north of the island			X	

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Document Path: L:\Buffalo\eighteenmile\Mxds\2016_March\Fig3-1 MonitoringWells_with_GW_Contours.mxd Date: 4/13/2016

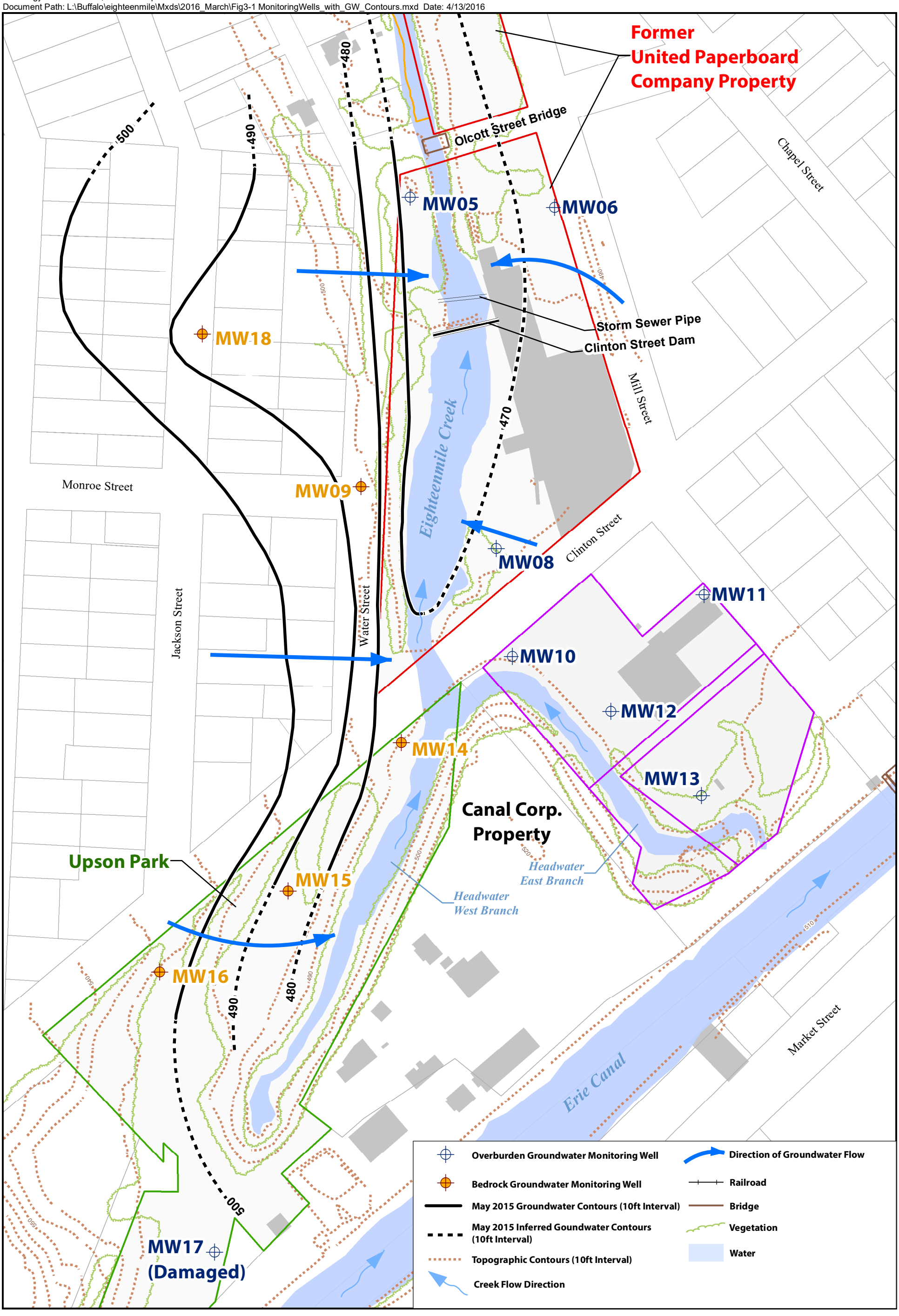
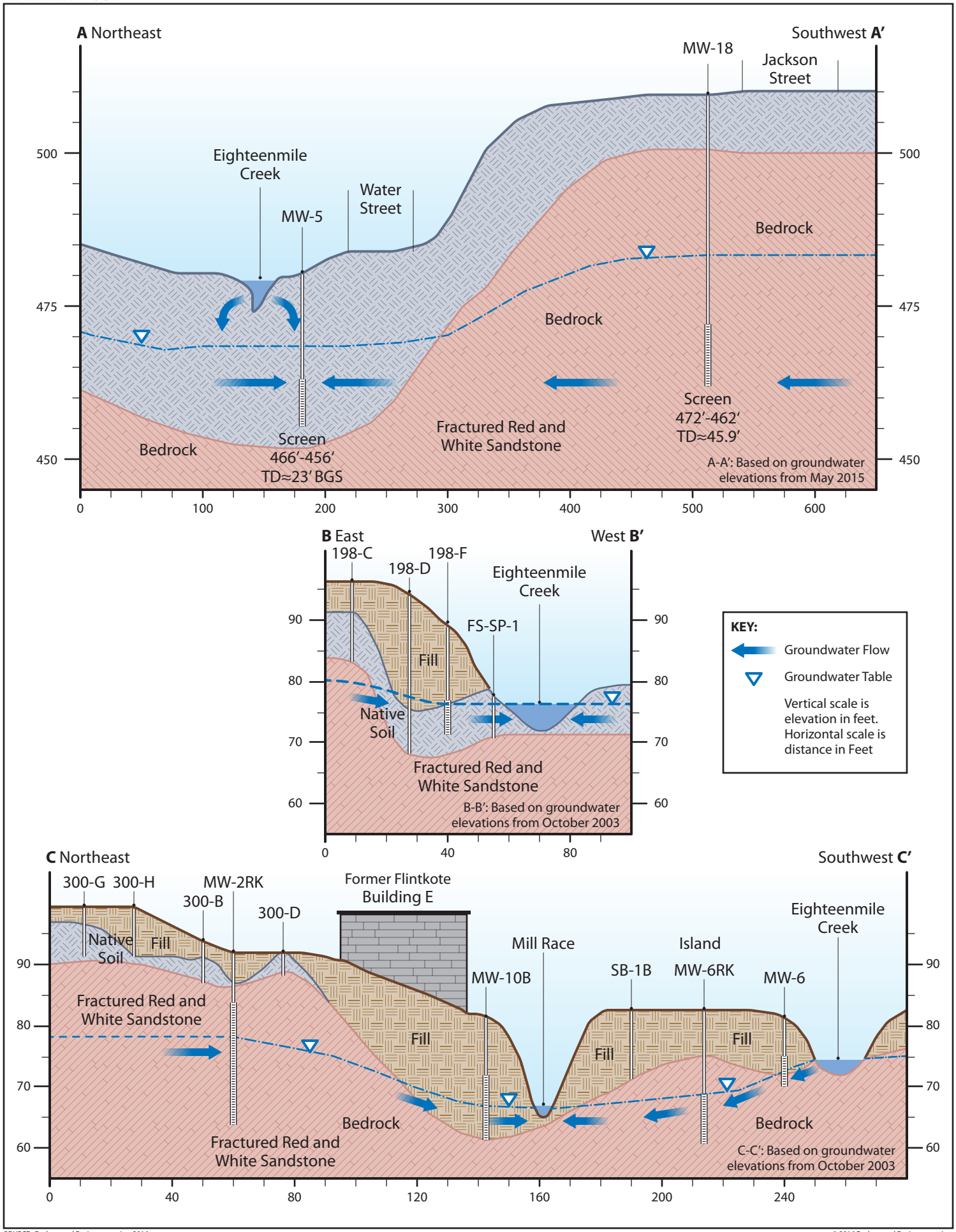


Figure 3-1 Monitoring Well Locations and Groundwater Contours, Eighteenmile Creek RI OU2



SOURCE: Ecology and Environment, Inc. 2016

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Figure 3-2 Cross Sections, Eighteenmile Creek RI OU2

4 Data Quality Evaluation

4.1 Historical Data

Recent studies conducted within the OU2 boundaries were evaluated against EPA QA/QC requirements to assess the usability of the sample and analytical data for evaluating nature and extent and or assessing risk (see Section 1.4). In general, data were considered usable if the following criteria were met:

- Data generated within the last 10 years are considered potentially usable and representative of current Site conditions;
- It should be noted that due to the limited amount of data available for the Former Flintkote Property, data collected from the Former Flintkote Property that was older than 10 years was also evaluated and subsequently determined to be considered usable;
- Sampling locations were within the OU2 boundaries and the coordinates of the locations were provided or mapped with sufficient detail so that the locations could be digitally recorded in the geographic information system geodatabase;
- The depths from which the samples were collected were provided or could be easily inferred based on the sampling technique (e.g., samples collected with a Ponar were assumed to be from a depth of 0 to 0.5 feet);
- Analytical data were reported for the Site-related chemicals of concern, and analytical methods and reporting limits were comparable to those used during the supplemental RI data collection activities;
- Analytical data were available in various electronic formats, and the data was imported to the RI database;
- Samples were collected under an approved sampling plan and QAPP, and consistent with the QAPP, the samples were analyzed by a government laboratory or certified commercial laboratory; and
- Data quality review process or formal data validation was completed for most datasets; however, if the data was not reviewed, the data packages and sampling logs were retrieved and a formal data validation was performed to determine usability.

A summary of the reports reviewed and data quality assessment is presented in Table 4-1. Data usability worksheets were completed for each dataset and are

provided in Appendix D. Sampling and analytical data from the NYSDEC RI was generated under NYSDEC Standard Operating Procedures (SOPs) and analytical methods, but the data were not specifically validated (NYSDEC 2006a). Data packages, original analytical dbf files, and field notes were provided by NYSDEC and the data were validated by the EPA or E & E. Data validation reports are included in Appendix C.

All electronic data were imported into the RI database as described in Section 4.3 and checked for transcription errors. Table 4-2 summarizes the total number of samples for each analytical method from the various studies that are included for use in this RI. Electronic copies of the analytical reports that were not provided in previous reports are included in Appendix C.

In addition to the analytical results, data related to the sample location and depth were also included. The sample locations were established based on Global Positioning System coordinates provided in the individual reports, and the locations were verified on the geographic information system (GIS)-derived Eighteenmile Creek OU2 base map. Each sample location was coded by property, matrix, and exposure area. For sediment samples the distance of the sample location relative to the start of Eighteenmile Creek's main channel at the Canal was also determined. Individual sample locations included in this supplemental RI are summarized in the location data table in Appendix D.

For each sample collected at a location, the sample start and end depths were added in units of feet, and the sample was coded as to whether the depth was surface or subsurface. Surface samples were samples collected with a start depth of less than 0.5 feet BGS. Subsurface samples were samples collected with a start depth greater than 0.5 feet BGS or samples that were collected at depths greater than the surface sample. The sample also was coded to indicate the type of sample collected (e.g., OU2 creek corridor, background location, Canal). An electronic version of this supplemental RI database is provided in Appendix C. The sample results are summarized in the previous reports as indicated on Table 4-1 and are not presented on summary tables in this supplemental RI.

4.1.1 PCB Total Data Usability

PCBs were analyzed as PCB Aroclors and a portion of the samples were analyzed for PCB congeners. The Aroclor and congener data were both included in the RI database. Table 4-2 includes the number of samples from each study analyzed for PCB Aroclor and PCB congeners. PCB Aroclor data were used for evaluating the nature and extent of contamination. The PCB congener data were used to assess potential enhancement of dioxin-like PCB congeners in the HHRA consistent with EPA's 1996 reassessment of PCB carcinogenicity (EPA 1996).

4.1.2 PCB and PAH Total Concentrations

A total PCB Aroclor concentration was calculated for each sample by summing together the concentrations of detected values and assuming a value of zero for non-detect Aroclors. A total PCB congener concentration was calculated for each

sample by summing together the concentrations of detected values and assuming a value of zero for a non-detect congeners. Each sample was reported as the total concentration with two significant figures to maintain laboratory accuracy.

Total PAHs were calculated for each sample by summing together the concentrations of detected compounds. For the BERA, total PAHs also were summed by adding a value of one-half the reporting limit for non-detected compounds for the 16 TCL PAHs. Each sample was reported as the total concentration with two significant figures to maintain laboratory accuracy.

4.2 RI Data

A data quality evaluation was performed on all analytical data (primary and secondary) for this supplemental RI. All samples were collected and analyzed according to the project QAPP (LATA/E & E 2014a, 2015; E & E 2016a). Data underwent various levels of verification and validation as specified in QAPP Worksheets 34, 35, and 36. Primary definitive data, which are used in the risk assessments and to determine the nature and extent of contamination, underwent Level IV validation. When samples were submitted to the EPA Contract Laboratory Program (CLP) in 2014 and 2016, the analytical data were validated by the EPA using Region 2 SOPs. However, when samples were submitted to a laboratory subcontracted by LATA/E & E, the analytical data were validated by E & E using EPA Region 2 SOPs.

Secondary data, such as toxicity reports and geotechnical analyses, underwent a completeness and compliance check to verify the data met performance criteria outline in the QAPP or analytical method.

Any deviations from acceptable quality control (QC) specifications are discussed in the data validation reports (see Appendix C). The data validators added appropriate qualifiers to the data to indicate potential concerns with data usability. These qualifiers were transferred to the data presented on summary tables in Appendix A. For the supplemental RI data, the following qualifiers were added:

J – The qualifier indicates an estimated value because the associated QC data indicated a potential laboratory or matrix problem or interference. The qualifier is also used to indicate an estimated value that is detected between the method detection limit and quantitation limit.

J+ – The qualifier indicates an estimated value because the associated QC data indicated a potential laboratory or matrix problem or interference and is estimated high.

J- – The qualifier indicates an estimated value because the associated QC data indicated a potential laboratory or matrix problem or interference and is estimated low.

JN – The analyte has been tentatively identified or presumptively as present and the associated numerical value is the estimated concentration in the sample.

EMPC– The analyte is estimated to be the maximum possible concentration due to the value being detected between the method detection limit and quantitation limit.

U – The result is considered non-detect. The laboratory assigned this qualifier to analytes not present at detectable concentrations (above the instrument detection limit or method detection limit). The qualifier is also used on a sample result if the analyte is detected in an instrument or method blank and it is likely that the sample result is due to the same contamination as the blank. The sample result is qualified U and the reporting limit is elevated to the sample result.

UJ – The result is considered non-detect at an estimated PQL.

R – The data are not usable for the RI and the results are not reported.

Overall, the data quality was acceptable and the laboratory analysis and reporting procedures were representative of appropriate methodology for the samples collected. Laboratory QC concerns did not have a significant impact on the overall completeness and representativeness of the dataset.

4.3 Data Management

Data management consisted of verifying collection and storage of field samples. Samples submitted to CLP were logged using Scribe® software; otherwise sample collection information was maintained on the chain of custody form. Electronic analytical data from CLP were received as a CLP flat format file; however, electronic data received from subcontracted laboratories were received in EQuIS Region 2 format. The CLP electronic data deliverable was converted to Region 2 format using the EQuIS program and the data were submitted to EPA Region 2. All of the analytical data were translated into the CLP format in a Microsoft Access database. This Microsoft Access database was the basis for the development of a project-specific database for the RI that integrated supplemental RI data, data generated from the GIS geodatabase, and electronic data from other investigations. This database, subsequently referred to as the RI database, was used for data evaluation as described in Section 5 and is included in Appendix C. A Region 2 format electronic data deliverable (EDD) of the analytical and location data was submitted to EPA Region 2 database administrator. In the instances where data was received in the CLP EDD format, the data was transformed to Region 2 format using the EQuIS database.

Table 4-1 Summary of Samples by Investigation, Eighteenmile Creek RI OU2

Investigations	Study Key	Area	Sample Dates	Number of Samples by Matrix				
				Ground Water	Surface Water	Sediment	Soil	Other
TVGA. 2005. Site Investigation Report. Former Flintkote Site 198 and 300 Mill Street.	NCDP 2005	OU2	9/08/2003 through 10/03/2003	14	2	2	37	7
NYSDEC. 2006a. Remedial Investigation Report, Eighteenmile Creek Corridor, Lockport.	NYSDEC RI	OU1 and 2	7/23/2002 through 11/26/2005	--	--	58	72	--
EEEPC.2009a. Final Supplemental Remedial Investigation Report for the Eighteenmile Creek Corridor . Prepared for the NYSDEC.	NYSDEC SRI	OU1 and 2	4/16/2007 through 2/11/2009	32	--	93	154	--
EEEPC. 2009b. Final Additional Investigation Addendum to the Supplemental Remedial Investigation Report for the Eighteenmile Creek Corridor . Prepared for the NYSDEC.	NYSDEC SRI-A	OU2	11/04/2008 through 12/06/2008	--	30	22	--	--
Ecology and Environment, Inc. 2007. Final Report for the Eighteenmile Creek PCB Source Trackdown Project. Prepared for NCSWCD.	NCSWCD 2007	OU2	7/6/2006 through 8/24/2006	--	--	21	--	--

Table 4-2 Summary of Historical Data Evaluation, Eighteenmile Creek RI OU2

Data Key	Investigation	Data Summary	Data Evaluation	Data Availability and Status
TVGA SI RAR	TVGA. 2005. Site Investigation Report. Former Flintkote Site 198 and 300 Mill Street.	Work was conducted to support the evaluation of alternatives for Flintkote by a TVGA under contract to Niagara Count Department of Planning. Samples include building, groundwater, and surface and subsurface soils. NYSDEC Site Investigation report is attached.	Data generated by TVGA are provided along with data validation memorandum. Full data packages were validated but not provided. Data latest sampling for most of the Flintkote property. NYSDEC generated data were from previous reports not considered usable.	Data are available electronically for result only. Qualifiers were entered from validation memos. Coordinates were gathered from CAD drawings.
NYSDEC RI	NYSDEC. 2006a. Remedial Investigation Report, Eighteenmile Creek Corridor, Lockport.	Sediment and soil sampling in corridor site between NYS Barge Canal and the Flintkote Plant is presented. Sediment results include PCBs and select metals.	Data was generated under NYSDEC standard operating procedures and considered usable. Data were not specifically validated.	Data packages, original analytical dbf files, and field notes were provided by NYSDEC. The data were validated by EPA or E & E and compiled.
NCSWCD 2007	Ecology and Environment, Inc. 2007. Final Report for the Eighteenmile Creek PCB Source Trackdown Project. Prepared for NCSWCD.	Presents sediment data from Reach 7 and tributaries. PCB and metals results from sediment cores and PCB screening results from sediment grab samples are available electronically.	Data was validated and data review memos are posted. Sediment data from the cores are considered usable for the RI.	Sediment data are imported from GLNPO RI database.

Table 4-2 Summary of Historical Data Evaluation, Eighteenmile Creek RI OU2

Data Key	Investigation	Data Summary	Data Evaluation	Data Availability and Status
NYSDEC SRI	EEEPC. 2009a. Final Supplemental Remedial Investigation Report for the Eighteenmile Creek Corridor. Prepared for the NYSDEC.	Sediment, soil, waste, and groundwater samples from Upstream, Barge Canal, Upson Park, White Trans. Property, United Paperboard, Flintkote Plant, and downstream of Flintkote Plant are presented. PCB, TOC, Pesticides, PAH, and metals data are available for the sediments.	All data were formally validated and data packages and data usability memos are posted. Data are considered usable for EPA RI.	Data were imported from the project database provided in the SRI report appendix.
NYSDEC SRI-A	EEEPC. 2009b. Final Additional Investigation Addendum to the Supplemental Remedial Investigation Report for the Eighteenmile Creek Corridor. Prepared for the NYSDEC.	Report presents additional activities to support SRI, including groundwater, PISCES, and sediment samples from the Erie Canal were collected and analyzed for PCB, metals and TOC.	All data were formally validated and data packages and data usability memos are posted. Data are considered usable for EPA RI.	Data were imported from the project database provided in the SRI report appendix.

5 Nature and Extent of Contamination

This section presents the sampling and analytical results of the supplemental RI field activities relative the objectives of completing data gaps in the existing CSM. The sampling and analytical results from the previous investigations that were reviewed and determined adequate for evaluation of nature and extent also are presented (see Section 4). The results of this investigation are compared to results of the previous investigations to determine if there are any significant changes to the nature and extent of contamination at the Site. This information was also used to supplement the fate and transport of chemicals (see Section 6) and provide additional information on the chemicals of potential concern for risk evaluation (under separate cover) that pose a potential threat to human health and/or the environment.

5.1 Screening Criteria

In previous investigations, sample analytical results were screened against existing New York State regulatory criteria to identify samples containing chemical concentrations levels that may represent a possible threat to human health and/or the environment. For this supplemental RI, screening for COPCs will be completed as part of the HHRA and BERA. The supplemental FS will evaluate updates to applicable or relevant and appropriate standards, criteria, and guidance.

5.2 Soil

Surface and subsurface soils have been extensively sampled as part of previous investigations at the locations depicted on the two map frames on Figure 2-4. Soils collected by NYSDEC in 2002 and 2005 (shown as DEC-SS or DEC-SB) were analyzed for PCBs, metals, and SVOCs. Soil samples collected for Niagara County in 2005 (shown as FS) were analyzed for TCL/TAL parameters. The soil samples that were collected for NYSDEC in 2007 (shown as 18MC) were analyzed for PCBs and metals; a portion of the samples was analyzed for TCL SVOCs and pesticides. Surface and subsurface soil samples were collected for the EPA in 2014 and 2015 from Upson Park and the Former Flintkote Plant Property (OU2). Additional surface soil samples were collected along the creek banks in 2016. Soils in this OU2 supplemental RI were classified based on location of the soil sample relative to Eighteenmile Creek. Soils were collected from areas where the topography indicated a slope to the creek or located within the wooded area along the creek bank. Upland soil samples were collected from areas outside

of the creek bank areas. These classifications were used along with information on the soil depths for the HHRA and BERA.

The historical analytical data for soil samples in OU2 have been reviewed to determine whether data of sufficient quality and quantity are available to support the HHRA and the BERA. Generally the number of samples is adequate for risk assessment purposes, but additional surface soils and subsurface soil samples were collected at Upson Park, the Former Flintkote Plant Property, and the United Paperboard Company Property to fill the following data gaps:

- **Upson Park**
  - Provide additional surface soil data away from the creek banks to understand whether contamination identified along the creek banks extend into the general public park area.
  - Additional soil sampling to delineate the PCB "hot spot" located between the western creek bank and the Park entrance (DEC-Upson-2 on Figure 5-1) in the northern portion of the Upson Park property.
  - Additional soil samples for bioaccumulation testing to assess exposure pathways for invertivorous terrestrial-dependent wildlife with site-specific data as part of the BERA.
- **Former Flintkote Plant Property**
  - Additional subsurface soil/fill material sampling to evaluate presence or absence of contamination (source areas) in vaults within some of the buildings, and soils/fill beneath the former buildings in areas not previously accessible;
  - Additional sampling to delineate subsurface soil concentrations in the northeast portion of the site not previously accessible.
  - Additional soil samples for bioaccumulation testing to assess exposure pathways for the BERA as noted for Upson Park.
- **United Paperboard Company Property** - Additional soil samples for bioaccumulation testing to assess exposure pathways for the BERA as noted for Upson Park.
- **White Transportation Property** - Although no samples were collected on the White Transportation Property, there is a brief discussion below on the maximum, minimum and average concentrations in historical samples.
- **Background** - Background soil samples (BG) were collected nearby areas in order to characterize risks from contaminants that may also be attributed to background sources. More statistically rigorous evaluations, as outlined in the EPA guidance, may be performed as part of the determination of site-specific preliminary remediation goals if the sample concentrations of the risk drivers are similar to background concentrations.

Corridor Soil Samples

Results of historical samples as well as samples collected during the OU2 supplemental RI field activities are summarized on Table 5-1. Table 5-1 shows the number of samples analyzed, the number of detected results, the average, maximum and minimum of the chemical concentrations, and the location of the sample with the maximum concentration. The following is a summary of the statistical results:

- **Metals:** Metals were detected in one or more of the samples collected. The average concentration of most metals was relatively the same between the historical samples and the supplemental RI samples with the exception of thallium where the average historical concentration was higher than the supplemental RI samples. This is due to one historical sample location (FS-SP11-D410-S-O) with a high concentration of thallium (33 mg/kg). The maximum concentrations of antimony, chromium, copper, and lead in historical samples were also higher than supplemental RI samples. Lead was detected in all 186 samples tested at a range of 1.7 to 77,300 mg/kg;
- **PCBs:** PCBs were detected in 99 of the 213 samples tested with a range of 0.0047 to 626 mg/kg. The average and the maximum total concentrations of historical and supplemental RI samples were in the same order of magnitude;
- **Pesticides:** Pesticides were detected in one or more of the samples collected. dichlorodinitrophenol (DDT) compounds were the most prevalent pesticides detected with a range of 0.0012 to 6.7 mg/kg. The average and the maximum concentration of historical and supplemental RI samples were all low and in the same order of magnitude except for DDT compounds in sample OU2-SS09-Z2 (6.7 mg/kg). This sample also had very high concentrations of total PCBs that could interfere with the quantification DDT compounds concentrations;
- **SVOCs:** SVOCs were detected in one or more of the samples collected. The maximum concentrations of historical samples where higher than maximum concentrations in supplemental RI samples, but average concentrations were similar. PAH compounds were the most prevalent SVOCs detected. Total PAHs were detected in 85 of the 95 samples tested with a range of 0.009 to 1,359 mg/kg;
- **VOCs:** Four VOCs were detected in one or more of the 13 samples collected. There were few historical samples with VOC analyses, thus the reason for the collection of additional VOC samples during this supplemental RI. Only three VOCs were detected in two samples at low concentrations. The following subsections describe property-specific sample results.

5.2.1 Upson Park

Samples OU2-SS01 through SS10 were collected at surface (0 to 0.5 feet) and subsurface (0.5 to 2 feet BGS) depths and analyzed for TCL VOCs, SVOCs, PCBs, pesticides and TAL metals as described in Section 2.1.1. Supplemental samples OU2-SS11 through SS14 collected and analyzed for TCL PCBs to delin-

eate a high concentrations found at OU2-SS09 as shown on Figure 5-1. Samples OU2-SS22, OU2-SS23, and OU2-SS24 (0 to 1 foot BGS) were collected for bio-accumulation testing and determination of site-specific bioaccumulation factors will be presented in the BERA and analyzed for TCL PAHs, PCBs, pesticides, and TAL metals. Soil sample results for Upson Park are included in Appendix A, Table A-1.

Soil samples collected in the upland public areas of the park (areas easily accessible by the general public [e.g., the parking lot, picnic areas, areas along the Canal] as opposed to the steep-sided creek banks on the opposite side of guard rails/fences) were evaluated relative to samples collected in the OU2 creek corridor for current and historical samples. Statistical summaries of positive results are presented in Tables 5-2 and 5-3. The following is a summary of the statistical results for both surface and subsurface soils:

- **Metals:** Metals were detected in one or more of the samples collected for both surface and subsurface soils. The average and maximum concentrations of barium, cadmium, chromium, copper, lead, mercury, nickel, silver, sodium, and zinc in historical samples were higher in the OU2 creek corridor samples within the park than in upland samples. Lead was detected in all 35 surface soil samples tested at a range of 18.8 to 3,480 mg/kg and all 38 subsurface soil samples tested at a range of 7.9 to 77,300 mg/kg;
- **PCBs:** PCBs were detected in 22 of the 40 surface soil samples tested with a range of 0.0063 to 80 mg/kg and 24 of the 46 subsurface soil samples tested with a range of 0.0093 to 390 mg/kg. The average and the maximum total concentration of PCBs in the OU2 creek corridor samples were higher than in the upland park samples which were non-detect in all but three samples. The highest concentration in the upland samples was 0.26 mg/kg in the subsurface at location OU2-SS07. Figure 5-1 illustrates the location of OU2 creek corridor samples with elevated PCBs and upland samples with low-level PCBs in Upson Park. The highest concentration of PCBs were found in the subsurface sample at OU2-SS09. Additional samples were collected to further delineate the extent of the PCBs at this location (see Figure 5-1);
- **Pesticides:** Eighteen pesticides were detected in one or more of the surface soil samples collected and 14 pesticides were detected in one or more of the subsurface soil samples collected. DDT compounds were the most prevalent pesticides detected with a range of 0.007 to 0.097 mg/kg. The average and the maximum concentration of pesticides in creek bank and upland samples were all low and in the same order of magnitude;
- **SVOCs:** All SVOCs tested were detected in one or more of the surface and subsurface soils samples collected. Both average and maximum concentrations of SVOCs in creek bank and upland were the same order of magnitude, the exception of some phthalates that had higher maximum concentrations. PAH compounds were the most prevalent SVOCs detected. Total PAHs were detected in 22 of the 24 samples tested with a range of 0.594 to 42.04 mg/kg;

- **VOCs:** Seven VOCs were detected in one or more of the 11 surface soil samples collected and nine VOCs were detected in one or more of the 10 subsurface soil samples. There were few historical samples with VOC analyses, which is the reason for collecting additional VOC samples during this supplemental RI. The VOCs detected were relatively low in all samples tested with concentrations ranging from 0.0003 to 0.006 mg/kg.

5.2.2 Former Flintkote Plant Property

Soil samples collected from the Former Flintkote Plant Property were analyzed for analyzed for TCL VOCs, SVOCs, PCBs, pesticides, and TAL metals as described in Section 2.1.2. Sample results are shown in Appendix A, Table A-2 and A-3.

Three soil borings (OU2-SB01 through OU2-SB03) were drilled in December 2014 in the northwest portion of the Site in areas not previously sampled. Nine test pits were excavated and sampled (TP-1 through TP-9) and additional waste samples in May 2014 in building foundation exposed at the Former Flintkote Plant Property to characterize potential sources of contamination (particularly PCBs) or extent of fill that could not have been sampled previously. PCBs concentrations in the test pits and other samples found at Former Flintkote Plant Property are shown on Figure 5-2. Three subsurface soil samples were collected from each boring. Seven soil (i.e., OU2-SS15 through OU2-SS21) were collected from the OU2 creek corridor in January 2016 to support site-specific bioaccumulation studies for the BERA (E & E 2016c). The locations were selected to cover a range of contaminant concentrations and analyzed for TCL PAHs, PCBs, pesticides, and TAL metals (see Figure 2-4). The bioaccumulation testing and determination of site-specific bioaccumulation factors will be presented in the BERA.

Statistical summaries of positive results are presented in Tables 5-2 and 5-3.

Soil Borings

Three subsurface soil samples were collected from each boring. The results show negligible changes in concentration levels in all parameters tested compared to historical subsurface sample results. The following is a summary of the statistical results for subsurface soils:

- **Metals:** Metals were detected in one or more of the samples collected. The average and maximum concentrations of most metals was relatively the same between historical samples and supplemental RI samples. Lead was detected in all 49 samples tested at a range of 1 to 46,000 mg/kg;
- **PCBs:** PCBs were detected in 18 of the 49 samples tested with a range of 0.0039 to 6.6 mg/kg. The average and the maximum total concentration of historical and supplemental RI sample PCBs were relatively the same. Figure 5-2 illustrates the distribution of PCBs on the Former Flintkote Plant Property. The figure shows that higher levels of PCBs (greater than 1 ppm) were detected on the southernmost wooded portion of the site, from recent test pits excavated beneath Room B (OU2-TP07, TP08, and TP09) and southern portion of

Building E (OU-TP05), and a few locations on the island between the millrace and the main channel of Eighteenmile Creek;

- **Pesticides:** Pesticides were detected in one or more of the 49 samples collected. DDT compounds were the most prevalent pesticides detected with a range of 0.0003 to 0.108 mg/kg. The average and the maximum concentration of historical samples was similar to the supplemental RI samples;
- **SVOCs:** SVOCs were detected in one or more of the samples collected. PAH compounds were the most prevalent SVOCs detected. Total PAHs were detected in 19 of the 20 samples tested with a range of 0.03 to 380 mg/kg; and
- **VOCs:** Fourteen VOCs were detected in one or more of the 38 subsurface soil samples. Methylene chloride and acetone were the only VOCs detected in the historical samples. The VOCs detected were relatively low in all samples tested with concentrations ranging from 0.0004 to 0.17 mg/kg.

Test Pits

A total of 14 samples were collected associated with this activity. Very high levels of PCBs in the former Flintkote building were not found as shown on Figure 5-2 and no specific source area of PCBs were identified. Overall the results show negligible differences in concentration levels in all parameters tested compared to historical subsurface sample results.

Surface Soils

The following is a summary of the statistical results for surface soils:

- **Metals:** Metals were detected in one or more of the 26 samples collected. The average and maximum concentrations of most metals was relatively the same between historical samples and supplemental RI samples with the exception of the maximum concentration of historical copper, which was higher than the supplemental RI sample concentrations. Lead was detected in all 26 samples tested at a range of 2.7 to 8,600 mg/kg;
- **PCBs:** PCBs were detected in nine of the 26 samples tested with a range of 0.033 to 4.7 mg/kg. The average and the maximum total concentration of historical and supplemental RI sample PCBs were relatively the same. Figure 5-2 illustrates the distribution of PCBs on the Former Flintkote Plant Property. The highest concentrations in the surface soil were found at locations FS-SS05-S-O and OU2-SS17-Z1, collected in the same area on the Island;
- **Pesticides:** Seventeen pesticides were detected in one or more of the 19 samples collected. DDT compounds were the most prevalent pesticides detected with a range of 0.003 to 0.059 mg/kg. DDT compounds were the only pesticides detected in the supplemental RI samples;
- **SVOCs:** SVOCs were detected in one or more of the 20 samples collected. PAH compounds were the most prevalent SVOCs detected. Total PAHs were detected in 19 of the 20 samples tested with a range of 2.48 to 1,359 mg/kg; and

- **VOCs:** Only methylene chloride was detected in both of the two samples collected.

5.2.3 Former United Paperboard Company Property

Four surface soil samples (0 to 1 foot BGS) (OU2-SS18 through OU2-SS21) were collected from the OU2 creek corridor near the Former United Paperboard Company Property in January 2016 to support site-specific bioaccumulation studies for the BERA (E & E 2016c). The locations were selected to cover a range of contaminant concentrations and analyzed for TCL PAHs, PCBs, pesticides, and TAL metals (see Figure 2-4). The bioaccumulation testing and determination of site-specific bioaccumulation factors will be presented in the BERA. Soil sample results are included in Appendix A, Table A-4.

Statistical summaries of positive results are presented in Tables 5-6 and 5-7.

Surface Soils

The following is a summary of the statistical results for surface soils:

- **Metals:** Metals were detected in one or more of the samples collected. The average and maximum concentrations of most metals was relatively the same between historical samples and supplemental RI samples with the exception of the calcium, copper, lead, and zinc, which were higher than the supplemental RI sample concentrations. Lead was detected in all 35 samples tested at a range of 4.5 to 4,340 mg/kg;
- **PCBs:** PCBs were detected in 18 of the 35 samples tested with a range of 0.014 to 38 mg/kg. PCBs were only detected at location OU2-SS20-Z1 in the supplemental RI. The PCB concentration (38 mg/kg) was higher than maximum concentration in the historical surface soil samples. However, OU2-SS20-Z1 (depth of 0 to 1 foot BGS) was collected close to 18MC-L08-S05 which had subsurface concentrations of PCBs at 12 mg/kg (depth of 0.9 to 1.5 feet BGS) (see Figure 2-1a);
- **Pesticides:** Nineteen pesticides were detected in one or more of the 20 samples collected. DDT compounds were the most prevalent pesticides detected with a range of 0.0012 to 0.175 mg/kg. P,P' DDT was the only pesticides detected in one of the supplemental RI samples;
- **SVOCs:** SVOCs tested were detected in one or more of the 22 samples collected. PAH compounds were the most prevalent SVOCs detected. Total PAHs were detected in 21 of the 22 samples tested with a range of 0.18 to 288 mg/kg; and
- **VOCs:** VOCs were not tested.

Subsurface Soils

No new subsurface soils samples were collected in the supplemental RI. The following is a summary of the statistical results for historical subsurface soils:

- **Metals:** Metals were detected in one or more of the 43 samples collected. Lead was detected in all 43 samples tested at a range of 1.7 to 7,430 mg/kg;
- **PCBs:** PCBs were detected in 13 of the 43 samples tested with a range of 0.0047 to 626 mg/kg. The highest concentration was found at location 18MC-SB05 on the same side of the creek as the samples with the highest surface concentrations;
- **Pesticides:** Pesticides were not tested in the samples collected;
- **SVOCs:** SVOCs were detected in one or more of the 16 samples collected. PAH compounds were the most prevalent SVOCs detected. Total PAHs were detected in 11 of the 16 samples tested with a range of 0.035 to 23 mg/kg; and
- **VOCs:** VOCs were not tested.

5.2.4 Former White Transportation Property

No supplemental RI samples were collected at the Former White Transportation Property. Statistical summaries of positive results are presented in Tables 5-8 and 5-9 for historical samples. The following is a summary of the statistical results for surface soils:

- **Metals:** Metals were detected in all 12 samples. Antimony and silver were only detected in seven of the 12 samples; mercury was detected in nine of the 12 samples; and selenium was detected in six of the 12 samples. Lead was detected in all 12 samples at a range of 4.8 to 3,750 mg/kg;
- **PCBs:** PCBs were detected in eight of the 12 samples tested with a range of 0.0078 to 0.67 mg/kg;
- **Pesticides:** Fifteen pesticides were detected in one or more of six samples collected. DDT compounds were the most prevalent pesticides detected with a range of 0.0103 to 0.278 mg/kg;
- **SVOCs:** Twenty-seven SVOCs were detected in one or more of the 10 samples collected. PAH compounds were the most prevalent SVOCs detected. Total PAHs were detected in all 10 of the samples tested with a range of 0.46 to 12.6 mg/kg; and
- **VOCs:** VOCs were not tested.

The following is a summary of the statistical results for subsurface soils:

- **Metals:** Metals were detected in all of the 23 samples. Antimony and silver were only detected in nine of the 23 samples; cadmium was detected in 21 of the 23 samples; mercury was detected in 20 of the 23 samples; and selenium and thallium were detected in one of the 23 samples. Lead was detected in all 23 samples at a range of 1.7 to 2,590 mg/kg;
- **PCBs:** PCBs were detected in six of the 23 samples tested with a range of 0.012 to 0.48 mg/kg;
- **Pesticides:** Pesticides were not tested;

- **SVOCs:** SVOCs were detected in one or more of the six samples collected. PAH compounds were the most prevalent SVOCs detected. Total PAHs were detected all six samples tested with a range of 0.009 to 0.934 mg/kg; and
- **VOCs:** VOCs were not tested.

5.2.5 Background

Background samples were collected, and the results are presented in Appendix A. Two background samples were collected as part of the site investigation of the Former Flintkote Plant Property (TVGA 2005a). Additionally, published soil background values from the New York State Brownfield cleanup program and Eastern United States background levels were used as representative background values when site background was not available for previous investigations (NYSDEC 2006c; Shacklette and Boerngen 1984). Additional background soils were collected as part of this investigation as described in Section 2.1.5. All background soil samples were analyzed for TCL VOCs, SVOCs, PCBs, pesticides, and TAL metals and results are presented in Appendix A, Table A-5.

A number of contaminants found in OU2 are naturally occurring (e.g., most metals, such as iron, lead, copper, zinc, and aluminum), or are ubiquitous in environmental media (PAHs and dioxin/furan) as a result of natural processes like combustion or other regional or global human activities. For the NYSDEC site investigations, contaminant concentrations were compared with state screening standards so no background or reference data were collected historically for OU2. Therefore, background samples were collected as part of the supplemental RI as described below.

As part of this supplemental RI, 14 background soil samples were collected from seven locations from areas adjacent to the Canal east of Eighteenmile Creek (See Figure 2-2 for locations). The results are shown in Table 5-10.

The following is a summary of the statistical results for background soils:

- **Metals:** Metals were detected in one or more of the 17 samples collected. Lead was detected in all 17 samples tested at a range of 11.9 to 109 mg/kg;
- **PCBs:** PCBs were not detected in any of the 17 samples collected;
- **Pesticides:** Fourteen pesticides were detected in one or more of the 17 samples collected. DDT compounds were the most prevalent pesticides detected with a range of 0.001 to 0.025 mg/kg;
- **SVOCs:** SVOCs were detected in 13 of the 17 samples collected. PAH compounds were the most prevalent SVOCs detected. Total PAHs were detected in 13 of the 27 samples tested with a range of 0.018 to 5.21 mg/kg; and
- **VOCs:** VOCs were not tested.

5.3 Groundwater

The supplemental RI included tasks to further characterize the nature and extent of groundwater contamination, identify the source(s) of the chlorinated VOCs to the overburden groundwater at MW05 and MW14, and identify gradients and flow directions of groundwater upgradient of OU2-MW05 and OU2-MW14. The groundwater was sampled and analyzed to determine whether current concentrations of all TCL/TAL compounds present in groundwater at concentrations that represent a potential risk to human receptors as part of the HHRA (E & E 2016b). Groundwater investigation was focused on overburden groundwater on the west site of the OU2 creek corridor where VOC compounds were detected during historical investigations.

Six groundwater wells were sampled in December 2014 and May 2015 in the central portion of the contaminated area (four existing wells in Upson Park; two existing wells on the west side of Eighteenmile Creek on the Former United Paperboard Company Property); one existing well on Water Street; and one new well on Monroe Street (see Figure 5-3). Five of the wells were analyzed for TCL SVOCs, PCBs, and pesticides, trace level TCL VOCs, and TAL metals (MW05, MW14, MW15, MW16, and MW18) to support the HHRA. Well MW09 was analyzed for trace level TCL VOCs only, due to insufficient water volume in the well. Groundwater sample results are included in Appendix A, Table A-6. Groundwater sample results for VOCs for all rounds are shown on Figure 5-3. The statistical summary of the results for all detected chemicals in all rounds are shown on Table 5-11.

VOCs

The groundwater samples collected in 2007 and 2009 from 18MC-MW14 contained elevated levels of TCE and cis-1,2-DCE along with lesser amounts of other chlorinated solvents (see Figure 5-3). Low levels of chlorinated solvents were also detected in 18MC-MW15. The maximum levels of both TCE and cis-1,2-DCE in 18MC-MW14 were relatively the same in both rounds in 2007, and in the 2014/2015 rounds, but the levels in 2014/2015 were about half of those in 2007. Well 18MC-MW05 contained elevated levels of cis-1,2-DCE and trace levels of vinyl chloride in 2007, but the levels of cis-1,2-DCE doubled in 2015 while vinyl chloride was non-detect. Since cis-1,2-DEC is a breakdown product of TCE, the increased levels could be the result of the TCE breakdown. The new well (18MC-MW18), upgradient of 18MC-MW05, did not contain any chlorinated solvents (see Table A-6 and Figure 5-3). Since there are no wells upgradient of 18MC-MW14, and no chlorinated solvents were detected in 18MC-MW18, the source of the chlorinated solvents still remains unknown.

Metals

Twenty metals were found in the Upson Park groundwater samples and 16 metals were found in the United Paperboard Property groundwater samples (see Table A-6). The average level of metals in the OU2 creek corridor in the sample rounds between 2007 and 2015 were all in the same order of magnitude. However, the levels of most metals in 2003 round of groundwater sampling were an order of

magnitude or several orders of magnitude higher than the more recent rounds of sampling (see Table 5-11). The higher metal concentrations are attributable to high turbidity as explained in the Former Flintkote Plant Property SI report (TVGA 2005a).

PCBs

As anticipated, PCBs were not detected in any of the groundwater samples collected from Upson Park or the United Paperboard Company Property wells (see Table A-6). Historically, PCBs have not been detected in any of the wells in Upson Park (see Table 5-11), and was only detected in one Former Flintkote Plant Property well [198-F]). In addition, no PCBs were detected in the two well points on the Former Flintkote Plant Property on the east side of the creek. These well points were installed and sampled in the vicinity of 198-F (one approximately 25 feet downgradient of 198-F, and one approximately 25 feet upstream [both at the creek bank]).

Pesticides

Low levels (all at levels below 0.0093 µg/L) of eight different pesticides were detected in the 2014/2015 sampling events: five pesticides in OU2-MW18 in December 2014, but only one in May 2015; one in OU2-MW16 only in December 2014; and one in OU2-MW05 in both December 2014 and May 2015 (see Table A-6). Historically, only two pesticides were detected the OU2 creek corridor wells, all at concentrations below 0.13 µg/L (see Table 5-11).

SVOCs

Twelve SVOCs were detected in the Upson Park groundwater samples and only two in the Former United Paperboard Company Property wells in 2014/2015 (see Table A-10). Most were low levels (below 1 µg/L) except for caprolactam which was detected up to 1.6 µg/L. Historically, levels of SVOCs have been low (mostly less than 1 µg/L with a few up to 3 µg/L) except for one high level of pentachlorophenol detected once (200 µg/L) in a 2003 sample; caprolactam (27 µg/L) in a 2007; PAHs (20.28 µg/L) in a 2007 sample; pyrene (12 µg/L) in a 2007 sample; and fluoranthene (7.7 µg/L) in a 2007 sample (see Table 5-11).

Concentrations of chemicals in groundwater in December 2014 and May 2015 are consistent with the historical data and indicate no significant changes in historical chemical concentrations, especially the chlorinated solvent compounds. Although the objective of the additional VOC investigations in the vicinity of Upson Park and west side of the Former United Paperboard Company Property and the PCB investigations at the Former Flintkote Plant Property were designed to determine the origin of these contaminants, the sources of these compounds still remains unknown.

5.4 Sediment and Surface Water

Sediment has been extensively sampled as part of previous investigations at locations depicted on Figure 2-5. Sediments collected by NYSDEC in 2002 and 2005 (shown as DEC-SED) and Niagara County Soil and Water Conservation District

track down study (shown as TRK) were analyzed for PCBs and selected metals. A few sediments and one surface water sample (shown as FS) collected by TVGA Consultants for Niagara County in 2005 were analyzed for TCL/TAL parameters. Systematic sampling of sediments in the OU2 creek corridor occurred in 2007 as part of the NYSDEC supplemental RI (shown as 18MC-L). These samples were analyzed for PCBs and metals, with a portion of the samples analyzed for TCL SVOCs and pesticides. As part of the 2007 sampling, 20 transects spanning the Eighteenmile Creek and its banks were established. Sampling stations along each transect were as follows:

- The center of the creek channel was sampled, if possible. This sample was classified as a sediment sample and was designated as station S2 and referred to as "mid-channel" samples.
- Samples were collected from each shoreline that were classified as sediment samples, were designated as stations S1 (west bank) and S3 (east bank) and are referred to as "inner bank" samples.
- Two samples were collected from each side of the upper banks of the creek channel. These were classified as soil samples, were designated as stations S4 and S5 (west bank), and S6 and S7 (east bank) and are referred to as "outer bank" samples.

Based on these previous investigations sufficient sample data are available for the OU2 creek corridor to assess sediment nature and extent of PCBs and metals but more limited data are available for other analytical parameters. PCBs, metals, pesticides and PAHs were found in the sediment samples collected from the OU2 creek corridor at concentrations that indicate the potential for both acute and chronic toxicity impacts based on comparison with screening criteria. To support the BERA, toxicity testing was performed in May 2015 to determine if actual impacts exist. In addition for the BERA, bioaccumulation testing was performed in January 2016 to assess exposure pathways for invertivorous terrestrial and aquatic-dependent wildlife because site-specific data regarding contaminant concentrations in terrestrial and aquatic invertebrates were not available for the Eighteenmile Creek OU2 Site.

Surface water has not been extensively sampled as part of previous investigations due to high flow rates in the Eighteenmile Creek and lack of standing water. Surface water and sediment from within the pipe that outfalls into the creek near William Street were sampled as part of the Flintkote SI in 2005. Surface waters samples (18MC) were collected for NYSDEC in 2008 as part of additional investigation of dissolved PCBs from the Canal. The study indicated that there is a source of PCBs to the surface water within OU2 and suspected that the source is beneath the former Flintkote Building (NYSDEC 2010). Additional surface water was sampled to assess toxicity impacts.

Toxicity and bioaccumulation results was evaluated as part of the BERA. The additional sediment and surface water samples also were evaluated to determine any changes to the nature and extent of contamination as described below.

Sediment and surface water samples also were collected from the background area in order to characterize risks from contaminants that may also be attributed to background sources. More statistically rigorous evaluations, as outlined in the EPA guidance, may be performed as part of the determination of Site-specific preliminary remediation goals if the sample concentrations of the risk drivers are similar to background concentrations.

5.4.1 Sediment

Three sediment samples (i.e., OU2-SED01 through OU2-SED03) were collected from the OU2 creek corridor in May 2015 at locations expected to represent a range of chemical concentrations (see Figure 2-4). Samples were analyzed for TCL VOCs, SVOCs, PCBs, pesticides and TAL metals, AVS/SEM, and TOC. Sample OU2-SED02 was also sampled for PCB congeners and dioxin/furans. Analytical results are presented on Appendix A, Table A-7. Sample locations are shown on Figure 2-5. Toxicity results are presented in Appendix E.

Six sediment samples (i.e., OU2-SED04 through OU2-SED09) were collected from the OU2 creek corridor in January 2016 to support site-specific bioaccumulation studies for the BERA (E & E 2016c). The locations were selected to cover a range of contaminant concentrations to establish a relationship between sediment and benthic-macroinvertebrate contaminant levels (see Figure 2-5). The samples also were analyzed TCL PAH, PCBs, and pesticides; trace metals; and TOC. Analytical results are provided in Appendix A, Table A-7. The bioaccumulation testing and determination of site-specific bioaccumulation factors is presented in the BERA.

Results of all sediment samples collected during the supplemental RI field activities are summarized on Table 5-12 (labeled as “2014 OU2”). Table 5-12 shows the number of samples analyzed, the number of detected results, and the average, maximum and minimum of the chemical concentrations. Table 5-12 also presents the summary results for all samples collected as part of previous investigations (labeled as “2010 Prior”). The sample collected from FS-SED-1 was excluded from the sediments data set because the sample was collected inside an outfall pipe (TVGA 2005a). The sediment samples collected as part of the supplemental RI field are comparable to the samples collected as part of previous investigations. However, the highest concentrations of the arsenic, copper, and lead; and total PCBs and PAH in sediment samples were found in the previous investigations. The maximum concentrations of these chemicals were up to 100 times higher than the maximum concentrations found in the samples collected in 2015 and 2016. The identification of hotspots as part of previous investigations is because over 147 samples were collected versus 10 samples collected as part of the supplemental RI.

The following is a summary of the statistical results for sediment samples:

- **Metals:** Metals were detected in one or more of the 160 samples collected. Lead was detected in all 160 samples tested at a range of 11 to 25,400 mg/kg;
- **PCBs:** PCBs were not detected in 137 of the 165 samples collected with a concentration range of 0.006 to 390 mg/kg;
- **Pesticides:** Twenty pesticides were detected in one or more of the 41 samples collected. DDT compounds were the most prevalent pesticides detected with a range of 0.0013 to 1.39 mg/kg;
- **SVOCs:** SVOCs were detected in one or more of the 41 samples collected. PAH compounds were the most prevalent SVOCs detected. Total PAHs were detected in all 41 samples tested with a range of 0.049 to 599 mg/kg; and
- **VOCs:** VOCs were not detected in the three samples analyzed.

Concentrations of lead and total PCB and PAH in sediment are plotted versus linear distance in feet from the Canal on Figure 5-4. The concentrations represent the maximum concentration at each sample location in mg/kg. The locations of the confluence of the Headwaters East Branch and Headwaters West Branch, the Clinton Street Dam, and the William Street Dam also are indicated on the graph. The distribution shows that the highest concentrations of lead are between Clinton Street and William Street. The lead distribution is representative of the other metals found at the site. The highest concentrations of the PCB and PAH are found below the William Street Dam. The average concentrations of sediments deposited behind the Clinton Street Dam are lower than concentrations below dam. The distribution appears to indicate that the Canal is not an ongoing source of PCBs and other contaminants and that the primary continuing sources are downstream of Clinton Street Dam.

5.4.2 Surface Water

Results of all surface water samples collected during the supplemental RI field activities and previous investigations are summarized on Table 5-13 the same way as sediment samples are summarized in Table 5-12. The number of surface water samples collected are too low for the statistical summary to be relevant. A summary of surface water sample analyses are as follows:

- **Metals:** Metals were detected in one or more of the four samples collected. Lead was detected in all four samples tested at a range of 1.5 to 3.5 mg/L;
- **PCBs:** None detected;
- **Pesticides:** Four pesticides were detected in one or more of the three samples collected.
- **SVOCs:** Only two SVOCs were detected (benzyl butyl phthalate and bis(2-thrylhexyl) phthalate in the three samples tested; and
- **VOCs:** None detected.

5.4.3 Background Sediment and Surface Water

Background samples were collected, and the results are presented in Appendix A. One background surface water sample (BG1-SW01) and seven background sediment samples (BG1-SED01 through BG1-SED07) were collected in May 2015 from the surface water impoundments (ponds) located on the East Branch of Eighteenmile Creek in Gasport, New York (see Figure 2-6). All background sediment samples were analyzed for TCL VOCs, SVOCs, PCBs, pesticides, TAL metals and TOC. The results are presented in Appendix A, Table A-10, and summarized in Table 5-14.

The following is a summary of the statistical results for sediment samples:

- **Metals:** Metals were detected in one or more of the seven samples collected. Lead was detected in all seven samples tested at a range of 25 to 92 mg/kg;
- **PCBs:** PCBs were detected at low levels in six of the samples collected at a range of 0.02 to 0.34 mg/kg;
- **Pesticides:** Seventeen pesticides were detected at very low levels in one or more of the seven samples collected. DDT compounds were the most prevalent pesticides detected with a range of 0.0002 to 0.011 mg/kg;
- **SVOCs:** SVOCs were detected in one or more of the seven samples collected. PAH compounds were the most prevalent SVOCs detected. Total PAHs were the most prevalent with a range of 1.09 to 6.78 mg/kg; and
- **VOCs:** VOCs were not tested.

One surface water sample was collected and the results are presented in Appendix A, Table A-8, with the other surface water samples. The results were not summarized separately because only one sample was collected.

5.5 Fish Tissue

Fish were sampled and analyzed as described in Section 2.4 and the chemical concentrations of the tissue are summarized in Appendix A, Table A-11. The number of forage-fish composite samples collected from OU2 and the background area was also much lower than the target of 10 composite samples per area (see Table 2-5) due to limited forage-fish availability. Also, the species of forage fish available for collection varied between areas. Rock bass were the most common species captured at OU2, along with one pumpkinseed, which was included with one rock bass for the third composite sample. A number of species were captured and used for tissue analysis in the reference area; composite samples were collected for rock bass, pumpkinseed, bluegills, and one individual white crappie.

The forage fish sampling composite sample data for OU2 and the background area results are provided in Table 5-15. The BERA report will compare the forage fish data with ecological screening levels for fish tissue.

The following is a summary of the results for forage fish samples:

- **Metals:** Metals were detected in all three composite samples from OU2 and all four composite samples from background area. Lead concentrations ranged from 0.1 to 0.78 mg/kg in samples from OU2 and 0.071 to 0.14 mg/kg in samples from the background area. Mercury concentrations ranged from 0.064 to 0.18 mg/kg in samples from OU2 and 0.046 to 0.052 mg/kg in samples from the background area;
- **PCBs:** PCBs were detected in all three composite samples from OU2 and all four composite samples from background area. PCB concentrations ranged from 0.151 to 0.83 mg/kg in samples from OU2 and 0.07 to 0.155 mg/kg in samples from the background area;
- **Pesticides:** Twenty pesticides were detected in all three composite samples from OU2 and all four composite samples from background area. DDT compounds had the highest concentrations which ranged from 0.043 to 0.11 mg/kg in samples from OU2 and 0.015 to 0.037 mg/kg in samples from the background area;
- **SVOCs:** Phenolic compounds were detected at low levels in all three composite samples from OU2 and all four composite samples from background area. The concentration ranges in the samples from OU2 and background were very similar.

As insufficient numbers of largemouth bass were collected at either location, other species captured were used as surrogates for the game fish fillet samples. At OU2, silver redhorse, smallmouth bass, and walleye were collected for fillet analysis. At the background location, one largemouth bass was captured, but the only fish captured was carp (see Table 2-5).

The results for game-fish fillet data for OU2 and background area is provided in Table 5-16. The HHRA report (to be provided under separate cover) will compare the fillet data with human health screening levels for fish tissue to select contaminants of potential concern in fish for the HHRA.

The following is a summary of the results for game fish samples:

- **Metals:** Metals were detected in nine fillet samples from OU2 and all 10 fillet samples from background area that were analyzed for metals. Lead concentrations ranged from 0.018 to 0.33 mg/kg in samples from OU2 and 0.02 to 2.7 mg/kg in samples from the background area. Mercury concentrations ranged from 0.064 to 0.5 mg/kg in samples from OU2 and 0.048 to 0.16 mg/kg in samples from the background area;
- **PCBs:** PCBs were detected in all 10 fillet samples from OU2 and all 10 fillet samples from background area. PCB concentrations ranged from 0 0.0067 to 0.61 mg/kg in samples from OU2 and 0.0062 to 0.199 mg/kg in samples from the background area;

- **Pesticides:** Twenty pesticides were detected in all 10 fillet samples from OU2 and all 10 fillet samples from background area. DDT compounds had the highest concentrations which ranged from 0.004 to 0.13 mg/kg in samples from OU2 and 0.0018 to 0.103 mg/kg in samples from the background area;
- **SVOCs:** Phenolic compounds and two PAH compounds were detected at low levels detected in all eight fillet samples from OU2 and all 10 fillet samples from background area that were analyzed for SVOCs. The concentration ranges in the samples from OU2 and background were very similar.

Table 5-1 Statistical Summary of Positive Results in OU2 Creek Corridor Soil Samples; Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection		Overall Range	Average Conc		Minimum Conc		Maximum Conc		Location of Max	
			2010 Prior to	2014 OU2	All Samples	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2
Metals	ALUMINUM	mg/kg	173/173	15/15	1140 - 15900	6006	6991	1160	1140	15100	15900	18MC-SS14-Z1	OU2-SS10-Z1
Metals	ANTIMONY	mg/kg	95/173	7/15	0.64 - 980	37	29	0.64	1.4	980	110	18MC-L09-S04-Z2	OU2-SS17-Z1
Metals	ARSENIC	mg/kg	181/181	15/15	1 - 123	15	19	1.00	4.5	123	103	18MC-SB02-Z1	OU2-SS24-Z1
Metals	BARIUM	mg/kg	172/173	15/15	8.7 - 3900	299	269	8.7	45	3900	1490	UPSON-2B	OU2-SS24-Z1
Metals	BERYLLIUM	mg/kg	171/173	14/15	0.09 - 3.3	0.5	0.79	0.09	0.35	2.5	3.3	18MC-L03E-S05-Z1	OU2-SS24-Z1
Metals	CADMIUM	mg/kg	146/173	15/15	0.05 - 38	2.83	4.4	0.05	0.48	38	35	FS-SS02-S-O	OU2-SS17-Z1
Metals	CALCIUM	mg/kg	173/173	15/15	770 - 242000	56043	46364	770	4000	242000	133000	18MC-SB10-Z2	OU2-SS09-Z1
Metals	CHROMIUM, HEXAVALENT	mg/kg	--	1/1	0.2 - 0	--	0	--	0.2	--	0		OU2-SS10-Z1
Metals	CHROMIUM, TOTAL	mg/kg	181/181	15/15	2.6 - 918	36.78	39.1	2.6	4.2	918	176	18MC-L02W-S04-Z3	OU2-SS17-Z1
Metals	COBALT	mg/kg	173/173	14/15	1.3 - 59	8	12	1.3	2	59	24	18MC-MW14-Z1	OU2-SS19-Z1
Metals	COPPER	mg/kg	181/181	15/15	6.5 - 51000	918	1128	6.5	22.9	51000	8250	FS-SS02-S-O	OU2-SS17-Z1
Metals	IRON	mg/kg	173/173	15/15	2840 - 246000	32764	42120	2840	12100	246000	175000	18MC-L02W-S04-Z3	OU2-SS24-Z1
Metals	LEAD	mg/kg	186/186	15/15	2 - 77300	1134	477	2	31	77300	2480	18MC-SB14-Z2	OU2-SS17-Z1
Metals	MAGNESIUM	mg/kg	173/173	15/15	122 - 144000	12807	14303	122	483	144000	43100	18MC-MW01-Z1	OU2-SS09-Z1
Metals	MANGANESE	mg/kg	173/173	15/15	11 - 4100	739	734	11	58	4100	1610	18MC-SB01-Z2	OU2-SS21-Z1
Metals	MERCURY	mg/kg	154/173	15/15	0 - 22	1	2	0	0	22	12	UPSON-1B	OU2-SS24-Z1
Metals	NICKEL	mg/kg	173/173	15/15	3.8 - 1090	45.25	69.8	3.8	9.8	1090	373	18MC-SB14-Z2	OU2-SS17-Z1
Metals	POTASSIUM	mg/kg	172/173	15/15	103 - 2810	1164	1012	103	326	2810	1640	18MC-L04W-S05-Z2	OU2-SS23-Z1
Metals	SELENIUM	mg/kg	57/173	5/15	1 - 12	3	2	1	1	12	3	18MC-SS01-Z1	OU2-SS20-Z1
Metals	SILVER	mg/kg	106/173	7/15	0.11 - 80.6	5.11	9.44	0.11	0.46	80.6	48.2	UPSON-1	OU2-SS24-Z1
Metals	SODIUM	mg/kg	166/173	11/15	49.8 - 1430	199.79	203.46	49.8	66.9	1430	460	18MC-MW14-Z1	OU2-SS24-Z1
Metals	THALLIUM	mg/kg	24/173	2/15	0.1 - 33	8	0.2	1	0.1	33	0.3	FS-SP11-D410-S-O	OU2-SS15-Z1
Metals	VANADIUM	mg/kg	173/173	15/15	3.5 - 103	15.83	17.68	3.5	7.6	103	39.8	FS-SS01-S-O	OU2-SS24-Z1
Metals	ZINC	mg/kg	181/181	15/15	2.9 - 21900	908	1084	2.9	89.2	21900	9030	FS-SS02-S-O	OU2-SS17-Z1
PCB	PCB, Total	mg/kg	80/185	19/28	0.005 - 626	9.8	35.8	0.005	0.033	626	390	18MC-SB15-Z1	OU2-SS09-Z2
PCB	PCB-1248 (AROCLOR 1248)	mg/kg	29/185	8/28	0.005 - 550	19.8	35.1	0.005	0.038	550	250	18MC-SB15-Z1	OU2-SS09-Z2
PCB	PCB-1254 (AROCLOR 1254)	mg/kg	46/185	12/28	0.012 - 140	2.7	14.0	0.012	0.022	80	140	UPSON-2B	OU2-SS09-Z2
PCB	PCB-1260 (AROCLOR 1260)	mg/kg	27/185	15/28	0.007 - 180	3.1	12.9	0.007	0.012	76	180	18MC-SB15-Z1	OU2-SS12-Z3
PCB	PCB-1262 (Aroclor 1262)	mg/kg	4/144	0/28	0.016 - 1	0.2	--	0.016	--	1	--	18MC-L18-S06-Z2	
PCB	PCB-1262 (AROCLOR 1262)	mg/kg	7/144	12/28	0.009 - 26	0.22	3.17	0.009	0.01	1.20	26	18MC-L02W-S04-Z3	OU2-SS14-Z2
Pesticides	ALDRIN	mg/kg	7/45	0/15	0.001 - 0.01	--	--	0.001	--	0.01	--	18MC-L09-S04-Z1	
Pesticides	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	mg/kg	9/45	0/15	0.0013 - 0.0093	0.01	--	0.0013	--	0.0093	--	18MC-SS05-Z1	
Pesticides	ALPHA ENDOSULFAN	mg/kg	8/45	0/14	0.0013 - 0.016	0.01	--	0.0013	--	0.016	--	18MC-L07-S05-Z1	
Pesticides	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	mg/kg	3/45	1/15	0.0007 - 0.054	0.02	--	0.0008	0.0007	0.054	0.0007	18MC-L07-S05-Z1	OU2-SS10-Z1
Pesticides	BETA ENDOSULFAN	mg/kg	8/45	0/14	0.0012 - 0.036	0.01	--	0.0012	--	0.036	--	18MC-L09-S04-Z1	
Pesticides	cis-Chlordane	mg/kg	5/45	0/15	0.0009 - 0.018	0.01	--	0.0009	--	0.018	--	18MC-L02E-S04-Z1	
Pesticides	DDT, Total	mg/kg	36/45	6/15	0.0012 - 6.7	0.05	1.14	0.0034	0.0012	0.278	6.7	18MC-L02E-S04-Z1	OU2-SS09-Z2

Table 5-1 Statistical Summary of Positive Results in OU2 Creek Corridor Soil Samples; Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection		Overall Range	Average Conc		Minimum Conc		Maximum Conc		Location of Max	
			2010 Prior to	2014 OU2	All Samples	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2
Pesticides	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	mg/kg	9/45	0/15	0.0005 - 0.0085	--	--	0.0005	--	0.0085	--	18MC-SS01-Z1	
Pesticides	DIELDRIN	mg/kg	10/45	2/15	0.01 - 0.45	0.08	0.020	0.01	0.02	0.45	0.026	18MC-L16W-S04-Z1	OU2-SS10-Z2
Pesticides	ENDOSULFAN SULFATE	mg/kg	3/45	0/15	0.0021 - 0.025	0.01	--	0.0021	--	0.0250	--	FS-SS09-S-O	
Pesticides	ENDRIN	mg/kg	8/45	1/15	0.0018 - 0.2	0.01	0.2	0.0018	0.2	0.0	0.2	FS-SS06-S-O	OU2-SS09-Z2
Pesticides	ENDRIN ALDEHYDE	mg/kg	5/45	0/14	0.0083 - 0.097	0.03	--	0.0083	--	0.097	--	18MC-SS08-Z1	
Pesticides	ENDRIN KETONE	mg/kg	11/45	2/14	0.0031 - 0.034	0.01	0.01	0.0031	0.0034	0.0340	0.0091	FS-SP02-D26-S-O	OU2-SS10-Z2
Pesticides	GAMMA BHC (LINDANE)	mg/kg	7/45	0/14	0.0006 - 0.011	--	--	0.0006	--	0.011	--	18MC-L07-S05-Z1	
Pesticides	HEPTACHLOR	mg/kg	0/45	3/15	0.0018 - 0.85	--	0.28	--	0.0018	--	0.85		OU2-SS09-Z2
Pesticides	HEPTACHLOR EPOXIDE	mg/kg	1/45	1/15	0.0006 - 0.0065	--	0.01	0.0006	0.0065	0.0006	0.0065	18MC-L08-S04-Z1	OU2-SS24-Z1
Pesticides	METHOXYCHLOR	mg/kg	15/45	/15	0.004 - 0.4	0.08	--	0.004	--	0.4	--	18MC-L09-S04-Z1	
Pesticides	P,P'-DDD	mg/kg	11/45	1/13	0.0028 - 0.028	0.01	0.01	0.0028	0.0083	0.028	0.0083	18MC-L02E-S04-Z1	OU2-SS24-Z1
Pesticides	P,P'-DDE	mg/kg	30/45	4/15	0.001 - 2.9	0.03	0.73	0.0012	0.001	0.12	2.9	18MC-L07-S05-Z1	OU2-SS09-Z2
Pesticides	P,P'-DDT	mg/kg	32/45	6/15	0.0012 - 3.8	0.03	0.65	0.0013	0.0012	0.14	3.8	18MC-L02E-S04-Z1	OU2-SS09-Z2
Pesticides	Trans-Chlordane	mg/kg	4/45	1/15	0.004 - 0.1	0.03	--	0.0068	0.004	0.1	0.004	18MC-L07-S05-Z1	OU2-SS10-Z2
SVOCs	1,4-DIOXANE (P-DIOXANE)	mg/kg	3/51	--	0.99 - 2.8	2	--	0.99	--	2.8	--	18MC-MW11-Z1	
SVOCs	2,4-DICHLOROPHENOL	mg/kg	3/80	/4	0.011 - 0.11	0.07	--	0.011	--	0.11	--	18MC-MW13-Z1	
SVOCs	2-CHLOROPHENOL	mg/kg	3/80	0/4	0.02 - 0.03	0.02	--	0.02	--	0.03	--	18MC-MW13-Z1	
SVOCs	2-METHYLNAPHTHALENE	mg/kg	29/80	4/15	0.01 - 9.2	0.49	0.15	0.01	0.06	9.20	0.37	FS-SS06-S-O	OU2-SS20-Z1
SVOCs	2-METHYLPHENOL (O-CRESOL)	mg/kg	3/80	0/4	0.05 - 0.13	0.08	--	0.05	--	0.13	--	18MC-MW11-Z1	
SVOCs	2-NITROANILINE	mg/kg	1/80	0/4	0.18 - 0.18	0.18	--	0.18	--	0.18	--	FS-SS04-S-ORI	
SVOCs	4-METHYLPHENOL (P-CRESOL)	mg/kg	4/80	0/4	0.02 - 1	0.45	--	0.02	--	1	--	18MC-MW11-Z1	
SVOCs	4-NITROANILINE	mg/kg	1/80	0/4	0.06 - 0.06	0.06	--	0.06	--	0.06	--	FS-SS10-S-O	
SVOCs	ACENAPHTHENE	mg/kg	22/80	4/15	0.01 - 33	1.81	0.62	0.01	0.05	33	1.9	FS-SS06-S-O	OU2-SS20-Z1
SVOCs	ACENAPHTHYLENE	mg/kg	33/80	4/15	0.01 - 2.3	0.31	0.16	0.01	0.11	2.30	0.27	18MC-L09-S04-Z1	OU2-SS16-Z1
SVOCs	ACETOPHENONE	mg/kg	5/80	0/4	0.01 - 0.19	0.07	--	0.01	--	0.19	--	18MC-MW11-Z1	
SVOCs	ANTHRACENE	mg/kg	44/80	11/15	0.01 - 57	1.89	0.57	0.01	0.03	57	4.2	FS-SS06-S-O	OU2-SS20-Z1
SVOCs	BENZALDEHYDE	mg/kg	5/80	0/4	0.03 - 0	0.09	--	0.03	--	0	--	18MC-MW11-Z1	
SVOCs	BENZO(A)ANTHRACENE	mg/kg	61/80	14/15	0.01 - 110	3.59	1.21	0.01	0.07	110	8	FS-SS06-S-O	OU2-SS20-Z1
SVOCs	BENZO(A)PYRENE	mg/kg	57/80	14/15	0.01 - 20	1.72	1.03	0.01	0.07	20	6.4	FS-SS06-S-O	OU2-SS20-Z1
SVOCs	BENZO(B)FLUORANTHENE	mg/kg	59/80	14/15	0.01 - 160	4.72	1.50	0.01	0.09	160	8.9	FS-SS06-S-O	OU2-SS20-Z1
SVOCs	BENZO(G,H,I)PERYLENE	mg/kg	45/80	13/15	0.01 - 12	0.96	0.6	0.01	0.06	12	3.7	18MC-L09-S04-Z1	OU2-SS20-Z1
SVOCs	BENZO(K)FLUORANTHENE	mg/kg	40/80	13/15	0.02 - 200	6.31	0.54	0.02	0.05	200	2.6	FS-SS06-S-O	OU2-SS20-Z1
SVOCs	BENZYL BUTYL PHTHALATE	mg/kg	4/80	2/4	0.03 - 36	9.07	0.05	0.07	0.03	36	0.06	FS-SS06-S-O	OU2-SS10-Z2
SVOCs	BIPHENYL (DIPHENYL)	mg/kg	5/80	0/4	0.02 - 0.39	0.11	--	0.02	--	0.39	--	18MC-L09-S04-Z1	
SVOCs	BIS(2-ETHYLHEXYL) PHTHALATE	mg/kg	38/80	4/4	0.03 - 50	3.81	0.11	0.03	0.04	50	0.26	FS-SS06-S-O	OU2-SS10-Z2
SVOCs	CARBAZOLE	mg/kg	31/80	3/4	0.01 - 33	1.38	0.08	0.01	0.05	33	0.11	FS-SS06-S-O	OU2-SS10-Z2
SVOCs	CHRYSENE	mg/kg	59/80	14/15	0.01 - 92	3.51	1.15	0.01	0.06	92	7.00	FS-SS06-S-O	OU2-SS20-Z1

Table 5-1 Statistical Summary of Positive Results in OU2 Creek Corridor Soil Samples; Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection		Overall Range	Average Conc		Minimum Conc		Maximum Conc		Location of Max	
			2010 Prior to	2014 OU2	All Samples	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2
SVOCs	DIBENZ(A,H)ANTHRACENE	mg/kg	40/80	7/15	0.01 - 16	0.79	0.32	0.01	0.05	16	1.10	FS-SS06-S-O	OU2-SS20-Z1
SVOCs	DIBENZOFURAN	mg/kg	21/80	3/4	0.01 - 26	1.51	0.04	0.01	0.04	26	0.05	FS-SS06-S-O	OU2-SS10-Z2
SVOCs	DIETHYL PHTHALATE	mg/kg	2/80	0/4	0.01 - 23	11.51	--	0.01	--	23	--	FS-SS05-S-O	
SVOCs	DI-N-BUTYL PHTHALATE	mg/kg	15/80	3/4	0.01 - 2	0.49	0.05	0.01	0.03	2	0.08	FS-SS01-S-O	OU2-SS10-Z2
SVOCs	DI-N-OCTYLPHTHALATE	mg/kg	16/80	0/4	0.01 - 15	1.28	--	0.01	--	15	--	FS-SS05-S-O	
SVOCs	FLUORANTHENE	mg/kg	69/80	15/15	0.01 - 240	6.26	2.59	0.01	0.07	240	19	FS-SS06-S-O	OU2-SS20-Z1
SVOCs	FLUORENE	mg/kg	28/80	7/15	0.01 - 48	2.04	0.4	0.01	0.04	48	2	FS-SS06-S-O	OU2-SS20-Z1
SVOCs	INDENO(1,2,3-C,D)PYRENE	mg/kg	52/80	13/15	0.01 - 12	0.98	0.59	0.01	0.07	12	3.5	FS-SS06-S-O	OU2-SS20-Z1
SVOCs	ISOPHORONE	mg/kg	3/80	0/4	0.03 - 0	0.07	--	0.03	--	0	--	18MC-MW13-Z1	
SVOCs	NAPHTHALENE	mg/kg	30/80	5/15	0.01 - 36	1.43	0.22	0.01	0.04	36	0.85	FS-SS06-S-O	OU2-SS20-Z1
SVOCs	PAH, HMW Total	mg/kg	69/80	15/15	0.03 - 924	26.64	10.77	0.03	0.12	924	74.2	FS-SS06-S-O	OU2-SS20-Z1
SVOCs	PAH, LMW Total	mg/kg	66/80	15/15	0.01 - 435	9.47	2.74	0.01	0.06	435	26.3	FS-SS06-S-O	OU2-SS20-Z1
SVOCs	PAH, Mixture	mg/kg	70/80	15/15	0.01 - 1359	35	14	0.01	0.18	1359	101	FS-SS06-S-O	OU2-SS20-Z1
SVOCs	PHENANTHRENE	mg/kg	66/80	15/15	0.01 - 250	5.73	1.81	0.01	0.06	250	17	FS-SS06-S-O	OU2-SS20-Z1
SVOCs	PHENOL	mg/kg	4/80	0/4	0.03 - 10	5.71	--	0.03	--	10	--	18MC-MW11-Z1	
SVOCs	PYRENE	mg/kg	68/80	15/15	0.01 - 74	3	2	0.01	0.06	74	14	FS-SS06-S-O	OU2-SS20-Z1
VOCs	ACETONE	mg/kg	0/9	2/4	0.004 - 0.006	--	0.01	--	0.004	--	0.006		OU2-SS09-Z1
VOCs	CARBON DISULFIDE	mg/kg	0/9	1/4	0.001 - 0.001	--	--	--	0.001	--	0.001		OU2-SS10-Z2
VOCs	METHYLENE CHLORIDE	mg/kg	8/9	0/4	0.007 - 0.02	0.01	--	0.007	--	0.02	--	FS-SP03-D04-S-O	
VOCs	TOLUENE	mg/kg	0/9	1/4	0.001 - 0.001	--	--	--	0.001	--	0.001		OU2-SS09-Z1
TOC	TOTAL ORGANIC CARBON	mg/kg	--	10/10	40000 - 360000	--	145600	--	40000	--	360000		OU2-SS20-Z1
Cyanide	CYANIDE	mg/kg	10/17	--	1 - 9	3.27	--	1	--	9	--	FS-SP11-D410-S-O	
pH	PH	SU	19/19	--	5.26 - 8.16	7.41	--	5.26	--	8.16	--	FS-SP06-D24-S-O	

Table 5-2 Statistical Summary of Positive Results in Surface Soil Samples; Upson Park, Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection		Overall Range	Average Conc		Minimum Conc		Maximum Conc		Location of Max	
			Corridor Soil Samples	Upson Park Public Area	All Samples	Corridor Soil Samples	Upson Park Public Area	Corridor Soil Samples	Upson Park Public Area	Corridor Soil Samples	Upson Park Public Area	Corridor Soil Samples	Upson Park Public Area
Metals	ALUMINUM	mg/kg	23/23	12/12	1730 - 15900	6773	5682	2960	1730	15900	11000	OU2-SS10-Z1	OU2-SS01-Z1
Metals	ANTIMONY	mg/kg	12/23	2/12	0.9 - 166	43	1.5	1.4	0.9	166	2	UPSON-1	18MC-SS16-Z1
Metals	ARSENIC	mg/kg	23/23	12/12	4.5 - 103	21	12	4.7	4.5	103	36	OU2-SS24-Z1	OU2-SS07-Z1
Metals	BARIUM	mg/kg	23/23	12/12	11 - 3900	651	87	11	46	3900	153	UPSON-2B	OU2-SS08-Z1
Metals	BERYLLIUM	mg/kg	21/23	7/12	0.19 - 3.3	0.63	0.59	0.19	0.41	3.30	0.91	OU2-SS24-Z1	OU2-SS07-Z1
Metals	CADMIUM	mg/kg	23/23	9/12	0.14 - 27.4	5.5	1.52	0.14	0.54	27.40	3.6	UPSON-1	OU2-SS01-Z1
Metals	CALCIUM	mg/kg	23/23	12/12	7380 - 211000	70320	56092	7380	18000	211000	117000	18MC-L02W-S05-Z1	OU2-SS04-Z1
Metals	Chromium	mg/kg	3/3	--	12 - 105	45	--	12	--	105	--	OU2-SS24-Z1	
Metals	CHROMIUM, HEXAVALENT	mg/kg	1/1	0/2	0.19 - 0.19	0.19	--	0.19	--	0.19	--	OU2-SS10-Z1	
Metals	CHROMIUM, TOTAL	mg/kg	20/20	12/12	6 - 505	62	28	6	8	505	77	UPSON-2B	OU2-SS01-Z1
Metals	COBALT	mg/kg	22/23	10/12	3.9 - 43.9	9.4	7.4	4.1	3.9	43.9	10.8	UPSON-1	OU2-SS05-Z1
Metals	COPPER	mg/kg	23/23	12/12	11 - 7410	646	74	11	18	7410	145	OU2-SS24-Z1	OU2-SS01-Z1
Metals	IRON	mg/kg	23/23	12/12	8420 - 175000	42308	19875	8420	12000	175000	55100	OU2-SS24-Z1	OU2-SS03-Z1/D
Metals	LEAD	mg/kg	23/23	12/12	19 - 3480	865	143	19	49	3480	300	18MC-L03W-S05-Z1	OU2-SS03-Z1
Metals	MAGNESIUM	mg/kg	23/23	12/12	963 - 50500	15470	21281	963	3720	43100	50500	OU2-SS09-Z1	OU2-SS06-Z1
Metals	MANGANESE	mg/kg	23/23	12/12	124 - 2630	827	472	124	176	2630	702	UPSON-2B	OU2-SS03-Z1/D
Metals	MERCURY	mg/kg	23/23	12/12	0.04 - 11.6	1.9	0.2	0.04	0.05	11.6	0.5	OU2-SS24-Z1	OU2-SS02-Z1
Metals	NICKEL	mg/kg	23/23	12/12	11 - 150	36	25	11	12	150	58	UPSON-2	OU2-SS03-Z1/D
Metals	POTASSIUM	mg/kg	23/23	12/12	280 - 2610	1217	1177	280	667	2610	1710	18MC-L05W-S04-Z1	OU2-SS01-Z1
Metals	SELENIUM	mg/kg	5/23	6/12	0.9 - 7.7	3.9	1.6	0.9	1.1	7.7	1.9	UPSON-2	OU2-SS08-Z1
Metals	SILVER	mg/kg	14/23	1/12	0.18 - 81	19	0.23	0.18	0.23	81	0.23	UPSON-1	18MC-SS16-Z1
Metals	SODIUM	mg/kg	20/23	3/12	79 - 1010	243	142	79	127	1010	157	18MC-SS14-Z1	18MC-SS16-Z1
Metals	VANADIUM	mg/kg	23/23	12/12	7 - 62	15	19	7	8	40	62	OU2-SS24-Z1	OU2-SS07-Z1
Metals	ZINC	mg/kg	23/23	12/12	36 - 7870	1527	328	36	99	7870	875	UPSON-2B	OU2-SS01-Z1
PCB	PCB, Total	mg/kg	20/28	2/12	0.01 - 80	5.43	0.01	0.02	0.01	80	0.01	UPSON-2B	18MC-SS17-Z1/D
PCB	PCB-1248 (AROCLOR 1248)	mg/kg	8/28	2/12	0.01 - 0.3	0.11	0.01	0.01	0.01	0.30	0.01	18MC-L02W-S04-Z1	18MC-SS17-Z1/D
PCB	PCB-1254 (AROCLOR 1254)	mg/kg	15/28	0/12	0.02 - 80	6.96	--	0.02	--	80	--	UPSON-2B	
PCB	PCB-1260 (AROCLOR 1260)	mg/kg	10/28	0/12	0.06 - 1.6	0.29	--	0.06	--	1.60	--	UPSON-1	
PCB	PCB-1268 (AROCLOR 1268)	mg/kg	8/25	0/12	0.027 - 0.11	0.05	--	0.027	--	0.11	--	18MC-L02W-S05-Z2	
Pesticides	ALDRIN	mg/kg	2/12	0/12	0.003 - 0.005	--	--	0.003	--	0.005	--	18MC-L02W-S04-Z1	
Pesticides	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	mg/kg	3/12	0/12	0.004 - 0.008	0.010	--	0.004	--	0.008	--	18MC-L03W-S04-Z1	
Pesticides	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	mg/kg	1/12	3/12	0.001 - 0.002	--	--	0.001	0.001	0.001	0.002	OU2-SS10-Z1	OU2-SS03-Z1/D
Pesticides	BETA ENDOSULFAN	mg/kg	3/12	0/12	0.002 - 0.011	0.010	--	0.002	--	0.011	--	18MC-L04W-S04-Z1	
Pesticides	DDT, Total	mg/kg	9/12	10/12	0.007 - 0.097	0.030	0.030	0.007	0.011	0.069	0.097	18MC-L03W-S04-Z1	OU2-SS07-Z1
Pesticides	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	mg/kg	1/12	1/12	0.0005 - 0.005	--	0.010	0.0005	0.005	0.000	0.005	18MC-L05W-S04-Z1	18MC-SS16-Z1
Pesticides	DIELDRIN	mg/kg	2/12	1/12	0.01 - 0.02	0.020	0.01	0.01	0.01	0.02	0.01	OU2-SS10-Z1	18MC-SS16-Z1
Pesticides	ENDOSULFAN SULFATE	mg/kg	1/12	1/12	0.001 - 0.005	0.010	--	0.005	0.001	0.005	0.001	18MC-SS15-Z1	OU2-SS08-Z1

Table 5-2 Statistical Summary of Positive Results in Surface Soil Samples; Upson Park, Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection		Overall Range	Average Conc		Minimum Conc		Maximum Conc		Location of Max	
			Corridor Soil Samples	Upson Park Public Area	All Samples	Corridor Soil Samples	Upson Park Public Area	Corridor Soil Samples	Upson Park Public Area	Corridor Soil Samples	Upson Park Public Area	Corridor Soil Samples	Upson Park Public Area
Pesticides	ENDRIN	mg/kg	2/12	0/12	0.004 - 0.009	0.010	--	0.004	--	0.009	--	18MC-L02W-S04-Z1	
Pesticides	ENDRIN KETONE	mg/kg	3/12	1/12	0.003 - 0.005	--	--	0.003	0.005	0.004	0.005	18MC-SS15-Z1	OU2-SS05-Z1
Pesticides	GAMMA BHC (LINDANE)	mg/kg	2/12	0/12	0.001 - 0.003	--	--	0.001	--	0.003	--	18MC-SS15-Z1	
Pesticides	HEPTACHLOR	mg/kg	1/12	1/12	0.002 - 0.004	--	--	0.002	0.004	0.002	0.004	OU2-SS10-Z1	OU2-SS08-Z1
Pesticides	HEPTACHLOR EPOXIDE	mg/kg	1/12	2/11	0.001 - 0.007	0.010	--	0.007	0.001	0.007	0.002	OU2-SS24-Z1	OU2-SS03-Z1
Pesticides	METHOXYCHLOR	mg/kg	2/12	0/12	0.019 - 0.14	0.08	--	0.019	--	0.140	--	18MC-L04W-S04-Z1	
Pesticides	P,P'-DDD	mg/kg	3/11	4/8	0.003 - 0.02	0.010	0.010	0.003	0.004	0.014	0.02	18MC-L03W-S04-Z1	OU2-SS03-Z1/D
Pesticides	P,P'-DDE	mg/kg	8/12	7/12	0.003 - 0.034	0.010	0.010	0.003	0.006	0.034	0.016	18MC-L04W-S04-Z1	18MC-SS16-Z1
Pesticides	P,P'-DDT	mg/kg	7/12	10/12	0.005 - 0.046	0.020	0.020	0.007	0.005	0.046	0.026	OU2-SS24-Z1	OU2-SS01-Z1
Pesticides	Trans-Chlordane	mg/kg	1/12	1/12	0.006 - 0.007	0.010	0.010	0.007	0.006	0.007	0.006	18MC-L02W-S04-Z1	OU2-SS05-Z1
SVOCs	2-METHYLNAPHTHALENE	mg/kg	4/15	7/12	0.01 - 0.39	0.05	0.16	0.01	0.04	0.13	0.39	18MC-L04W-S04-Z1	OU2-SS03-Z1/D
SVOCs	ACENAPHTHENE	mg/kg	2/15	3/12	0.01 - 0.23	0.08	0.11	0.01	0.04	0.16	0.23	18MC-L04W-S04-Z1	18MC-SS17-Z1
SVOCs	ACENAPHTHYLENE	mg/kg	7/15	9/12	0.01 - 0.4	0.14	0.1	0.01	0.02	0.4	0.22	18MC-L04W-S04-Z1	OU2-SS03-Z1/D
SVOCs	ACETOPHENONE	mg/kg	0/12	1/12	0.17 - 0.17	--	0.17	--	0.17	--	0.17		OU2-SS02-Z1
SVOCs	ANTHRACENE	mg/kg	10/15	11/12	0.01 - 0.9	0.15	0.17	0.01	0.02	0.9	0.44	18MC-L04W-S04-Z1	OU2-SS03-Z1/D
SVOCs	BENZO(A)ANTHRACENE	mg/kg	12/15	12/12	0.06 - 4.4	0.67	0.6	0.06	0.11	4.4	2	18MC-L04W-S04-Z1	OU2-SS03-Z1/D
SVOCs	BENZO(A)PYRENE	mg/kg	13/15	12/12	0.05 - 2.3	0.49	0.57	0.05	0.12	2.3	1.7	18MC-L04W-S04-Z1	OU2-SS03-Z1/D
SVOCs	BENZO(B)FLUORANTHENE	mg/kg	13/15	12/12	0.07 - 3.5	0.74	0.91	0.07	0.21	3.5	2.9	18MC-L04W-S04-Z1	OU2-SS03-Z1/D
SVOCs	BENZO(G,H,I)PERYLENE	mg/kg	13/15	12/12	0.04 - 1.4	0.30	0.25	0.04	0.04	1.4	0.65	18MC-L04W-S04-Z1	OU2-SS03-Z1/D
SVOCs	BENZO(K)FLUORANTHENE	mg/kg	9/15	11/12	0.02 - 1	0.26	0.3	0.02	0.07	1	0.84	18MC-L04W-S04-Z1	OU2-SS03-Z1/D
SVOCs	BENZYL BUTYL PHTHALATE	mg/kg	1/12	0/12	0.03 - 0.03	0.03	--	0.03	--	0.03	--	OU2-SS10-Z1	
SVOCs	BIS(2-ETHYLHEXYL) PHTHALATE	mg/kg	4/12	8/12	0.02 - 0.85	0.37	0.09	0.04	0.02	0.85	0.13	UPSON-2	OU2-SS03-Z1
SVOCs	CARBAZOLE	mg/kg	5/12	9/12	0.01 - 0.3	0.11	0.08	0.01	0.03	0.3	0.2	18MC-L04W-S04-Z1	18MC-SS17-Z1
SVOCs	CHRYSENE	mg/kg	13/15	12/12	0.05 - 3.6	0.59	0.69	0.05	0.14	3.6	2.4	18MC-L04W-S04-Z1	OU2-SS03-Z1/D
SVOCs	DIBENZ(A,H)ANTHRACENE	mg/kg	8/15	8/12	0.01 - 0.43	0.1	0.1	0.01	0.03	0.43	0.26	18MC-L04W-S04-Z1	OU2-SS03-Z1/D
SVOCs	DIBENZOFURAN	mg/kg	2/12	6/12	0.03 - 0.15	0.09	0.09	0.04	0.03	0.14	0.15	18MC-L04W-S04-Z1	OU2-SS03-Z1/D
SVOCs	DI-N-BUTYL PHTHALATE	mg/kg	3/12	2/12	0.04 - 0.78	0.45	0.05	0.04	0.04	0.78	0.05	UPSON-2	OU2-SS01-Z1
SVOCs	DI-N-OCTYLPHTHALATE	mg/kg	2/12	0/12	0.01 - 3	1.51	--	0.01	--	3	--	UPSON-2	
SVOCs	FLUORANTHENE	mg/kg	13/15	12/12	0.12 - 9.5	1.29	1.16	0.12	0.2	9.5	3.9	18MC-L04W-S04-Z1	OU2-SS03-Z1/D
SVOCs	FLUORENE	mg/kg	5/15	3/12	0.02 - 0.24	0.08	0.11	0.02	0.04	0.24	0.18	18MC-L04W-S04-Z1	18MC-SS17-Z1
SVOCs	INDENO(1,2,3-C,D)PYRENE	mg/kg	13/15	12/12	0.03 - 1.3	0.28	0.3	0.03	0.06	1.3	0.9	18MC-L04W-S04-Z1	OU2-SS03-Z1/D
SVOCs	NAPHTHALENE	mg/kg	4/15	8/12	0.01 - 0.28	0.08	0.1	0.01	0.04	0.28	0.23	18MC-L04W-S04-Z1	OU2-SS03-Z1/D
SVOCs	PAH, HMW Total	mg/kg	13/15	12/12	0.52 - 35	5.58	5.72	0.52	1.13	35	18.6	18MC-L04W-S04-Z1	OU2-SS03-Z1/D
SVOCs	PAH, LMW Total	mg/kg	12/15	12/12	0.06 - 7.01	1	1.1	0.06	0.12	7.01	3.56	18MC-L04W-S04-Z1	OU2-SS03-Z1/D
SVOCs	PAH, Mixture	mg/kg	10/12	12/12	0.59 - 42	7.52	6.82	0.59	1.25	42	22	18MC-L04W-S04-Z1	OU2-SS03-Z1/D
SVOCs	PHENANTHRENE	mg/kg	12/15	12/12	0.04 - 4.9	0.70	0.65	0.04	0.08	4.9	2.1	18MC-L04W-S04-Z1	OU2-SS03-Z1/D
SVOCs	PYRENE	mg/kg	13/15	12/12	0.07 - 7.6	1.03	0.9	0.07	0.18	7.6	3	18MC-L04W-S04-Z1	OU2-SS03-Z1/D

Table 5-2 Statistical Summary of Positive Results in Surface Soil Samples; Upson Park, Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection		Overall Range	Average Conc		Minimum Conc		Maximum Conc		Location of Max	
			Corridor Soil Samples	Upson Park Public Area	All Samples	Corridor Soil Samples	Upson Park Public Area	Corridor Soil Samples	Upson Park Public Area	Corridor Soil Samples	Upson Park Public Area	Corridor Soil Samples	Upson Park Public Area
VOCs	ACETONE	mg/kg	2/2	1/9	0.0042 - 0.0058	0.010	--	0.0042	0.0049	0.0058	0.0049	OU2-SS09-Z1	OU2-SS05-Z1
VOCs	CYCLOHEXANE	mg/kg	0/2	2/9	0.0008 - 0.0013	--	--	--	0.0008	--	0.0013		OU2-SS07-Z1
VOCs	m,p-Xylene	mg/kg	0/2	1/9	0.0004 - 0.0004	--	--	--	0.0004	--	0.0004		OU2-SS07-Z1
VOCs	METHYLCYCLOHEXANE	mg/kg	0/2	2/9	0.0015 - 0.0025	--	--	--	0.0015	--	0.0025		OU2-SS07-Z1
VOCs	O-XYLENE (1,2-DIMETHYLBENZENE)	mg/kg	0/2	1/9	0.0003 - 0.0003	--	--	--	0.0003	--	0.0003		OU2-SS07-Z1
VOCs	Tetrachloroethylene (PCE)	mg/kg	0/2	2/9	0.0005 - 0.0008	--	--	--	0.0005	--	0.0008		OU2-SS02-Z1
VOCs	TOLUENE	mg/kg	1/2	2/9	0.0003 - 0.0012	--	--	0.0012	0.0003	0.0012	0.0006	OU2-SS09-Z1	OU2-SS07-Z1
TOC	TOTAL ORGANIC CARBON	mg/kg	3/3	--	81000 - 140000	107000	--	81000	--	140000	--	OU2-SS24-Z1	

Table 5-3 Statistical Summary of Positive Results in Subsurface Soil Samples; Upson Park, Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection		Overall Range	Average Conc		Minimum Conc		Maximum Conc		Location of Max	
			Corridor Soil Samples	Upson Park Public Area	All Samples	Corridor Soil Samples	Upson Park Public Area	Corridor Soil Samples	Upson Park Public Area	Corridor Soil Samples	Upson Park Public Area	Corridor Soil Samples	Upson Park Public Area
Metals	ALUMINUM	mg/kg	30/30	8/8	1160 - 9790	5151	5608	1160	1560	9790	8940	18MC-L01W-S05-Z3	OU2-SS03-Z2
Metals	ANTIMONY	mg/kg	13/30	1/8	0.7 - 795	73	14	0.7	14.3	795	14	18MC-SB14-Z2	OU2-SS08-Z2
Metals	ARSENIC	mg/kg	30/30	8/8	3 - 45	14	14	3	5.7	45	23	18MC-MW14-Z1	OU2-SS07-Z2
Metals	BARIUM	mg/kg	30/30	8/8	8.7 - 3260	453	88	8.7	54	3260	134	18MC-SB14-Z1	OU2-SS03-Z2
Metals	BERYLLIUM	mg/kg	29/30	7/8	0.2 - 1.1	0.4	0.6	0.2	0.5	1.1	0.93	18MC-SB14-Z1	OU2-SS07-Z2
Metals	CADMIUM	mg/kg	28/30	7/8	0.1 - 23	3.0	0.9	0.1	0.4	23	2	UPSON-1B	OU2-SS01-Z2
Metals	CALCIUM	mg/kg	30/30	8/8	2780 - 209000	73826	54600	3180	2780	209000	113000	18MC-L03W-S04-Z2	OU2-SS05-Z2
Metals	CHROMIUM, TOTAL	mg/kg	30/30	8/8	4.6 - 918	57	19	4.6	7.3	918	38	18MC-L02W-S04-Z3	OU2-SS01-Z2
Metals	COBALT	mg/kg	30/30	7/8	1.3 - 59	9.4	8.4	1.3	4.7	59	17	18MC-MW14-Z1	OU2-SS07-Z2
Metals	COPPER	mg/kg	30/30	8/8	7 - 20100	999	745	7	26	20100	5510	18MC-SB14-Z2	OU2-SS08-Z2
Metals	IRON	mg/kg	30/30	8/8	6450 - 246000	41844	18200	6450	12300	246000	29300	18MC-L02W-S04-Z3	OU2-SS07-Z2
Metals	LEAD	mg/kg	30/30	8/8	8 - 77300	2902	203	8	23	77300	424	18MC-SB14-Z2	OU2-SS04-Z2
Metals	MAGNESIUM	mg/kg	30/30	8/8	470 - 63100	18930	12692	470	539	63100	29400	18MC-L04W-S04-Z2	OU2-SS06-Z2
Metals	MANGANESE	mg/kg	30/30	8/8	44 - 3350	908	477	57	44	3350	696	18MC-L04W-S04-Z2	OU2-SS01-Z2
Metals	MERCURY	mg/kg	28/30	8/8	0.006 - 22	1.2	0.2	0.006	0.049	22	0.42	UPSON-1B	OU2-SS04-Z2
Metals	NICKEL	mg/kg	30/30	8/8	5 - 1090	62	23	5	12	1090	42	18MC-SB14-Z2	OU2-SS07-Z2
Metals	POTASSIUM	mg/kg	29/30	7/8	265 - 2810	1249	1242	265	765	2810	1840	18MC-L04W-S05-Z2	OU2-SS05-Z2
Metals	SELENIUM	mg/kg	10/30	7/8	0.6 - 8.2	3.2	1.3	0.9	0.6	8.2	1.8	18MC-SB14-Z2	OU2-SS01-Z2
Metals	SILVER	mg/kg	15/30	0/8	0.19 - 80	15	--	0.19	--	80	--	18MC-L02W-S04-Z3	
Metals	SODIUM	mg/kg	26/30	0/8	98 - 1430	284	--	98	--	1430	--	18MC-MW14-Z1	
Metals	THALLIUM	mg/kg	2/30	0/8	1 - 1.6	1.3	--	1.0	--	1.6	--	18MC-L02W-S04-Z3	
Metals	VANADIUM	mg/kg	30/30	8/8	4 - 59	13	20	4	11	37	59	18MC-SB14-Z1	OU2-SS07-Z2
Metals	ZINC	mg/kg	30/30	8/8	13 - 5930	828	285	13	45	5930	541	18MC-SB14-Z2	OU2-SS07-Z2
PCB	PCB, Total	mg/kg	23/38	1/8	0.01 - 390	27.85	0.26	0.01	0.26	390	0.26	OU2-SS09-Z2	OU2-SS07-Z2
PCB	PCB-1016 (AROCLOR 1016)	mg/kg	0/38	1/8	0.26 - 0.26	--	0.26	--	0.26	--	0.26		OU2-SS07-Z2
PCB	PCB-1248 (AROCLOR 1248)	mg/kg	5/38	0/8	0.01 - 250	51.74	--	0.01	--	250	--	OU2-SS09-Z2	
PCB	PCB-1254 (AROCLOR 1254)	mg/kg	14/38	0/8	0.01 - 140	11	--	0.01	--	140	--	OU2-SS09-Z2	
PCB	PCB-1260 (AROCLOR 1260)	mg/kg	13/38	0/8	0.01 - 180	14.83	--	0.01	--	180	--	OU2-SS12-Z3	
PCB	PCB-1268 (AROCLOR 1268)	mg/kg	10/37	0/8	0.009 - 26	3.48	--	0.009	--	26	--	OU2-SS14-Z2	
Pesticides	ALPHA ENDOSULFAN	mg/kg	0/1	1/8	0.007 - 0.007	--	0.01	--	0.007	--	0.007		OU2-SS04-Z2
Pesticides	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	mg/kg	0/2	4/8	0.00018 - 0.001	--	--	--	0.00018	--	0.001		OU2-SS03-Z2
Pesticides	DDT, Total	mg/kg	2/2	7/8	0.007 - 6.7	3.37	0.04	0.037	0.007	6.7	0.139	OU2-SS09-Z2	OU2-SS07-Z2
Pesticides	DIELDRIN	mg/kg	1/2	0/8	0.026 - 0.026	0.03	--	0.026	--	0.026	--	OU2-SS10-Z2	
Pesticides	ENDOSULFAN SULFATE	mg/kg	0/2	3/8	0.004 - 0.011	--	0.01	--	0.004	--	0.011		OU2-SS02-Z2
Pesticides	ENDRIN	mg/kg	1/2	0/6	0.2 - 0.2	0.2	--	0.2	--	0.2	--	OU2-SS09-Z2	
Pesticides	ENDRIN ALDEHYDE	mg/kg	0/1	1/7	0.014 - 0.014	--	0.01	--	0.014	--	0.014		OU2-SS02-Z2

Table 5-3 Statistical Summary of Positive Results in Subsurface Soil Samples; Upson Park, Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection		Overall Range	Average Conc		Minimum Conc		Maximum Conc		Location of Max	
			Corridor Soil Samples	Upson Park Public Area	All Samples	Corridor Soil Samples	Upson Park Public Area	Corridor Soil Samples	Upson Park Public Area	Corridor Soil Samples	Upson Park Public Area	Corridor Soil Samples	Upson Park Public Area
Pesticides	ENDRIN KETONE	mg/kg	1/1	2/8	0.009 - 0.022	0.01	0.02	0.009	0.011	0.009	0.022	OU2-SS10-Z2	OU2-SS04-Z2
Pesticides	HEPTACHLOR	mg/kg	2/2	0/8	0.002 - 0.85	0.43	--	0.002	--	0.85	--	OU2-SS09-Z2	
Pesticides	HEPTACHLOR EPOXIDE	mg/kg	0/2	4/8	0.001 - 0.006	--	--	--	0.001	--	0.006		OU2-SS04-Z2
Pesticides	P,P'-DDD	mg/kg	0/1	2/4	0.015 - 0.024	--	0.02	--	0.015	--	0.024		OU2-SS03-Z2
Pesticides	P,P'-DDE	mg/kg	2/2	6/8	0.005 - 2.9	1.46	0.02	0.015	0.005	2.9	0.058	OU2-SS09-Z2	OU2-SS07-Z2
Pesticides	P,P'-DDT	mg/kg	2/2	6/7	0.004 - 3.8	1.91	0.02	0.022	0.004	3.8	0.066	OU2-SS09-Z2	OU2-SS07-Z2
Pesticides	Trans-Chlordane	mg/kg	1/2	4/8	0.004 - 0.012	--	0.01	0.004	0.004	0.004	0.012	OU2-SS10-Z2	OU2-SS02-Z2
SVOCs	2-METHYLNAPHTHALENE	mg/kg	2/7	7/8	0.037 - 0.86	0.08	0.31	0.079	0.037	0.084	0.86	OU2-SS10-Z2	OU2-SS02-Z2
SVOCs	ACENAPHTHENE	mg/kg	1/7	4/8	0.046 - 1.2	0.05	0.49	0.048	0.046	0.048	1.2	OU2-SS10-Z2	OU2-SS02-Z2
SVOCs	ACENAPHTHYLENE	mg/kg	2/7	7/8	0.04 - 1.7	0.14	0.52	0.12	0.04	0.15	1.7	OU2-SS09-Z2	OU2-SS02-Z2
SVOCs	ACETOPHENONE	mg/kg	0/7	1/8	0.033 - 0.033	--	0.03	--	0.033	--	0.033		OU2-SS08-Z2
SVOCs	ANTHRACENE	mg/kg	2/7	7/8	0.06 - 7.1	0.14	1.34	0.12	0.06	0.16	7.1	OU2-SS10-Z2	OU2-SS02-Z2
SVOCs	BENZALDEHYDE	mg/kg	0/7	2/8	0.04 - 0.42	--	0.23	--	0.04	--	0.42		OU2-SS08-Z2
SVOCs	BENZO(A)ANTHRACENE	mg/kg	3/7	8/8	0.02 - 17	0.47	3.49	0.02	0.05	1	17	OU2-SS10-Z2	OU2-SS02-Z2
SVOCs	BENZO(A)PYRENE	mg/kg	2/7	8/8	0.06 - 15	0.85	3.31	0.49	0.06	1.2	15	OU2-SS10-Z2	OU2-SS02-Z2
SVOCs	BENZO(B)FLUORANTHENE	mg/kg	3/7	8/8	0.02 - 18	0.87	4.34	0.02	0.11	1.8	18	OU2-SS10-Z2	OU2-SS02-Z2
SVOCs	BENZO(G,H,I)PERYLENE	mg/kg	2/7	8/8	0.02 - 5.3	0.31	1.21	0.14	0.02	0.47	5.3	OU2-SS10-Z2	OU2-SS02-Z2
SVOCs	BENZO(K)FLUORANTHENE	mg/kg	2/7	8/8	0.03 - 7.3	0.45	1.64	0.24	0.03	0.66	7.3	OU2-SS10-Z2	OU2-SS02-Z2
SVOCs	BENZYL BUTYL PHTHALATE	mg/kg	1/7	0/8	0.06 - 0.06	0.06	--	0.06	--	0.06	--	OU2-SS10-Z2	
SVOCs	BIPHENYL (DIPHENYL)	mg/kg	0/7	2/8	0.05 - 0.17	--	0.11	--	0.05	--	0.17		OU2-SS02-Z2
SVOCs	BIS(2-ETHYLHEXYL) PHTHALATE	mg/kg	5/7	6/8	0.02 - 5.1	1.26	0.09	0.06	0.02	5.1	0.21	UPSON-1B	OU2-SS02-Z2
SVOCs	CARBAZOLE	mg/kg	2/7	7/8	0.03 - 2	0.08	0.52	0.05	0.03	0.11	2	OU2-SS10-Z2	OU2-SS02-Z2
SVOCs	CHRYSENE	mg/kg	3/7	8/8	0.01 - 16	0.57	3.60	0.01	0.08	1.2	16	OU2-SS10-Z2	OU2-SS02-Z2
SVOCs	DIBENZ(A,H)ANTHRACENE	mg/kg	2/7	7/8	0.03 - 1.7	0.1	0.44	0.05	0.03	0.14	1.7	OU2-SS10-Z2	OU2-SS02-Z2
SVOCs	DIBENZOFURAN	mg/kg	2/7	7/8	0.02 - 1.5	0.05	0.35	0.04	0.02	0.05	1.5	OU2-SS10-Z2	OU2-SS02-Z2
SVOCs	DI-N-BUTYL PHTHALATE	mg/kg	2/7	0/8	0.03 - 0.08	0.06	--	0.03	--	0.08	--	OU2-SS10-Z2	
SVOCs	FLUORANTHENE	mg/kg	5/7	8/8	0.02 - 35	1.17	7.14	0.02	0.08	3.20	35	UPSON-1B	OU2-SS02-Z2
SVOCs	FLUORENE	mg/kg	2/7	5/8	0.02 - 2.4	0.05	0.63	0.04	0.02	0.06	2.4	OU2-SS10-Z2	OU2-SS02-Z2
SVOCs	INDENO(1,2,3-C,D)PYRENE	mg/kg	2/7	8/8	0.03 - 7.2	0.41	1.6	0.2	0.03	0.61	7.2	OU2-SS10-Z2	OU2-SS02-Z2
SVOCs	NAPHTHALENE	mg/kg	2/7	7/8	0.02 - 0.99	0.05	0.27	0.05	0.02	0.05	0.99	OU2-SS09-Z2	OU2-SS02-Z2
SVOCs	PAH, HMW Total	mg/kg	5/7	8/8	0.08 - 151	4.47	32.67	0.08	0.54	10.7	151	OU2-SS10-Z2	OU2-SS02-Z2
SVOCs	PAH, LMW Total	mg/kg	3/7	8/8	0.01 - 38.25	0.71	7.3	0.01	0.04	1.25	38.25	OU2-SS10-Z2	OU2-SS02-Z2
SVOCs	PAH, Mixture	mg/kg	5/7	8/8	0.09 - 189	4.89	39.97	0.09	0.57	11.93	189	OU2-SS10-Z2	OU2-SS02-Z2
SVOCs	PHENANTHRENE	mg/kg	3/7	8/8	0.01 - 24	0.39	4.51	0.01	0.04	0.73	24	OU2-SS10-Z2	OU2-SS02-Z2
SVOCs	PYRENE	mg/kg	5/7	8/8	0.02 - 28	1.31	5.97	0.02	0.08	4.2	28	UPSON-1B	OU2-SS02-Z2
VOCs	ACETONE	mg/kg	0/2	1/8	0.017 - 0.017	--	0.020	--	0.017	--	0.017		OU2-SS08-Z2

Table 5-3 Statistical Summary of Positive Results in Subsurface Soil Samples; Upson Park, Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection		Overall Range	Average Conc		Minimum Conc		Maximum Conc		Location of Max	
			Corridor Soil Samples	Upson Park Public Area	All Samples	Corridor Soil Samples	Upson Park Public Area	Corridor Soil Samples	Upson Park Public Area	Corridor Soil Samples	Upson Park Public Area	Corridor Soil Samples	Upson Park Public Area
VOCs	CARBON DISULFIDE	mg/kg	1/2	1/8	0.001 - 0.002	--	--	0.001	0.002	0.001	0.002	OU2-SS10-Z2	OU2-SS08-Z2
VOCs	CYCLOHEXANE	mg/kg	0/2	2/8	0.001 - 0.004	--	--	--	0.001	--	0.004		OU2-SS01-Z2
VOCs	m,p-Xylene	mg/kg	0/2	1/7	0.001 - 0.001	--	--	--	0.001	--	0.001		OU2-SS01-Z2
VOCs	METHYLCYCLOHEXANE	mg/kg	0/2	2/8	0.003 - 0.006	--	--	--	0.003	--	0.006		OU2-SS01-Z2
VOCs	O-XYLENE (1,2-DIMETHYLBENZENE)	mg/kg	0/2	1/7	0.001 - 0.001	--	--	--	0.001	--	0.001		OU2-SS01-Z2
VOCs	Tetrachloroethylene (PCE)	mg/kg	0/2	3/7	0.0003 - 0.001	--	--	--	0.0003	--	0.001		OU2-SS02-Z2
VOCs	TOLUENE	mg/kg	0/2	2/8	0.0003 - 0.001	--	--	--	0.0003	--	0.001		OU2-SS01-Z2
VOCs	TRICHLOROETHYLENE (TCE)	mg/kg	0/2	1/6	0.0003 - 0.0003	--	--	--	0.0003	--	0.0003		OU2-SS02-Z2

Table 5-4 Statistical Summary of Positive Results in Surface Soil Samples; Former Flintkote Plant Property, Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection		Overall Range	Average Conc		Minimum Conc		Maximum Conc		Location of Max	
			2010 Prior to	2014 OU2	All Samples	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2
Metals	ALUMINUM	mg/kg	23/23	3/3	1480 - 14600	6760	6133	1480	4800	14600	7720	18MC-L18-S05-Z1	OU2-SS15-Z1
Metals	ANTIMONY	mg/kg	16/23	3/3	1.2 - 149	26	38	1.2	1.4	149	110	FS-SS02-S-O	OU2-SS17-Z1
Metals	ARSENIC	mg/kg	23/23	3/3	1.8 - 60	18	19	1.8	13	60	24	FS-SS03-S-O	OU2-SS15-Z1
Metals	BARIUM	mg/kg	22/23	3/3	23 - 2440	417	468	23	80	2440	1210	FS-SS05-S-O	OU2-SS17-Z1
Metals	BERYLLIUM	mg/kg	23/23	3/3	0.18 - 1.2	0.51	0.63	0.18	0.35	1.2	1.1	FS-SS09-S-O	OU2-SS15-Z1
Metals	CADMIUM	mg/kg	19/23	3/3	0.05 - 37.9	5.42	12.56	0.05	0.57	37.9	35.4	FS-SS02-S-O	OU2-SS17-Z1
Metals	CALCIUM	mg/kg	23/23	3/3	5930 - 82400	28119	36200	5930	18900	82400	70100	FS-SS07-S-O	OU2-SS16-Z1
Metals	CHROMIUM, TOTAL	mg/kg	23/23	--	4.9 - 264	53.5	--	4.9	--	264	--	18MC-L18-S06-Z1	
Metals	COBALT	mg/kg	23/23	3/3	3.8 - 35	11	13	3.8	7.1	35	21	FS-SS02-S-O	OU2-SS17-Z1
Metals	COPPER	mg/kg	23/23	3/3	13.5 - 51000	4193	2818	13.5	59.0	51000	8250	FS-SS02-S-O	OU2-SS17-Z1
Metals	IRON	mg/kg	23/23	3/3	7560 - 231000	50340	71967	7560	21300	231000	172000	FS-SS02-S-O	OU2-SS17-Z1
Metals	LEAD	mg/kg	23/23	3/3	3 - 8600	1512	923	3	123	8600	2480	FS-SP12-D02-S-O	OU2-SS17-Z1
Metals	MAGNESIUM	mg/kg	23/23	3/3	1600 - 33100	8488	13087	1600	3380	33100	31400	FS-SS07-S-O	OU2-SS16-Z1
Metals	MANGANESE	mg/kg	23/23	3/3	315 - 1870	856	946	315	545	1870	1560	FS-SS03-S-O	OU2-SS17-Z1
Metals	MERCURY	mg/kg	22/23	3/3	0.1 - 11	2.2	2.8	0.1	0.3	11	7.7	FS-SS06-S-O	OU2-SS17-Z1
Metals	NICKEL	mg/kg	23/23	3/3	6 - 909	111	144	6	28	909	373	18MC-L18-S06-Z1	OU2-SS17-Z1
Metals	POTASSIUM	mg/kg	23/23	3/3	359 - 1980	1126	864	359	668	1980	1080	18MC-L17-S05-Z1	OU2-SS15-Z1
Metals	SELENIUM	mg/kg	14/23	0/3	0.7 - 11	3.8	--	0.7	--	11	--	FS-SS02-S-O	
Metals	SILVER	mg/kg	18/23	3/3	0.11 - 19	3.4	3.5	0.11	0.46	19	10	FS-SS01-S-O	OU2-SS17-Z1
Metals	SODIUM	mg/kg	21/23	3/3	56 - 836	256	236	56	129	836	429	FS-SS02-S-O	OU2-SS17-Z1
Metals	THALLIUM	mg/kg	13/23	2/3	0.14 - 32.7	10.1	0.22	0.88	0.14	32.7	0.3	FS-SS02-S-O	OU2-SS15-Z1
Metals	VANADIUM	mg/kg	23/23	3/3	9 - 103	22	21	9	19	103	22	FS-SS01-S-O	OU2-SS15-Z1
Metals	ZINC	mg/kg	23/23	3/3	17 - 21900	3114	3179	17	126	21900	9030	FS-SS02-S-O	OU2-SS17-Z1
PCB	PCB, Total	mg/kg	7/23	2/3	0.03 - 4.7	1.43	2.17	0.1	0.03	4.7	4.3	FS-SS05-S-O	OU2-SS17-Z1
PCB	PCB-1248 (AROCLOR 1248)	mg/kg	1/23	0/3	0.12 - 0.12	0.12	--	0.12	--	0.12	--	18MC-L13-S04-Z1	
PCB	PCB-1254 (AROCLOR 1254)	mg/kg	5/23	0/3	0.13 - 4.7	1.88	--	0.13	--	4.7	--	FS-SS05-S-O	
PCB	PCB-1260 (AROCLOR 1260)	mg/kg	1/23	1/3	0.03 - 0.24	0.24	0.03	0.24	0.03	0.24	0.03	18MC-L18-S07-Z1	OU2-SS16-Z1
PCB	PCB-1262 (AROCLOR 1262)	mg/kg	2/11	0/3	0.1 - 0.13	0.120	--	0.1	--	0.13	--	18MC-L16W-S04-Z1	
PCB	PCB-1268 (AROCLOR 1268)	mg/kg	0/11	1/3	4.3 - 4.3	--	4.3	--	4.3	--	4.3		OU2-SS17-Z1
Pesticides	ALDRIN	mg/kg	1/16	0/3	0.002 - 0.002	--	--	0.002	--	0.002	--	18MC-L16W-S04-Z1	
Pesticides	ALPHA ENDOSULFAN	mg/kg	4/16	0/3	0.001 - 0.006	--	--	0.001	--	0.006	--	FS-SS09-S-O	
Pesticides	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	mg/kg	2/16	0/3	0.016 - 0.016	0.020	--	0.016	--	0.016	--	FS-SS08-S-O	
Pesticides	BETA ENDOSULFAN	mg/kg	1/16	0/3	0.002 - 0.002	--	--	0.002	--	0.002	--	18MC-L16W-S04-Z1	
Pesticides	cis-Chlordane	mg/kg	3/16	0/3	0.001 - 0.003	--	--	0.001	--	0.003	--	18MC-L18-S07-Z1	
Pesticides	DDT, Total	mg/kg	12/16	1/3	0.003 - 0.059	0.030	--	0.003	0.004	0.059	0.004	FS-SS04-S-O	OU2-SS15-Z1
Pesticides	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	mg/kg	3/16	0/3	0.001 - 0.002	--	--	0.001	--	0.002	--	18MC-L17-S05-Z1	
Pesticides	DIELDRIN	mg/kg	4/16	0/3	0.011 - 0.45	0.120	--	0.011	--	0.450	--	18MC-L16W-S04-Z1	
Pesticides	ENDOSULFAN SULFATE	mg/kg	2/16	0/3	0.019 - 0.025	0.020	--	0.019	--	0.025	--	FS-SS09-S-O	

Table 5-4 Statistical Summary of Positive Results in Surface Soil Samples; Former Flintkote Plant Property, Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection		Overall Range	Average Conc		Minimum Conc		Maximum Conc		Location of Max	
			2010 Prior to	2014 OU2	All Samples	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2
Pesticides	ENDRIN	mg/kg	3/16	0/3	0.005 - 0.02	0.010	--	0.005	--	0.020	--	FS-SS06-S-O	
Pesticides	ENDRIN ALDEHYDE	mg/kg	4/16	0/3	0.008 - 0.028	0.020	--	0.008	--	0.028	--	FS-SS08-S-O	
Pesticides	ENDRIN KETONE	mg/kg	5/16	0/3	0.004 - 0.017	0.010	--	0.004	--	0.017	--	FS-SP12-D02-S-O	
Pesticides	GAMMA BHC (LINDANE)	mg/kg	1/16	0/3	0.002 - 0.002	--	--	0.002	--	0.002	--	18MC-L13-S04-Z1	
Pesticides	HEPTACHLOR EPOXIDE	mg/kg	0/16	0/3	--	--	--	--	--	--	--		
Pesticides	METHOXYCHLOR	mg/kg	4/16	0/3	0.021 - 0.06	0.040	--	0.021	--	0.06	--	FS-SS07-S-O	
Pesticides	P,P'-DDD	mg/kg	3/16	0/3	0.003 - 0.019	0.010	--	0.003	--	0.019	--	FS-SP03-D04-S-O	
Pesticides	P,P'-DDE	mg/kg	7/16	1/3	0.001 - 0.013	0.010	--	0.001	0.001	0.013	0.001	18MC-L13-S04-Z1	OU2-SS15-Z1
Pesticides	P,P'-DDT	mg/kg	11/16	1/3	0.0013 - 0.05	0.02	--	0.0013	0.0028	0.05	0.003	FS-SS04-S-O	OU2-SS15-Z1
Pesticides	Trans-Chlordane	mg/kg	0/16	0/3	--	--	--	--	--	--	--		
SVOCs	2-METHYLNAPHTHALENE	mg/kg	7/17	0/3	0.02 - 9.2	1.46	--	0.02	--	9.2	--	FS-SS06-S-O	
SVOCs	2-NITROANILINE	mg/kg	1/17	--	0.18 - 0.2	0.18	--	0.18	--	0.2	--	FS-SS04-S-ORI	
SVOCs	4-NITROANILINE	mg/kg	1/17	--	0.06 - 0.06	0.06	--	0.06	--	0.06	--	FS-SS10-S-O	
SVOCs	ACENAPHTHENE	mg/kg	9/17	2/3	0.03 - 33	4.05	0.27	0.03	0.19	33	0.34	FS-SS06-S-O	OU2-SS16-Z1
SVOCs	ACENAPHTHYLENE	mg/kg	12/17	1/3	0.04 - 8	1.23	0.27	0.04	0.27	8	0.27	FS-SS08-S-O	OU2-SS16-Z1
SVOCs	ACETOPHENONE	mg/kg	1/17	--	0.01 - 0.01	0.01	--	0.01	--	0.01	--	18MC-L18-S07-Z1	
SVOCs	ANTHRACENE	mg/kg	14/17	3/3	0.06 - 57	5.14	0.45	0.06	0.07	57	0.99	FS-SS06-S-O	OU2-SS16-Z1
SVOCs	BENZALDEHYDE	mg/kg	1/17	--	0.04 - 0.04	0.04	--	0.04	--	0.04	--	18MC-L13-S04-Z1	
SVOCs	BENZO(A)ANTHRACENE	mg/kg	16/17	3/3	0.21 - 110	12.71	1.82	0.22	0.21	110	4.6	FS-SS06-S-O	OU2-SS16-Z1
SVOCs	BENZO(A)PYRENE	mg/kg	15/17	3/3	0.12 - 20	3.06	1.41	0.12	0.19	20	3.5	FS-SS06-S-O	OU2-SS16-Z1
SVOCs	BENZO(B)FLUORANTHENE	mg/kg	16/17	3/3	0.25 - 160	15.41	2.09	0.32	0.25	160	5.3	FS-SS06-S-O	OU2-SS16-Z1
SVOCs	BENZO(G,H,I)PERYLENE	mg/kg	6/17	3/3	0.13 - 2.1	0.81	0.87	0.18	0.13	2	2.1	FS-SP12-D02-S-O	OU2-SS16-Z1
SVOCs	BENZO(K)FLUORANTHENE	mg/kg	13/17	3/3	0.09 - 200	21.01	0.82	0.1	0.09	200	2.1	FS-SS06-S-O	OU2-SS16-Z1
SVOCs	BENZYL BUTYL PHTHALATE	mg/kg	4/17	--	0.07 - 36	9.07	--	0.07	--	36	--	FS-SS06-S-O	
SVOCs	BIPHENYL (DIPHENYL)	mg/kg	1/17	--	0.03 - 0.03	0.03	--	0.03	--	0.03	--	18MC-L18-S07-Z1	
SVOCs	BIS(2-ETHYLHEXYL) PHTHALATE	mg/kg	13/17	--	0.04 - 50	9.49	--	0.04	--	50	--	FS-SS06-S-O	
SVOCs	CARBAZOLE	mg/kg	11/17	--	0.05 - 33	3.43	--	0.05	--	33	--	FS-SS06-S-O	
SVOCs	CHRYSENE	mg/kg	16/17	3/3	0.22 - 92	11.43	1.73	0.26	0.22	92	4.3	FS-SS06-S-O	OU2-SS16-Z1
SVOCs	DIBENZ(A,H)ANTHRACENE	mg/kg	12/17	2/3	0.05 - 16	2	0.4	0.05	0.11	16	0.68	FS-SS06-S-O	OU2-SS16-Z1
SVOCs	DIBENZOFURAN	mg/kg	9/17	--	0.02 - 26	3.12	--	0.02	--	26	--	FS-SS06-S-O	
SVOCs	DIETHYL PHTHALATE	mg/kg	1/17	--	23 - 23	23	--	23	--	23	--	FS-SS05-S-O	
SVOCs	DI-N-BUTYL PHTHALATE	mg/kg	11/17	--	0.01 - 2	0.59	--	0.01	--	2	--	FS-SS01-S-O	
SVOCs	DI-N-OCTYLPHTHALATE	mg/kg	7/17	--	0.02 - 15	2.44	--	0.02	--	15	--	FS-SS05-S-O	
SVOCs	FLUORANTHENE	mg/kg	16/17	3/3	0.48 - 240	25.8	4.36	0.55	0.48	240	11	FS-SS06-S-O	OU2-SS16-Z1
SVOCs	FLUORENE	mg/kg	9/17	2/3	0.03 - 48	5.87	0.3	0.03	0.16	48	0.44	FS-SS06-S-O	OU2-SS16-Z1
SVOCs	INDENO(1,2,3-C,D)PYRENE	mg/kg	13/17	3/3	0.07 - 12	1.7	0.8	0.07	0.11	12	2	FS-SS06-S-O	OU2-SS16-Z1
SVOCs	NAPHTHALENE	mg/kg	7/17	1/3	0.02 - 36	5.3	0.1	0.02	0.13	36	0.13	FS-SS06-S-O	OU2-SS17-Z1
SVOCs	PAH, HMW Total	mg/kg	16/17	3/3	2.11 - 924	97.3	17.3	2.13	2.11	924	43.38	FS-SS06-S-O	OU2-SS16-Z1

Table 5-4 Statistical Summary of Positive Results in Surface Soil Samples; Former Flintkote Plant Property, Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection		Overall Range	Average Conc		Minimum Conc		Maximum Conc		Location of Max	
			2010 Prior to	2014 OU2	All Samples	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2
SVOCs	PAH, LMW Total	mg/kg	16/17	3/3	0.35 - 435	33.4	3.2	0.35	0.49	435	6.8	FS-SS06-S-O	OU2-SS16-Z1
SVOCs	PAH, Mixture	mg/kg	16/17	3/3	2.48 - 1359	130.6	20.6	2.48	2.60	1359	50.22	FS-SS06-S-O	OU2-SS16-Z1
SVOCs	PHENANTHRENE	mg/kg	16/17	3/3	0.22 - 250	19.4	2.3	0.22	0.42	250	4.8	FS-SS06-S-O	OU2-SS16-Z1
SVOCs	PHENOL	mg/kg	1/17	--	0.4 - 0.4	0.4	--	0.4	--	0.4	--	FS-SS07-S-O	
SVOCs	PYRENE	mg/kg	16/17	3/3	0.39 - 74	8.63	3.18	0.39	0.43	74	7.8	FS-SS06-S-O	OU2-SS16-Z1
VOCs	METHYLENE CHLORIDE	mg/kg	2/2	--	0.01 - 0.02	0.02	--	0.01	--	0.02	--	FS-SP03-D04-S-O	
Cyanide	CYANIDE	mg/kg	7/12	--	1.1 - 3.6	1.84	--	1.1	--	3.6	--	FS-SP12-D02-S-O	

Table 5-5 Statistical Summary of Positive Results in Subsurface Soil Samples; Former Flintkote Plant Property, Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection		Overall Range	Average Conc		Minimum Conc		Maximum Conc		Location of Max	
			2010 Prior to	2014 OU2	All Samples	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2
Metals	ALUMINUM	mg/kg	26/26	22/22	2100 - 15700	7404	6213	3640	2100	15700	12000	FS-MW02OB-D2428-S-O	OU2-TP07-Z1
Metals	ANTIMONY	mg/kg	20/26	13/22	0.1 - 3000	11	248	0.6	0.1	128	3000	FS-SP11-D410-S-O	OU2-TP06-01
Metals	ARSENIC	mg/kg	27/27	22/22	1 - 150	17	26	1	2	143	150	FS-SP19-D48-S-O	OU2-TP06-01
Metals	BARIUM	mg/kg	26/26	22/22	27 - 2170	276	179	27	32	2170	820	FS-SP23-D14-S-O	OU2-TP06-01
Metals	BERYLLIUM	mg/kg	26/26	18/22	0.2 - 1.6	0.5	0.8	0.2	0.3	1.6	1.5	FS-SP19-D48-S-O	OU2-TP01-01
Metals	CADMIUM	mg/kg	12/26	22/22	0.1 - 59	1.4	6.9	0.1	0.1	4.6	59	FS-SP09-D14-S-O	OU2-TP06-01
Metals	CALCIUM	mg/kg	26/26	22/22	869 - 96900	33812	21967	869	1400	96900	94600	FS-MW04RK-D68-S-O	OU2-SB01-Z1
Metals	CHROMIUM, HEXAVALENT	mg/kg	--	1/1	0.5 - 0.5	--	0.5	--	0.5	--	0.5		OU2-SB02-Z1
Metals	CHROMIUM, TOTAL	mg/kg	27/27	22/22	5.8 - 171	29	49	5.8	7.2	171	160	18MC-L18-S07-Z2	OU2-TP05-01
Metals	COBALT	mg/kg	26/26	22/22	4.2 - 59	9.3	11.6	4.2	4.2	29	59	FS-SP11-D410-S-O	OU2-TP05-01
Metals	COPPER	mg/kg	27/27	22/22	3.6 - 170000	804	11646	3.9	3.6	15200	170000	FS-SP11-D410-S-O	OU2-TP05-01
Metals	IRON	mg/kg	26/26	22/22	8620 - 330000	29182	51705	8620	14600	220000	330000	FS-SP11-D410-S-O	OU2-TP05-01
Metals	LEAD	mg/kg	27/27	22/22	1 - 46000	758	2883	5	1	10000	46000	FS-SP11-D410-S-O	OU2-TP06-01
Metals	MAGNESIUM	mg/kg	26/26	22/22	380 - 49100	5207	7828	660	380	14900	49100	FS-SP23-D14-S-O	OU2-SB01-Z1
Metals	MANGANESE	mg/kg	26/26	22/22	90 - 2360	790	469	90	137	2360	1300	18MC-L17-S04-Z2	OU2-TP06-01
Metals	MERCURY	mg/kg	22/26	20/22	0.01 - 23	1.98	3.78	0.01	0.02	20	23	FS-MW04RK-D35-S-O	OU2-TP06-01
Metals	NICKEL	mg/kg	26/26	22/22	7 - 3900	45	205	7	8	392	3900	18MC-L18-S06-Z2	OU2-TP05-01
Metals	POTASSIUM	mg/kg	26/26	19/22	360 - 2130	1156	1010	432	360	1820	2130	FS-MW04RK-D68-S-O	OU2-SB02-Z3
Metals	SELENIUM	mg/kg	15/26	9/22	0.3 - 8.6	2.4	1.1	0.7	0.3	8.6	1.9	FS-SP11-D410-S-O	OU2-TP09-Z1
Metals	SILVER	mg/kg	15/26	14/22	0.02 - 210	1.4	19.1	0.1	0.02	11	210	FS-SP11-D410-S-O	OU2-TP06-01
Metals	SODIUM	mg/kg	23/26	10/22	39 - 685	166	152	53	39	685	260	FS-MW02OB-D2428-S-O	OU2-TP01-01
Metals	THALLIUM	mg/kg	17/26	11/22	0.1 - 33	6.0	0.3	1.3	0.1	33	0.8	FS-SP11-D410-S-O	OU2-TP02-01
Metals	VANADIUM	mg/kg	26/26	22/22	10 - 31	17	19	10	11	31	29	FS-SP11-D410-S-O	OU2-TP09-Z1
Metals	ZINC	mg/kg	27/27	22/22	20 - 60000	707	5533	24	20	8010	60000	FS-SP11-D410-S-O	OU2-TP05-01
PCB	PCB, Total	mg/kg	7/27	11/22	0.004 - 6.6	1.1	0.85	0.02	0.004	6.6	2.69	FS-SP11-D410-S-O	OU2-TP07-Z1
PCB	PCB-1242 (AROCLOR 1242)	mg/kg	0/27	5/22	0.21 - 1.2	--	0.66	--	0.21	--	1.2		OU2-TP07-Z2
PCB	PCB-1248 (AROCLOR 1248)	mg/kg	0/27	5/22	0.02 - 2	--	0.43	--	0.02	--	2		OU2-TP05-01
PCB	PCB-1254 (AROCLOR 1254)	mg/kg	4/27	6/22	0.003 - 4	1.13	0.35	0.02	0.003	4	1.1	FS-SP11-D410-S-O	OU2-TP07-Z1
PCB	PCB-1260 (AROCLOR 1260)	mg/kg	2/27	11/22	0.001 - 2.6	1.310	0.120	0.015	0.001	2.60	0.48	FS-SP11-D410-S-O	OU2-TP05-01
PCB	PCB-1262 (AROCLOR 1262)	mg/kg	2/10	0/22	0.016 - 0.53	0.270	--	0.016	--	0.53	--	18MC-L18-S06-Z2	
PCB	PCB-1268 (AROCLOR 1268)	mg/kg	0/10	10/22	0.0044 - 0.16	--	0.050	--	0.0044	--	0.16		OU2-TP07-Z1
Pesticides	ALDRIN	mg/kg	0/15	5/22	0.0002 - 0.003	--	--	--	0.0002	--	0.003		OU2-TP09-Z1
Pesticides	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	mg/kg	0/15	1/22	0.0002 - 0.0002	--	--	--	0.0002	--	0.0002		OU2-TP01-01
Pesticides	ALPHA ENDOSULFAN	mg/kg	0/15	4/22	0.0001 - 0.011	--	0.010	--	0.0001	--	0.011		OU2-SB02-Z2
Pesticides	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	mg/kg	1/15	7/22	0.0008 - 0.13	0.020	0.030	0.016	0.0008	0.016	0.13	FS-MW04RK-D35-S-O	OU2-TP07-Z1
Pesticides	BETA ENDOSULFAN	mg/kg	0/15	4/22	0.0002 - 0.005	--	--	--	0.0002	--	0.005		OU2-TP05-01

Table 5-5 Statistical Summary of Positive Results in Subsurface Soil Samples; Former Flintkote Plant Property, Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection		Overall Range	Average Conc		Minimum Conc		Maximum Conc		Location of Max	
			2010 Prior to	2014 OU2	All Samples	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2
Pesticides	cis-Chlordane	mg/kg	0/15	6/22	0.0001 - 0.007	--	--	--	0.0001	--	0.007		OU2-TP07-Z1
Pesticides	DDT, Total	mg/kg	7/15	18/22	0.0003 - 0.108	0.010	0.03	0.001	0.0003	0.025	0.108	FS-SP02-D26-S-O	OU2-SB02-Z2
Pesticides	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	mg/kg	0/15	10/22	0.00004 - 0.067	--	0.010	--	0.00004	--	0.067		OU2-TP07-Z1
Pesticides	DIELDRIN	mg/kg	1/15	9/22	0.0007 - 0.1	--	0.020	0.004	0.0007	0.004	0.1	FS-SP21-D45-S-O	OU2-SB03-Z1
Pesticides	ENDOSULFAN SULFATE	mg/kg	0/15	5/20	0.0001 - 0.013	--	0.010	--	0.0001	--	0.013		OU2-TP07-Z1
Pesticides	ENDRIN	mg/kg	1/15	6/22	0.0001 - 0.018	0.020	--	0.018	0.0001	0.018	0.009	FS-SP02-D26-S-O	OU2-TP07-Z1
Pesticides	ENDRIN ALDEHYDE	mg/kg	2/15	6/22	0.0003 - 0.049	0.010	0.020	0.009	0.0003	0.018	0.049	FS-SP02-D26-S-O	OU2-SB02-Z2
Pesticides	ENDRIN KETONE	mg/kg	6/15	11/22	0.00002 - 0.061	0.010	0.020	0.001	0.00002	0.036	0.061	FS-MW04RK-D35-S-O	OU2-SB02-Z2
Pesticides	GAMMA BHC (LINDANE)	mg/kg	0/15	4/22	0.0005 - 0.002	--	--	--	0.0005	--	0.002		OU2-TP01-01
Pesticides	gamma-Chlordane	mg/kg	--	6/12	0.0003 - 0.05	--	0.010	--	0.0003	--	0.05		OU2-TP07-Z1
Pesticides	HEPTACHLOR	mg/kg	0/15	8/22	0.0003 - 0.035	--	0.01	--	0.0003	--	0.035		OU2-TP07-Z1
Pesticides	HEPTACHLOR EPOXIDE	mg/kg	0/15	6/22	0.0011 - 0.09	--	0.02	--	0.0011	--	0.09		OU2-TP07-Z1
Pesticides	METHOXYCHLOR	mg/kg	3/15	10/22	0.00002 - 0.22	0.03	0.03	0.003	0.00002	0.05	0.22	FS-MW04RK-D35-S-O	OU2-SB03-Z1
Pesticides	P,P'-DDD	mg/kg	0/15	12/21	0.0017 - 0.09	--	0.02	--	0.0017	--	0.09		OU2-SB02-Z2
Pesticides	P,P'-DDE	mg/kg	2/15	6/22	0.0001 - 0.02	--	0.01	0.001	0.0001	0.004	0.02	FS-SP09-D14-S-O	OU2-TP07-Z1
Pesticides	P,P'-DDT	mg/kg	7/15	12/22	0.0003 - 0.06	0.01	0.02	0.001	0.0003	0.03	0.06	FS-SP02-D26-S-O	OU2-SB03-Z1
SVOCs	2-METHYLNAPHTHALENE	mg/kg	6/15	17/22	0.012 - 3.6	0.49	0.94	0.012	0.03	1.2	3.6	FS-MW04RK-D35-S-O	OU2-TP01-01
SVOCs	2-METHYLPHENOL (O-CRESOL)	mg/kg	0/15	1/22	0.05 - 0.05	--	0.05	--	0.05	--	0.05		OU2-TP09-Z2
SVOCs	3- AND 4- METHYLPHENOL (TOTAL)	mg/kg	--	6/12	0.04 - 0.43	--	0.15	--	0.04	--	0.43		OU2-TP09-Z2
SVOCs	4-CHLOROANILINE	mg/kg	0/15	1/22	0.01 - 0.01	--	0.01	--	0.01	--	0.01		OU2-TP03-02
SVOCs	4-METHYLPHENOL (P-CRESOL)	mg/kg	1/15	0/10	0.01 - 0.01	0.01	--	0.01	--	0.01	--	FS-SP19-D48-S-O	
SVOCs	ACENAPHTHENE	mg/kg	8/15	9/22	0.02 - 6.9	0.73	0.9	0.02	0.03	5.2	6.9	FS-MW04RK-D35-S-O	OU2-TP09-Z2
SVOCs	ACENAPHTHYLENE	mg/kg	7/15	11/22	0.01 - 1.6	0.16	0.49	0.02	0.01	0.51	1.6	FS-MW04RK-D35-S-O	OU2-TP09-Z2
SVOCs	ACETOPHENONE	mg/kg	0/15	3/22	0.21 - 0.39	--	0.3	--	0.21	--	0.39		OU2-TP02-01
SVOCs	ANTHRACENE	mg/kg	9/15	13/22	0.03 - 15	1.28	1.48	0.03	0.08	9	15	FS-MW04RK-D35-S-O	OU2-TP09-Z2
SVOCs	BENZALDEHYDE	mg/kg	0/15	3/22	0.07 - 0.16	--	0.11	--	0.07	--	0.16		OU2-TP07-Z1
SVOCs	BENZO(A)ANTHRACENE	mg/kg	12/15	19/22	0.02 - 28	2.01	2.39	0.02	0.04	16	28	FS-MW04RK-D35-S-O	OU2-TP09-Z2
SVOCs	BENZO(A)PYRENE	mg/kg	12/15	19/22	0.02 - 24	0.89	2.09	0.02	0.03	3.9	24	FS-MW04RK-D35-S-O	OU2-TP09-Z2
SVOCs	BENZO(B)FLUORANTHENE	mg/kg	12/15	19/22	0.01 - 20	1.57	2.06	0.01	0.05	11	20	FS-MW04RK-D35-S-O	OU2-TP09-Z2
SVOCs	BENZO(G,H,I)PERYLENE	mg/kg	9/15	16/22	0.01 - 14	0.26	1.53	0.01	0.11	1	14	FS-SP02-D26-S-O	OU2-TP09-Z2
SVOCs	BENZO(K)FLUORANTHENE	mg/kg	12/15	15/22	0.02 - 16	1.86	1.22	0.02	0.08	16	11	FS-MW04RK-D35-S-O	OU2-TP09-Z2
SVOCs	BENZYL BUTYL PHTHALATE	mg/kg	1/15	1/22	0.01 - 0.02	0.02	0.01	0.02	0.01	0.02	0.01	FS-SP16-D812-S-O	OU2-TP01-02
SVOCs	BIPHENYL (DIPHENYL)	mg/kg	0/15	4/22	0.03 - 0.49	--	0.25	--	0.03	--	0.49		OU2-TP09-Z2
SVOCs	BIS(2-ETHYLHEXYL) PHTHALATE	mg/kg	14/15	3/22	0.04 - 11	1.13	1.83	0.04	0.88	11	3.3	FS-MW04RK-D35-S-O	OU2-TP07-Z2
SVOCs	CARBAZOLE	mg/kg	9/15	3/22	0.01 - 3.3	0.47	1.08	0.01	0.08	3.3	3	FS-MW04RK-D35-S-O	OU2-TP09-Z2
SVOCs	CHRYSENE	mg/kg	12/15	19/22	0.02 - 29	1.7	2.6	0.02	0.036	13	29	FS-MW04RK-D35-S-O	OU2-TP09-Z2

Table 5-5 Statistical Summary of Positive Results in Subsurface Soil Samples; Former Flintkote Plant Property, Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection		Overall Range	Average Conc		Minimum Conc		Maximum Conc		Location of Max	
			2010 Prior to	2014 OU2	All Samples	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2
SVOCs	DIBENZ(A,H)ANTHRACENE	mg/kg	8/15	12/22	0.027 - 4.3	0.370	0.580	0.027	0.04	1.5	4.3	FS-MW04RK-D35-S-O	OU2-TP09-Z2
SVOCs	DIBENZOFURAN	mg/kg	8/15	10/22	0.019 - 4.4	0.680	0.610	0.019	0.027	4.4	2.5	FS-MW04RK-D35-S-O	OU2-TP09-Z2
SVOCs	DI-N-BUTYL PHTHALATE	mg/kg	6/15	1/22	0.01 - 0.43	0.030	0.430	0.01	0.43	0.11	0.43	FS-SP11-D410-S-O	OU2-TP05-01
SVOCs	DI-N-OCTYLPHTHALATE	mg/kg	6/15	0/22	0.012 - 0.031	0.020	--	0.012	--	0.031	--	FS-SP07-D24-S-O	
SVOCs	FLUORANTHENE	mg/kg	14/15	19/22	0.015 - 65	4.400	5.190	0.015	0.07	45	65	FS-MW04RK-D35-S-O	OU2-TP09-Z2
SVOCs	FLUORENE	mg/kg	8/15	7/22	0.021 - 7.3	0.720	1.330	0.021	0.03	4.6	7.3	FS-MW04RK-D35-S-O	OU2-TP09-Z2
SVOCs	INDENO(1,2,3-C,D)PYRENE	mg/kg	11/15	16/22	0.013 - 12	0.43	1.300	0.013	0.036	1.6	12	FS-MW04RK-D35-S-O	OU2-TP09-Z2
SVOCs	NAPHTHALENE	mg/kg	9/15	16/22	0.018 - 6.7	0.640	1	0.018	0.038	4.6	6.7	FS-MW04RK-D35-S-O	OU2-TP09-Z2
SVOCs	PAH, HMW Total	mg/kg	14/15	19/22	0.03 - 260	14.19	22.06	0.03	0.28	124	260	FS-MW04RK-D35-S-O	OU2-TP09-Z2
SVOCs	PAH, LMW Total	mg/kg	13/15	18/22	0.02 - 120	6.65	9.82	0.02	0.06	67	120	FS-MW04RK-D35-S-O	OU2-TP09-Z2
SVOCs	PAH, Mixture	mg/kg	14/15	19/22	0.03 - 380	20.36	31.37	0.03	0.34	191	380	FS-MW04RK-D35-S-O	OU2-TP09-Z2
SVOCs	PHENANTHRENE	mg/kg	13/15	17/22	0.02 - 80	4.12	6.03	0.02	0.06	42	80	FS-MW04RK-D35-S-O	OU2-TP09-Z2
SVOCs	PHENOL	mg/kg	2/15	4/22	0.01 - 0.09	0.02	0.05	0.01	0.03	0.03	0.09	FS-SP09-D14-S-O	OU2-TP09-Z2
SVOCs	PYRENE	mg/kg	14/15	19/22	0.01 - 53	2.16	4.02	0.01	0.06	16	53	FS-MW04RK-D35-S-O	OU2-TP09-Z2
VOCs	ACETONE	mg/kg	3/16	7/18	0.01 - 0.07	0.02	0.03	0.01	0.01	0.02	0.07	FS-MW03RK-D1415.5-S-O	OU2-SB02-Z2
VOCs	BENZENE	mg/kg	0/16	1/18	0.03 - 0.03	--	0.03	--	0.03	--	0.03		OU2-SB02-Z2
VOCs	CARBON DISULFIDE	mg/kg	0/16	8/22	0.001 - 0.056	--	0.01	--	0.001	--	0.056		OU2-SB02-Z2
VOCs	CHLOROFORM	mg/kg	0/16	1/22	0.001 - 0.001	--	--	--	0.001	--	0.001		OU2-TP05-01
VOCs	CYCLOHEXANE	mg/kg	0/16	7/22	0.002 - 0.096	--	0.020	--	0.002	--	0.096		OU2-SB02-Z2
VOCs	ETHYLBENZENE	mg/kg	0/16	1/18	0.006 - 0.006	--	0.010	--	0.006	--	0.006		OU2-SB02-Z2
VOCs	ISOPROPYLBENZENE (CUMENE)	mg/kg	0/16	1/18	0.002 - 0.002	--	--	--	0.002	--	0.002		OU2-SB02-Z2
VOCs	m,p-Xylene	mg/kg	--	6/21	0.001 - 0.037	--	0.010	--	0.001	--	0.037		OU2-SB02-Z2
VOCs	METHYL ETHYL KETONE (2-BUTANONE)	mg/kg	0/16	2/22	0.027 - 0.047	--	0.040	--	0.027	--	0.047		OU2-SB02-Z2
VOCs	METHYLCYCLOHEXANE	mg/kg	0/16	7/22	0.003 - 0.17	--	0.03	--	0.003	--	0.17		OU2-SB02-Z2
VOCs	METHYLENE CHLORIDE	mg/kg	15/16	1/22	0.001 - 0.02	0.010	--	0.004	0.001	0.02	0.001	FS-SP16-D812-S-O	OU2-TP01-02
VOCs	O-XYLENE (1,2-DIMETHYLBENZENE)	mg/kg	--	6/21	0.0004 - 0.029	--	0.010	--	0.0004	--	0.029		OU2-SB02-Z2
VOCs	TOLUENE	mg/kg	0/16	7/22	0.001 - 0.074	--	0.010	--	0.001	--	0.074		OU2-SB02-Z2
VOCs	TRICHLOROFLUOROMETHANE	mg/kg	0/16	1/21	0.001 - 0.001	--	--	--	0.001	--	0.001		OU2-SB02-Z1
Cyanide	CYANIDE	mg/kg	4/15	--	4.1 - 9.3	6	--	4.1	--	9.3	--	FS-SP11-D410-S-O	

Table 5-6 Statistical Summary of Positive Results in Surface Soil Samples; United Paperboard Property, Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection		Overall Range	Average Conc		Minimum Conc		Maximum Conc		Location of Max	
			2010 Prior to	2014 OU2	All Samples	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2
Metals	ALUMINUM	mg/kg	23/23	5/5	1140 - 9820	5497	5746	2290	1140	8030	9820	18MC-L08-S05-Z1	OU2-SS19-Z1
Metals	ANTIMONY	mg/kg	15/23	2/5	0.8 - 18	6.3	5.6	0.8	1.5	18	10	18MC-L11-S05-Z1	OU2-SS20-Z1
Metals	ARSENIC	mg/kg	26/26	5/5	3.6 - 66	14	12	3.6	4.5	66	23	18MC-SS01-Z1	OU2-SS20-Z1
Metals	BARIUM	mg/kg	23/23	5/5	35 - 318	121	92	35	45	318	124	18MC-L11-S04-Z1	OU2-SS21-Z1
Metals	BERYLLIUM	mg/kg	23/23	5/5	0.16 - 1.1	0.5	0.51	0.16	0.35	1.1	0.72	18MC-L11-S04-Z1	OU2-SS20-Z1
Metals	CADMIUM	mg/kg	22/23	5/5	0.17 - 13	1.55	0.82	0.17	0.48	13	2	18MC-SS08-Z1	OU2-SS20-Z1
Metals	CALCIUM	mg/kg	23/23	5/5	3430 - 217000	62947	33254	3430	4000	217000	65700	18MC-SS09-Z1	OU2-SS25-Z1
Metals	CHROMIUM, TOTAL	mg/kg	26/26	5/5	4.2 - 74	20	23	6	4.2	74	40	TP-3	OU2-SS25-Z1
Metals	COBALT	mg/kg	23/23	5/5	2.3 - 24	6	13.4	2.6	2.3	9.2	24	SB-3	OU2-SS19-Z1
Metals	COPPER	mg/kg	26/26	5/5	21 - 1410	190	96	21	34	1410	197	TP-3	OU2-SS20-Z1
Metals	IRON	mg/kg	23/23	5/5	8650 - 80500	23153	17840	8650	14800	80500	19600	18MC-L09-S05-Z1	OU2-SS21-Z1
Metals	LEAD	mg/kg	30/30	5/5	4.5 - 4340	621	224	4.5	31	4340	386	SB-3	OU2-SS20-Z1
Metals	MAGNESIUM	mg/kg	23/23	5/5	483 - 114000	18264	13519	843	483	114000	30800	18MC-SS09-Z1	OU2-SS25-Z1
Metals	MANGANESE	mg/kg	23/23	5/5	58 - 1810	650	693	88	58	1810	1610	18MC-L11-S05-Z1	OU2-SS21-Z1
Metals	MERCURY	mg/kg	23/23	5/5	0.02 - 1.1	0.22	0.33	0.02	0.04	0.77	1.10	SB-3	OU2-SS20-Z1
Metals	NICKEL	mg/kg	23/23	5/5	9 - 161	20	69	9.0	10	44	161	18MC-L08-S04-Z1	OU2-SS25-Z1
Metals	POTASSIUM	mg/kg	23/23	5/5	326 - 2680	1281	850	491	326	2680	1510	18MC-L06-S04-Z1	OU2-SS21-Z1
Metals	SELENIUM	mg/kg	10/23	2/5	0.8 - 11.5	2.8	2.9	0.8	2.9	11.5	2.9	18MC-SS01-Z1	OU2-SS20-Z1
Metals	SILVER	mg/kg	15/23	1/5	0.11 - 2	0.43	2	0.11	2	0.77	2	18MC-L07-S05-Z1	OU2-SS20-Z1
Metals	SODIUM	mg/kg	23/23	5/5	67 - 543	156	103	69	67	543	135	18MC-SS09-Z1	OU2-SS25-Z1
Metals	THALLIUM	mg/kg	1/23	0/5	1.2 - 1.2	1.2	--	1.2	--	1.2	--	18MC-L09-S05-Z1	
Metals	VANADIUM	mg/kg	23/23	5/5	6.9 - 38	16	14	6.9	8	38	17	18MC-L11-S04-Z1	OU2-SS19-Z1
Metals	ZINC	mg/kg	26/26	5/5	33 - 1640	308	199	33	89	1640	320	TP-3	OU2-SS20-Z1
PCB	PCB, Total	mg/kg	17/30	1/5	0.01 - 38	0.49	38	0.01	38	4.3	38	18MC-L07-S05-Z1	OU2-SS20-Z1
PCB	PCB-1248 (AROCLOR 1248)	mg/kg	8/30	1/5	0.01 - 22	0.76	22	0.01	22	4.3	22	18MC-L07-S05-Z1	OU2-SS20-Z1
PCB	PCB-1254 (AROCLOR 1254)	mg/kg	13/30	1/5	0.01 - 16	0.13	16	0.01	16	0.5	16	SS-24	OU2-SS20-Z1
PCB	PCB-1260 (AROCLOR 1260)	mg/kg	4/30	0/5	0.09 - 0.2	0.15	--	0.09	--	0.2	--	SS-24	
Pesticides	ALDRIN	mg/kg	5/15	0/5	0.001 - 0.01	--	--	0.001	--	0.01	--	18MC-L09-S04-Z1	
Pesticides	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	mg/kg	5/15	0/5	0.001 - 0.009	0.010	--	0.001	--	0.009	--	18MC-SS05-Z1	
Pesticides	ALPHA ENDOSULFAN	mg/kg	3/15	0/5	0.003 - 0.016	0.010	--	0.003	--	0.016	--	18MC-L07-S05-Z1	
Pesticides	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	mg/kg	1/15	0/5	0.054 - 0.054	0.050	--	0.054	--	0.054	--	18MC-L07-S05-Z1	
Pesticides	BETA ENDOSULFAN	mg/kg	3/15	0/5	0.003 - 0.036	0.010	--	0.003	--	0.036	--	18MC-L09-S04-Z1	
Pesticides	cis-Chlordane	mg/kg	1/15	0/5	0.013 - 0.013	0.010	--	0.013	--	0.013	--	18MC-SS07-Z1	
Pesticides	DDT, Total	mg/kg	15/15	1/5	0.0012 - 0.175	0.070	--	0.015	0.0012	0.175	0.001	18MC-SS07-Z1	OU2-SS19-Z1
Pesticides	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	mg/kg	4/15	0/5	0.001 - 0.009	--	--	0.001	--	0.009	--	18MC-SS01-Z1	
Pesticides	DIELDRIN	mg/kg	5/15	0/5	0.009 - 0.22	0.050	--	0.009	--	0.22	--	18MC-L07-S05-Z1	
Pesticides	ENDRIN	mg/kg	2/15	0/5	0.002 - 0.016	0.010	--	0.002	--	0.016	--	18MC-L07-S05-Z1	

Table 5-6 Statistical Summary of Positive Results in Surface Soil Samples; United Paperboard Property, Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection		Overall Range	Average Conc		Minimum Conc		Maximum Conc		Location of Max	
			2010 Prior to	2014 OU2	All Samples	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2
Pesticides	ENDRIN ALDEHYDE	mg/kg	2/15	0/5	0.03 - 0.097	0.060	--	0.030	--	0.097	--	18MC-SS08-Z1	
Pesticides	ENDRIN KETONE	mg/kg	1/15	0/5	0.007 - 0.007	0.010	--	0.007	--	0.007	--	18MC-SS08-Z1	
Pesticides	GAMMA BHC (LINDANE)	mg/kg	4/15	0/5	0.001 - 0.011	--	--	0.001	--	0.011	--	18MC-L07-S05-Z1	
Pesticides	HEPTACHLOR EPOXIDE	mg/kg	1/15	0/5	0.001 - 0.001	--	--	0.001	--	0.001	--	18MC-L08-S04-Z1	
Pesticides	METHOXYCHLOR	mg/kg	9/15	0/5	0.004 - 0.4	0.110	--	0.004	--	0.4	--	18MC-L09-S04-Z1	
Pesticides	P,P'-DDD	mg/kg	3/15	0/5	0.005 - 0.018	0.01	--	0.005	--	0.018	--	18MC-SS07-Z1	
Pesticides	P,P'-DDE	mg/kg	15/15	0/5	0.006 - 0.12	0.030	--	0.006	--	0.12	--	18MC-L07-S05-Z1	
Pesticides	P,P'-DDT	mg/kg	14/15	1/5	0.001 - 0.12	0.030	0.001	0.009	0.001	0.12	0.001	18MC-SS07-Z1	OU2-SS19-Z1
Pesticides	Trans-Chlordane	mg/kg	2/15	0/5	0.01 - 0.1	0.050	--	0.010	--	0.1	--	18MC-L07-S05-Z1	
SVOCs	2-METHYLNAPHTHALENE	mg/kg	9/17	1/5	0.01 - 1.4	0.28	0.37	0.01	0.37	1.4	0.37	18MC-L09-S04-Z1	OU2-SS20-Z1
SVOCs	ACENAPHTHENE	mg/kg	8/17	1/5	0.021 - 3.5	0.64	1.90	0.021	1.9	3.5	1.9	18MC-L09-S04-Z1	OU2-SS20-Z1
SVOCs	ACENAPHTHYLENE	mg/kg	9/17	0/5	0.011 - 2.3	0.55	--	0.011	--	2.3	--	18MC-L09-S04-Z1	
SVOCs	ACETOPHENONE	mg/kg	1/17	--	0.018 - 0.02	0.02	--	0.018	--	0.02	--	18MC-SS05-Z1	
SVOCs	ANTHRACENE	mg/kg	13/17	2/5	0.023 - 9	1.33	2.12	0.023	0.048	9	4.2	18MC-L09-S04-Z1	OU2-SS20-Z1
SVOCs	BENZO(A)ANTHRACENE	mg/kg	16/17	4/5	0.022 - 26	3.43	2.10	0.022	0.07	26	8	18MC-L09-S04-Z1	OU2-SS20-Z1
SVOCs	BENZO(A)PYRENE	mg/kg	15/17	4/5	0.02 - 20	3.12	1.68	0.02	0.07	20	6.4	18MC-L09-S04-Z1	OU2-SS20-Z1
SVOCs	BENZO(B)FLUORANTHENE	mg/kg	15/17	4/5	0.02 - 26	4.25	2.34	0.02	0.09	26	8.9	18MC-L09-S04-Z1	OU2-SS20-Z1
SVOCs	BENZO(G,H,I)PERYLENE	mg/kg	16/17	3/5	0.02 - 12	1.94	1.29	0.02	0.08	12	3.7	18MC-L09-S04-Z1	OU2-SS20-Z1
SVOCs	BENZO(K)FLUORANTHENE	mg/kg	13/17	3/5	0.05 - 7.3	1.49	0.91	0.05	0.05	7.3	2.6	18MC-L09-S04-Z1	OU2-SS20-Z1
SVOCs	BIPHENYL (DIPHENYL)	mg/kg	1/17	--	0.39 - 0.39	0.39	--	0.39	--	0.39	--	18MC-L09-S04-Z1	
SVOCs	BIS(2-ETHYLHEXYL) PHTHALATE	mg/kg	2/17	--	0.07 - 0.08	0.08	--	0.07	--	0.08	--	18MC-L10-S04-Z1	
SVOCs	CARBAZOLE	mg/kg	11/17	--	0.02 - 4.8	0.64	--	0.02	--	4.8	--	18MC-L09-S04-Z1	
SVOCs	CHRYSENE	mg/kg	15/17	4/5	0.02 - 23	3.43	1.84	0.02	0.06	23	7	18MC-L09-S04-Z1	OU2-SS20-Z1
SVOCs	DIBENZ(A,H)ANTHRACENE	mg/kg	12/17	1/5	0.02 - 3.8	0.75	1.1	0.02	1.1	3.8	1.1	18MC-L09-S04-Z1	OU2-SS20-Z1
SVOCs	DIBENZOFURAN	mg/kg	8/17	--	0.01 - 2.8	0.56	--	0.01	--	2.8	--	18MC-L09-S04-Z1	
SVOCs	DI-N-OCTYLPHTHALATE	mg/kg	4/17	--	0.01 - 0.04	0.02	--	0.01	--	0.04	--	18MC-SS05-Z1	
SVOCs	FLUORANTHENE	mg/kg	16/17	5/5	0.04 - 52	6.94	3.97	0.04	0.07	52	19	18MC-L09-S04-Z1	OU2-SS20-Z1
SVOCs	FLUORENE	mg/kg	9/17	1/5	0.01 - 4.1	0.73	2	0.01	2	4.1	2	18MC-L09-S04-Z1	OU2-SS20-Z1
SVOCs	INDENO(1,2,3-C,D)PYRENE	mg/kg	15/17	3/5	0.01 - 11	1.75	1.22	0.01	0.07	11	3.5	18MC-L09-S04-Z1	OU2-SS20-Z1
SVOCs	NAPHTHALENE	mg/kg	9/17	1/5	0.01 - 2.8	0.54	0.85	0.01	0.85	2.8	0.85	18MC-L09-S04-Z1	OU2-SS20-Z1
SVOCs	PAH, HMW Total	mg/kg	16/17	5/5	0.12 - 221.1	31.21	15.54	0.18	0.12	221.1	74.2	18MC-L09-S04-Z1	OU2-SS20-Z1
SVOCs	PAH, LMW Total	mg/kg	16/17	5/5	0.02 - 67.1	7.47	5.37	0.02	0.06	67.1	26.32	18MC-L09-S04-Z1	OU2-SS20-Z1
SVOCs	PAH, Mixture	mg/kg	16/17	5/5	0.18 - 288.2	38.68	20.91	0.19	0.18	288.2	100.52	18MC-L09-S04-Z1	OU2-SS20-Z1
SVOCs	PHENANTHRENE	mg/kg	16/17	5/5	0.018 - 44	4.9	3.5	0.018	0.056	44	17	18MC-L09-S04-Z1	OU2-SS20-Z1
SVOCs	PYRENE	mg/kg	16/17	5/5	0.028 - 40	5.4	2.9	0.028	0.056	40	14	18MC-L09-S04-Z1	OU2-SS20-Z1
TOC	TOTAL ORGANIC CARBON	mg/kg	--	4/4	40000 - 360000	--	193250	--	40000	--	360000		OU2-SS20-Z1
pH	PH	SU	5/5	--	7.15 - 8	7.5	--	7.150	--	8	--	SB-1	

Table 5-7 Statistical Summary of Positive Results in Subsurface Soil Samples; United Paperboard Property, Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection	Overall Range	Average Conc	Minimum Conc	Maximum Conc	Location of Max
			2010 Prior to	All Samples	2010 Prior to	2010 Prior to	2010 Prior to	2010 Prior to
Metals	ALUMINUM	mg/kg	42/42	1420 - 12600	6437	1420	12600	18MC-L10-S05-Z2
Metals	ANTIMONY	mg/kg	21/42	0.7 - 980	64.1	0.7	980	18MC-L09-S04-Z2
Metals	ARSENIC	mg/kg	43/43	1.9 - 123	15	1.9	123	18MC-SB02-Z1
Metals	BARIUM	mg/kg	42/42	20 - 286	106	20	286	18MC-L07-S04-Z2
Metals	BERYLLIUM	mg/kg	42/42	0.09 - 2	0.55	0.09	2	18MC-L08-S04-Z2
Metals	CADMIUM	mg/kg	29/42	0.07 - 8.6	1.18	0.07	8.6	18MC-SB15-Z1
Metals	CALCIUM	mg/kg	42/42	932 - 215000	59637	932	215000	18MC-MW01-Z1
Metals	CHROMIUM, TOTAL	mg/kg	43/43	2.6 - 71.9	15	2.6	71.9	18MC-SB15-Z1
Metals	COBALT	mg/kg	42/42	1.3 - 17	7.1	1.3	17	18MC-SB15-Z1
Metals	COPPER	mg/kg	43/43	6.5 - 1600	129.3	6.5	1600	18MC-L09-S05-Z2
Metals	IRON	mg/kg	42/42	2840 - 234000	24485	2840	234000	18MC-SB15-Z1
Metals	LEAD	mg/kg	43/43	1.7 - 7430	449	1.7	7430	18MC-L09-S04-Z2
Metals	MAGNESIUM	mg/kg	42/42	150 - 144000	12468	150.0	144000	18MC-MW01-Z1
Metals	MANGANESE	mg/kg	42/42	45 - 4100	735	45	4100	18MC-SB01-Z2
Metals	MERCURY	mg/kg	34/42	0.01 - 10	0.83	0.01	10	18MC-SB15-Z2
Metals	NICKEL	mg/kg	42/42	3.8 - 107	19.67	3.8	107	18MC-SB15-Z1
Metals	POTASSIUM	mg/kg	42/42	226 - 2750	1194	226	2750	18MC-MW05-Z1
Metals	SELENIUM	mg/kg	9/42	0.9 - 5.8	2.2	0.9	5.8	18MC-L08-S04-Z2
Metals	SILVER	mg/kg	24/42	0.2 - 3.5	0.7	0.2	3.5	18MC-L09-S05-Z2
Metals	SODIUM	mg/kg	42/42	57 - 578	174	57	578	18MC-MW01-Z1
Metals	THALLIUM	mg/kg	1/42	0.98 - 0.98	0.98	0.98	0.98	SB-2
Metals	VANADIUM	mg/kg	42/42	3.5 - 59.9	16.7	3.5	59.9	18MC-SB02-Z1
Metals	ZINC	mg/kg	43/43	2.9 - 1890	205	2.9	1890	18MC-SB15-Z1
PCB	PCB, Total	mg/kg	13/43	0.005 - 626	50	0.005	626	18MC-SB15-Z1
PCB	PCB-1248 (AROCLOR 1248)	mg/kg	11/43	0.005 - 550	51.6	0.005	550	18MC-SB15-Z1
PCB	PCB-1254 (AROCLOR 1254)	mg/kg	6/43	0.01 - 2.8	0.49	0.01	2.8	18MC-L09-S05-Z2
PCB	PCB-1260 (AROCLOR 1260)	mg/kg	2/43	0.17 - 76	38	0.17	76	18MC-SB15-Z1
SVOCs	2-METHYLNAPHTHALENE	mg/kg	3/16	0.024 - 0.068	0.05	0.024	0.068	18MC-MW05-Z1
SVOCs	4-METHYLPHENOL (P-CRESOL)	mg/kg	1/16	0.02 - 0.02	0.02	0.02	0.02	18MC-MW01-Z2
SVOCs	ACENAPHTHENE	mg/kg	3/16	0.036 - 0.11	0.070	0.036	0.11	18MC-MW08-Z1
SVOCs	ACENAPHTHYLENE	mg/kg	4/16	0.014 - 0.52	0.160	0.014	0.52	18MC-MW05-Z1
SVOCs	ANTHRACENE	mg/kg	6/16	0.011 - 0.35	0.190	0.011	0.350	18MC-MW01-Z2
SVOCs	BENZALDEHYDE	mg/kg	1/16	0.034 - 0.034	0.030	0.034	0.034	18MC-MW05-Z1
SVOCs	BENZO(A)ANTHRACENE	mg/kg	9/16	0.01 - 2.3	0.500	0.01	2.3	18MC-MW05-Z1
SVOCs	BENZO(A)PYRENE	mg/kg	8/16	0.013 - 2.1	0.490	0.013	2.1	18MC-MW05-Z1
SVOCs	BENZO(B)FLUORANTHENE	mg/kg	11/16	0.009 - 3.4	0.550	0.009	3.4	18MC-MW05-Z1
SVOCs	BENZO(G,H,I)PERYLENE	mg/kg	5/16	0.057 - 1.1	0.400	0.057	1.1	18MC-MW05-Z1

Table 5-7 Statistical Summary of Positive Results in Subsurface Soil Samples; United Paperboard Property, Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection	Overall Range	Average Conc	Minimum Conc	Maximum Conc	Location of Max
			2010 Prior to	All Samples	2010 Prior to	2010 Prior to	2010 Prior to	2010 Prior to
SVOCs	BENZO(K)FLUORANTHENE	mg/kg	5/16	0.09 - 1.4	0.41	0.09	1.4	18MC-MW05-Z1
SVOCs	BIPHENYL (DIPHENYL)	mg/kg	1/16	0.015 - 0.015	0.020	0.015	0.015	18MC-MW05-Z1
SVOCs	BIS(2-ETHYLHEXYL) PHTHALATE	mg/kg	7/16	0.044 - 1.3	0.350	0.044	1.3	18MC-MW02-Z2
SVOCs	CARBAZOLE	mg/kg	4/16	0.008 - 0.081	0.040	0.008	0.081	18MC-MW05-Z1
SVOCs	CHRYSENE	mg/kg	8/16	0.01 - 2.2	0.52	0.01	2.20	18MC-MW05-Z1
SVOCs	DIBENZ(A,H)ANTHRACENE	mg/kg	6/16	0.02 - 0.34	0.12	0.02	0.34	18MC-MW05-Z1
SVOCs	DIBENZOFURAN	mg/kg	3/16	0.026 - 0.06	0.04	0.026	0.06	18MC-MW05-Z1
SVOCs	FLUORANTHENE	mg/kg	11/16	0.013 - 3.7	0.73	0.013	3.7	18MC-MW05-Z1
SVOCs	FLUORENE	mg/kg	4/16	0.009 - 0.14	0.09	0.009	0.14	18MC-MW08-Z1
SVOCs	INDENO(1,2,3-C,D)PYRENE	mg/kg	7/16	0.01 - 1.1	0.29	0.01	1.1	18MC-MW05-Z1
SVOCs	NAPHTHALENE	mg/kg	4/16	0.03 - 0.16	0.08	0.03	0.16	18MC-MW05-Z1
SVOCs	PAH, HMW Total	mg/kg	11/16	0.02 - 20.84	3.63	0.02	20.84	18MC-MW05-Z1
SVOCs	PAH, LMW Total	mg/kg	11/16	0.01 - 2.17	0.6	0.01	2.17	18MC-MW05-Z1
SVOCs	PAH, Mixture	mg/kg	11/16	0.04 - 23	4.23	0.04	23	18MC-MW05-Z1
SVOCs	PHENANTHRENE	mg/kg	11/16	0.01 - 1.4	0.35	0.01	1.4	18MC-MW08-Z1
SVOCs	PYRENE	mg/kg	10/16	0.01 - 3.2	0.64	0.01	3.2	18MC-MW05-Z1
pH	PH	SU	2/2	7.26 - 7.71	7.49	7.26	7.71	SB-2

Table 5-8 Statistical Summary of Positive Results in Surface Soil Samples; White Transportation, Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection	Overall Range	Average Conc	Minimum Conc	Maximum Conc	Location of Max
			2010 Prior to	All Samples	2010 Prior to	2010 Prior to	2010 Prior to	2010 Prior to
Metals	ALUMINUM	mg/kg	12/12	1390 - 9880	3437	1390	9880	18MC-SS10-Z1
Metals	ANTIMONY	mg/kg	7/12	0.9 - 5.5	2.3	0.9	5.5	18MC-SS10-Z1
Metals	ARSENIC	mg/kg	12/12	5.5 - 30	13	5.5	30	WHITE-1
Metals	BARIUM	mg/kg	12/12	16 - 225	97	16	225	18MC-L02E-S05-Z1
Metals	BERYLLIUM	mg/kg	12/12	0.26 - 2.5	0.61	0.26	2.5	18MC-L03E-S05-Z1
Metals	CADMIUM	mg/kg	12/12	0.17 - 8.3	2.32	0.17	8.3	18MC-SS13-Z1
Metals	CALCIUM	mg/kg	12/12	1350 - 133000	33328	1350	133000	18MC-L03E-S04-Z1
Metals	CHROMIUM, TOTAL	mg/kg	12/12	4 - 411	52.9	4	411	18MC-L02E-S05-Z1
Metals	COBALT	mg/kg	12/12	1.9 - 9	5.7	1.9	9	18MC-L02E-S05-Z1
Metals	COPPER	mg/kg	12/12	13 - 222	83	13	222	18MC-L02E-S05-Z1
Metals	IRON	mg/kg	12/12	9100 - 74600	28326	9100	74600	WHITE-2
Metals	LEAD	mg/kg	12/12	5 - 3750	476	5	3750	18MC-L02E-S05-Z1
Metals	MAGNESIUM	mg/kg	12/12	122 - 37800	9226	122	37800	18MC-L03E-S04-Z1
Metals	MANGANESE	mg/kg	12/12	17 - 880	337	17	880	18MC-SS10-Z1
Metals	MERCURY	mg/kg	9/12	0.01 - 0.3	0.1	0.01	0.3	18MC-SS10-Z1
Metals	NICKEL	mg/kg	12/12	6 - 133	34	6	133	WHITE-1
Metals	POTASSIUM	mg/kg	12/12	103 - 1940	666	103	1940	18MC-L03E-S04-Z1
Metals	SELENIUM	mg/kg	6/12	0.6 - 3.2	1.7	0.6	3.2	WHITE-2
Metals	SILVER	mg/kg	7/12	0.16 - 1	0.32	0.16	1	18MC-SS10-Z1
Metals	SODIUM	mg/kg	12/12	49.8 - 199	116.6	49.8	199	18MC-SS10-Z1
Metals	VANADIUM	mg/kg	12/12	7 - 22	11	7	22	18MC-L03E-S05-Z1
Metals	ZINC	mg/kg	12/12	18 - 713	206	18	713	WHITE-2
PCB	PCB, Total	mg/kg	8/12	0.01 - 0.67	0.16	0.01	0.67	18MC-SS13-Z1
PCB	PCB-1248 (AROCLOR 1248)	mg/kg	1/12	0.01 - 0.01	0.01	0.01	0.01	18MC-L03E-S04-Z1
PCB	PCB-1254 (AROCLOR 1254)	mg/kg	1/12	0.02 - 0.02	0.02	0.02	0.02	18MC-L03E-S05-Z1
PCB	PCB-1260 (AROCLOR 1260)	mg/kg	7/12	0.018 - 0.67	0.18	0.018	0.67	18MC-SS13-Z1
Pesticides	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	mg/kg	2/6	0.0033 - 0.006	--	0.0033	0.006	18MC-L02E-S04-Z1
Pesticides	ALPHA ENDOSULFAN	mg/kg	1/6	0.001 - 0.001	--	0.001	0.001	18MC-L03E-S05-Z1
Pesticides	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	mg/kg	1/6	0.001 - 0.001	--	0.001	0.001	18MC-L03E-S05-Z1
Pesticides	BETA ENDOSULFAN	mg/kg	2/6	0.001 - 0.013	0.010	0.001	0.013	18MC-SS12-Z1
Pesticides	cis-Chlordane	mg/kg	1/6	0.018 - 0.018	0.020	0.018	0.018	18MC-L02E-S04-Z1
Pesticides	DDT, Total	mg/kg	5/6	0.01 - 0.278	0.080	0.010	0.278	18MC-L02E-S04-Z1
Pesticides	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	mg/kg	1/6	0.001 - 0.001	--	0.001	0.001	18MC-L03E-S05-Z1
Pesticides	DIELDRIN	mg/kg	3/6	0.004 - 0.014	0.010	0.004	0.014	18MC-L02E-S04-Z1
Pesticides	ENDOSULFAN SULFATE	mg/kg	1/6	0.002 - 0.002	--	0.002	0.002	18MC-L03E-S05-Z1
Pesticides	ENDRIN	mg/kg	0/6	--	--	--	--	

Table 5-8 Statistical Summary of Positive Results in Surface Soil Samples; White Transportation, Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection	Overall Range	Average Conc	Minimum Conc	Maximum Conc	Location of Max
			2010 Prior to	All Samples	2010 Prior to	2010 Prior to	2010 Prior to	2010 Prior to
Pesticides	GAMMA BHC (LINDANE)	mg/kg	1/6	0.003 - 0.003	--	0.003	0.003	18MC-SS12-Z1
Pesticides	HEPTACHLOR EPOXIDE	mg/kg	0/6	--	--	--	--	
Pesticides	METHOXYCHLOR	mg/kg	1/6	0.044 - 0.044	0.040	0.044	0.044	18MC-L02E-S04-Z1
Pesticides	P,P'-DDD	mg/kg	4/6	0.004 - 0.028	0.010	0.004	0.028	18MC-L02E-S04-Z1
Pesticides	P,P'-DDE	mg/kg	3/6	0.006 - 0.11	0.05	0.006	0.11	18MC-L02E-S04-Z1
Pesticides	P,P'-DDT	mg/kg	5/6	0.006 - 0.14	0.040	0.006	0.14	18MC-L02E-S04-Z1
Pesticides	Trans-Chlordane	mg/kg	1/6	0.015 - 0.015	0.020	0.015	0.015	18MC-L02E-S04-Z1
SVOCs	2-METHYLNAPHTHALENE	mg/kg	7/10	0.023 - 0.79	0.270	0.023	0.79	18MC-SS12-Z1
SVOCs	ACENAPHTHENE	mg/kg	1/10	0.017 - 0.017	0.020	0.017	0.017	18MC-L02E-S04-Z1
SVOCs	ACENAPHTHYLENE	mg/kg	3/10	0.01 - 0.23	0.100	0.01	0.23	18MC-SS10-Z1
SVOCs	ACETOPHENONE	mg/kg	1/10	0.02 - 0.02	0.02	0.02	0.02	18MC-SS12-Z1
SVOCs	ANTHRACENE	mg/kg	5/10	0.008 - 0.25	0.07	0.008	0.25	18MC-SS10-Z1
SVOCs	BENZO(A)ANTHRACENE	mg/kg	9/10	0.026 - 1.2	0.26	0.026	1.2	18MC-SS10-Z1
SVOCs	BENZO(A)PYRENE	mg/kg	9/10	0.017 - 1.1	0.25	0.017	1.1	18MC-SS10-Z1
SVOCs	BENZO(B)FLUORANTHENE	mg/kg	7/10	0.059 - 2	0.5	0.059	2	18MC-SS10-Z1
SVOCs	BENZO(G,H,I)PERYLENE	mg/kg	8/10	0.012 - 0.6	0.17	0.012	0.6	18MC-SS10-Z1
SVOCs	BENZO(K)FLUORANTHENE	mg/kg	3/10	0.03 - 0.65	0.27	0.03	0.65	18MC-SS10-Z1
SVOCs	BENZYL BUTYL PHTHALATE	mg/kg	1/10	0.06 - 0.06	0.06	0.06	0.06	18MC-SS12-Z1
SVOCs	BIPHENYL (DIPHENYL)	mg/kg	2/10	0.01 - 0.1	0.06	0.01	0.1	18MC-SS12-Z1
SVOCs	BIS(2-ETHYLHEXYL) PHTHALATE	mg/kg	1/10	0.03 - 0.03	0.03	0.03	0.03	WHITE-2B
SVOCs	CARBAZOLE	mg/kg	4/10	0.01 - 0.15	0.05	0.01	0.15	18MC-SS10-Z1
SVOCs	CHRYSENE	mg/kg	9/10	0.04 - 1.2	0.29	0.04	1.2	18MC-SS10-Z1
SVOCs	DIBENZ(A,H)ANTHRACENE	mg/kg	4/10	0.01 - 0.18	0.06	0.01	0.18	18MC-SS10-Z1
SVOCs	DIBENZOFURAN	mg/kg	4/10	0.01 - 0.19	0.07	0.01	0.19	18MC-SS12-Z1
SVOCs	DI-N-OCTYLPHTHALATE	mg/kg	2/10	0.01 - 0.02	0.01	0.01	0.02	18MC-SS12-Z1
SVOCs	FLUORANTHENE	mg/kg	10/10	0.02 - 2.3	0.46	0.02	2.3	18MC-SS10-Z1
SVOCs	FLUORENE	mg/kg	2/10	0.02 - 0.03	0.03	0.02	0.03	18MC-SS12-Z1
SVOCs	INDENO(1,2,3-C,D)PYRENE	mg/kg	7/10	0.02 - 0.51	0.16	0.02	0.51	18MC-SS10-Z1
SVOCs	NAPHTHALENE	mg/kg	6/10	0.02 - 0.35	0.14	0.02	0.35	WHITE-1B
SVOCs	PAH, HMW Total	mg/kg	10/10	0.15 - 11.24	2.22	0.15	11.24	18MC-SS10-Z1
SVOCs	PAH, LMW Total	mg/kg	10/10	0.13 - 1.69	0.66	0.13	1.69	18MC-SS12-Z1
SVOCs	PAH, Mixture	mg/kg	10/10	0.46 - 12.55	2.88	0.46	12.55	18MC-SS10-Z1
SVOCs	PHENANTHRENE	mg/kg	10/10	0.06 - 0.83	0.31	0.06	0.83	18MC-SS10-Z1
SVOCs	PYRENE	mg/kg	9/10	0.03 - 1.5	0.37	0.03	1.5	18MC-SS10-Z1

Table 5-9 Statistical Summary of Positive Results in Subsurface Soil Samples; White Transportation, Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection	Overall Range	Average Conc	Minimum Conc	Maximum Conc	Location of Max
			2010 Prior to	All Samples	2010 Prior to	2010 Prior to	2010 Prior to	2010 Prior to
Metals	ALUMINUM	mg/kg	23/23	1870 - 12300	5723	1870	12300	18MC-L03E-S05-Z2
Metals	ANTIMONY	mg/kg	9/23	0.6 - 4.1	1.5	0.6	4.1	18MC-SB07-Z1
Metals	ARSENIC	mg/kg	23/23	1.1 - 15	8	1.1	15	18MC-L02E-S05-Z2/D
Metals	BARIUM	mg/kg	23/23	20 - 415	95	20	415	18MC-L02E-S05-Z2
Metals	BERYLLIUM	mg/kg	23/23	0.25 - 1.4	0.46	0.25	1.4	18MC-SB10-Z1
Metals	CADMIUM	mg/kg	21/23	0.05 - 6.6	0.83	0.05	6.6	18MC-L02E-S05-Z2
Metals	CALCIUM	mg/kg	23/23	770 - 242000	57120	770	242000	18MC-SB10-Z2
Metals	CHROMIUM, TOTAL	mg/kg	23/23	5 - 39	12	5.0	39	18MC-L02E-S05-Z2/D
Metals	COBALT	mg/kg	23/23	2.2 - 10	5.8	2.2	10	18MC-SB08-Z2
Metals	COPPER	mg/kg	23/23	4.2 - 244	47.2	4.2	244	18MC-L02E-S05-Z2/D
Metals	IRON	mg/kg	23/23	8710 - 28000	15870	8710	28000	18MC-L02E-S05-Z2/D
Metals	LEAD	mg/kg	23/23	1.7 - 2590	247	1.7	2590	18MC-L02E-S05-Z2
Metals	MAGNESIUM	mg/kg	23/23	125 - 25300	8058	125	25300	18MC-L02E-S04-Z2
Metals	MANGANESE	mg/kg	23/23	11 - 1750	551	11	1750	18MC-MW12-Z2
Metals	MERCURY	mg/kg	20/23	0.01 - 0.49	0.13	0.01	0.49	18MC-SB10-Z2
Metals	NICKEL	mg/kg	23/23	6.1 - 42	16.05	6.1	42	18MC-MW10-Z1
Metals	POTASSIUM	mg/kg	23/23	128 - 2070	1134	128	2070	18MC-L03E-S04-Z2
Metals	SELENIUM	mg/kg	1/23	0.8 - 0.8	0.8	0.8	0.8	18MC-L02E-S05-Z2
Metals	SILVER	mg/kg	9/23	0.2 - 0.4	0.3	0.2	0.4	18MC-SB10-Z2
Metals	SODIUM	mg/kg	22/23	45.3 - 282	146.50	45.30	282	18MC-SB06-Z1
Metals	THALLIUM	mg/kg	1/23	0.9 - 0.9	0.9	0.9	0.9	18MC-SB08-Z2
Metals	VANADIUM	mg/kg	23/23	6.4 - 20.4	12.3	6.4	20.4	18MC-L03E-S05-Z2
Metals	ZINC	mg/kg	23/23	4 - 722	126	4	722	18MC-L02E-S05-Z2
PCB	PCB, Total	mg/kg	6/23	0.01 - 0.48	0.24	0.01	0.48	18MC-SB09-Z1
PCB	PCB-1254 (AROCLOR 1254)	mg/kg	2/23	0.01 - 0.04	0.03	0.01	0.04	18MC-SB08-Z1
PCB	PCB-1260 (AROCLOR 1260)	mg/kg	5/23	0.01 - 0.48	0.28	0.01	0.48	18MC-SB09-Z1
SVOCs	1,4-DIOXANE (P-DIOXANE)	mg/kg	3/6	0.99 - 2.8	2.000	0.99	2.8	18MC-MW11-Z1
SVOCs	2,4-DICHLOROPHENOL	mg/kg	3/6	0.011 - 0.11	0.070	0.011	0.11	18MC-MW13-Z1
SVOCs	2-CHLOROPHENOL	mg/kg	3/6	0.018 - 0.025	0.020	0.018	0.025	18MC-MW13-Z1
SVOCs	2-METHYLNAPHTHALENE	mg/kg	4/6	0.011 - 0.095	0.040	0.011	0.095	18MC-MW11-Z1
SVOCs	2-METHYLPHENOL (O-CRESOL)	mg/kg	3/6	0.047 - 0.13	0.080	0.047	0.13	18MC-MW11-Z1
SVOCs	4-METHYLPHENOL (P-CRESOL)	mg/kg	3/6	0.23 - 1	0.600	0.23	1	18MC-MW11-Z1
SVOCs	ACENAPHTHENE	mg/kg	1/6	0.011 - 0.011	0.010	0.011	0.011	18MC-MW11-Z1
SVOCs	ACENAPHTHYLENE	mg/kg	1/6	0.016 - 0.016	0.020	0.016	0.016	18MC-MW10-Z1
SVOCs	ACETOPHENONE	mg/kg	3/6	0.047 - 0.19	0.110	0.047	0.19	18MC-MW11-Z1
SVOCs	ANTHRACENE	mg/kg	3/6	0.021 - 0.036	0.030	0.021	0.036	18MC-MW10-Z2
SVOCs	BENZALDEHYDE	mg/kg	3/6	0.072 - 0.22	0.130	0.072	0.22	18MC-MW11-Z1

Table 5-9 Statistical Summary of Positive Results in Subsurface Soil Samples; White Transportation, Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection	Overall Range	Average Conc	Minimum Conc	Maximum Conc	Location of Max
			2010 Prior to	All Samples	2010 Prior to	2010 Prior to	2010 Prior to	2010 Prior to
SVOCs	BENZO(A)ANTHRACENE	mg/kg	4/6	0.014 - 0.11	0.060	0.014	0.11	18MC-MW10-Z2
SVOCs	BENZO(A)PYRENE	mg/kg	3/6	0.039 - 0.08	0.070	0.039	0.08	18MC-MW10-Z1
SVOCs	BENZO(B)FLUORANTHENE	mg/kg	3/6	0.044 - 0.13	0.090	0.044	0.13	18MC-MW10-Z1
SVOCs	BENZO(G,H,I)PERYLENE	mg/kg	1/6	0.023 - 0.023	0.020	0.023	0.023	18MC-MW11-Z1
SVOCs	BENZO(K)FLUORANTHENE	mg/kg	2/6	0.02 - 0.04	0.03	0.02	0.04	18MC-MW10-Z2
SVOCs	BIPHENYL (DIPHENYL)	mg/kg	2/6	0.033 - 0.09	0.06	0.033	0.09	18MC-MW12-Z2
SVOCs	BIS(2-ETHYLHEXYL) PHTHALATE	mg/kg	5/6	0.16 - 3.8	1.93	0.160	3.8	18MC-MW11-Z1
SVOCs	CARBAZOLE	mg/kg	0/6	--	--	--	--	
SVOCs	CHRYSENE	mg/kg	3/6	0.052 - 0.09	0.08	0.052	0.09	18MC-MW10-Z2
SVOCs	DIBENZ(A,H)ANTHRACENE	mg/kg	3/6	0.009 - 0.02	0.01	0.009	0.02	18MC-MW10-Z1
SVOCs	DIETHYL PHTHALATE	mg/kg	1/6	0.01 - 0.01	0.01	0.01	0.01	18MC-MW13-Z1
SVOCs	DI-N-OCTYLPHTHALATE	mg/kg	1/6	0.24 - 0.24	0.24	0.24	0.24	18MC-MW12-Z2
SVOCs	FLUORANTHENE	mg/kg	5/6	0.01 - 0.17	0.09	0.01	0.17	18MC-MW10-Z2
SVOCs	FLUORENE	mg/kg	4/6	0.01 - 0.02	0.01	0.01	0.02	18MC-MW10-Z2
SVOCs	INDENO(1,2,3-C,D)PYRENE	mg/kg	3/6	0.02 - 0.06	0.04	0.02	0.06	18MC-MW10-Z1
SVOCs	ISOPHORONE	mg/kg	3/6	0.03 - 0.09	0.07	0.03	0.09	18MC-MW13-Z1
SVOCs	NAPHTHALENE	mg/kg	3/6	0.01 - 0.08	0.04	0.01	0.08	18MC-MW11-Z1
SVOCs	PAH, HMW Total	mg/kg	5/6	0.03 - 0.78	0.41	0.03	0.78	18MC-MW10-Z2
SVOCs	PAH, LMW Total	mg/kg	6/6	0.01 - 0.38	0.14	0.01	0.38	18MC-MW11-Z1
SVOCs	PAH, Mixture	mg/kg	6/6	0.01 - 0.93	0.48	0.01	0.93	18MC-MW10-Z2
SVOCs	PHENANTHRENE	mg/kg	6/6	0.01 - 0.16	0.07	0.01	0.16	18MC-MW11-Z1
SVOCs	PHENOL	mg/kg	3/6	3.4 - 10	7.6	3.4	10	18MC-MW11-Z1
SVOCs	PYRENE	mg/kg	5/6	0.01 - 0.16	0.09	0.01	0.16	18MC-MW10-Z2

Table 5-10 Statistical Summary of Positive Results in Background Subsurface and Surface Soil Samples; Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection		Overall Range	Average Conc		Minimum Conc		Maximum Conc		Location of Max	
			Surface	Subsurface	All Samples	Surface	Subsurface	Surface	Subsurface	Surface	Subsurface	Surface	Subsurface
Metals	ALUMINUM	mg/kg	10/10	7/7	5890 - 21900	10486	12229	5890	6830	16900	21900	BG1-SS04-Z1	BG1-SS04-Z2
Metals	ANTIMONY	mg/kg	2/10	0/7	1.6 - 1.9	1.8	--	1.6	--	1.9	--	FS-SS12-S-O	
Metals	ARSENIC	mg/kg	10/10	7/7	3.2 - 13	8	8	3.2	3.9	13	12	BG1-SS03-Z1	BG1-SS01-Z2
Metals	BARIUM	mg/kg	10/10	7/7	34 - 189	81	90	34	34	189	178	BG1-SS06-Z1	BG1-SS04-Z2
Metals	BERYLLIUM	mg/kg	5/10	5/7	0.48 - 1	0.60	0.64	0.48	0.48	0.8	1	BG1-SS04-Z1	BG1-SS04-Z2
Metals	CADMIUM	mg/kg	8/10	7/7	0.2 - 0.5	0.41	0.29	0.3	0.2	0.5	0.4	BG1-SS06-Z1	BG1-SS04-Z2
Metals	CALCIUM	mg/kg	10/10	7/7	2220 - 156000	39563	47887	2220	2660	131000	156000	BG1-SS02-Z1/D	BG1-SS02-Z2
Metals	CHROMIUM, HEXAVALENT	mg/kg	1/2	/	0.3 - 0.3	0	--	0.3	--	0.3	--	BG1-SS01-Z1	
Metals	CHROMIUM, TOTAL	mg/kg	10/10	7/7	9.7 - 29	16.3	17.6	11	9.7	27	29	BG1-SS01-Z1	BG1-SS04-Z2
Metals	COBALT	mg/kg	10/10	7/7	5.2 - 16	8.0	9.2	5.4	5.2	14	16	BG1-SS04-Z1	BG1-SS04-Z2
Metals	COPPER	mg/kg	10/10	7/7	12 - 28	19	20	12	12	28	26	BG1-SS05-Z1	BG1-SS06-Z2
Metals	IRON	mg/kg	10/10	7/7	13400 - 34300	17560	21014	13400	13400	26300	34300	BG1-SS04-Z1	BG1-SS04-Z2
Metals	LEAD	mg/kg	10/10	7/7	12 - 109	54	39	23	12	102	109	BG1-SS01-Z1	BG1-SS01-Z2
Metals	MAGNESIUM	mg/kg	10/10	7/7	2680 - 26300	10161	10489	2680	2890	26300	25700	BG1-SS01-Z1	BG1-SS01-Z2
Metals	MANGANESE	mg/kg	10/10	7/7	191 - 1130	642	668	191	306	1130	992	BG1-SS06-Z1	BG1-SS04-Z2
Metals	MERCURY	mg/kg	10/10	7/7	0.03 - 0.4	0.12	0.10	0.04	0.03	0.3	0.4	BG1-SS02-Z1/D	BG1-SS01-Z2
Metals	NICKEL	mg/kg	10/10	7/7	12 - 32	21	20	15	12	26	32	BG1-SS01-Z1	BG1-SS04-Z2
Metals	POTASSIUM	mg/kg	10/10	7/7	790 - 2190	1518	1524	999	790	2190	2150	BG1-SS02-Z1	BG1-SS01-Z2
Metals	SELENIUM	mg/kg	7/10	4/7	0.7 - 1.7	1.4	0.9	0.9	0.7	1.7	1.0	BG1-SS07-Z1	BG1-SS03-Z2
Metals	SILVER	mg/kg	2/10	0/7	0.16 - 0	0.19	--	0.16	--	0	--	FS-SS11-S-O	
Metals	SODIUM	mg/kg	2/10	0/7	64.3 - 69.3	66.8	--	64.3	--	69.3	--	FS-SS11-S-O	
Metals	THALLIUM	mg/kg	2/10	0/7	2.3 - 2.9	2.6	--	2.3	--	2.9	--	FS-SS12-S-O	
Metals	VANADIUM	mg/kg	10/10	7/7	10 - 37	20	23	11	10	32	37	BG1-SS04-Z1	BG1-SS04-Z2
Metals	ZINC	mg/kg	10/10	7/7	40 - 404	103.19	52.33	58.3	40	404	65.1	FS-SS11-S-O	BG1-SS04-Z2
Pesticides	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	mg/kg	1/10	0/7	0.0008 - 0.0008	--	--	0.0008	--	0.0008	--	FS-SS11-S-O	
Pesticides	BETA ENDOSULFAN	mg/kg	1/10	0/7	0.0037 - 0.0037	--	--	0.0037	--	0.0037	--	BG1-SS03-Z1	
Pesticides	DDT, Total	mg/kg	9/10	4/7	0.001 - 0.03	0.01	--	0.0012	0.001	0.03	0.01	FS-SS11-S-O	BG1-SS01-Z2
Pesticides	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	mg/kg	1/10	0/7	0.001 - 0.001	--	--	0.0010	--	0.001	--	BG1-SS01-Z1	
Pesticides	DIELDRIN	mg/kg	2/10	0/7	0.005 - 0.17	0.090	--	0.005	--	0.17	--	FS-SS12-S-O	
Pesticides	ENDOSULFAN SULFATE	mg/kg	0/10	1/7	0.0002 - 0.0002	--	--	--	0.0002	--	0.0002		BG1-SS07-Z2
Pesticides	ENDRIN	mg/kg	1/10	1/7	0.0019 - 0.002	--	--	0.002	0.0019	0.002	0.002	BG1-SS05-Z1	BG1-SS03-Z2
Pesticides	ENDRIN ALDEHYDE	mg/kg	1/10	0/7	0.002 - 0.002	--	--	0.002	--	0.002	--	FS-SS11-S-O	
Pesticides	HEPTACHLOR	mg/kg	0/10	1/7	0.0003 - 0.0003	--	--	--	0.0003	--	0.0003		BG1-SS07-Z2
Pesticides	HEPTACHLOR EPOXIDE	mg/kg	1/10	0/7	0.001 - 0.001	--	--	0.001	--	0.001	--	BG1-SS02-Z1	
Pesticides	METHOXYCHLOR	mg/kg	2/10	0/7	0.003 - 0.005	--	--	0.003	--	0.005	--	FS-SS11-S-O	
Pesticides	P,P'-DDE	mg/kg	5/10	1/7	0.0044 - 0.014	0.010	--	0.007	0.0044	0.014	0.004	FS-SS11-S-O	BG1-SS01-Z2
Pesticides	P,P'-DDT	mg/kg	9/10	4/7	0.001 - 0.011	--	--	0.001	0.001	0.011	0.003	FS-SS11-S-O	BG1-SS01-Z2
Pesticides	Trans-Chlordane	mg/kg	1/10	0/7	0.003 - 0.003	--	--	0.003	--	0.003	--	BG1-SS01-Z1	
SVOCs	2-METHYLNAPHTHALENE	mg/kg	1/10	0/7	0.028 - 0.028	0.030	--	0.028	--	0.028	--	FS-SS11-S-O	
SVOCs	ACENAPHTHYLENE	mg/kg	2/10	0/7	0.028 - 0.038	0.030	--	0.028	--	0.038	--	BG1-SS02-Z1/D	

Table 5-10 Statistical Summary of Positive Results in Background Subsurface and Surface Soil Samples; Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection		Overall Range	Average Conc		Minimum Conc		Maximum Conc		Location of Max	
			Surface	Subsurface	All Samples	Surface	Subsurface	Surface	Subsurface	Surface	Subsurface	Surface	Subsurface
SVOCs	ANTHRACENE	mg/kg	4/10	2/7	0.03 - 0.12	0.060	0.040	0.03	0.036	0.12	0.042	BG1-SS02-Z1/D	BG1-SS01-Z2
SVOCs	BENZALDEHYDE	mg/kg	0/10	1/7	0.025 - 0.025	--	0.030	--	0.0250	--	0.025		BG1-SS01-Z2
SVOCs	BENZO(A)ANTHRACENE	mg/kg	7/10	3/7	0.019 - 0.54	0.200	0.130	0.02	0.019	0.54	0.19	BG1-SS02-Z1/D	BG1-SS01-Z2
SVOCs	BENZO(A)PYRENE	mg/kg	7/10	3/7	0.014 - 0.49	0.140	0.130	0.014	0.017	0.49	0.19	BG1-SS02-Z1/D	BG1-SS01-Z2
SVOCs	BENZO(B)FLUORANTHENE	mg/kg	8/10	3/7	0.023 - 0.65	0.220	0.170	0.028	0.023	0.65	0.25	BG1-SS02-Z1/D	BG1-SS01-Z2
SVOCs	BENZO(G,H,I)PERYLENE	mg/kg	3/10	2/7	0.044 - 0.17	0.090	0.060	0.044	0.051	0.17	0.063	BG1-SS02-Z1/D	BG1-SS01-Z2
SVOCs	BENZO(K)FLUORANTHENE	mg/kg	6/10	2/7	0.032 - 0.24	0.110	0.090	0.032	0.076	0.24	0.099	BG1-SS02-Z1/D	BG1-SS01-Z2
SVOCs	BENZYL BUTYL PHTHALATE	mg/kg	1/10	0/7	0.02 - 0.02	0.02	--	0.02	--	0.02	--	FS-SS12-S-O	
SVOCs	BIS(2-ETHYLHEXYL) PHTHALATE	mg/kg	8/10	2/7	0.021 - 0.19	0.03	0.12	0.021	0.04	0.05	0.19	FS-SS11-S-O	BG1-SS02-Z2
SVOCs	CARBAZOLE	mg/kg	1/10	1/7	0.016 - 0.02	0.02	0.02	0.02	0.016	0.02	0.02	FS-SS11-S-O	BG1-SS01-Z2
SVOCs	CHRYSENE	mg/kg	8/10	3/7	0.02 - 0.55	0.19	0.13	0.02	0.021	0.55	0.2	BG1-SS02-Z1/D	BG1-SS01-Z2
SVOCs	DIBENZ(A,H)ANTHRACENE	mg/kg	5/10	2/7	0.012 - 0.08	0.04	0.02	0.012	0.021	0.08	0.03	FS-SS11-S-O	BG1-SS01-Z2
SVOCs	DIBENZOFURAN	mg/kg	1/10	0/7	0.013 - 0.01	0.01	--	0.013	--	0.01	--	FS-SS11-S-O	
SVOCs	DI-N-BUTYL PHTHALATE	mg/kg	2/10	0/7	0.03 - 0.03	0.03	--	0.03	--	0.03	--	FS-SS11-S-O	
SVOCs	DI-N-OCTYLPHTHALATE	mg/kg	2/10	0/7	0.01 - 0.02	0.01	--	0.01	--	0.02	--	FS-SS12-S-O	
SVOCs	FLUORANTHENE	mg/kg	10/10	3/7	0.02 - 0.96	0.27	0.22	0.02	0.04	0.96	0.35	BG1-SS02-Z1/D	BG1-SS01-Z2
SVOCs	FLUORENE	mg/kg	1/10	0/7	0.02 - 0.02	0.02	--	0.02	--	0.02	--	FS-SS11-S-O	
SVOCs	INDENO(1,2,3-C,D)PYRENE	mg/kg	6/10	2/7	0.01 - 0.27	0.09	0.11	0.01	0.10	0.27	0.12	BG1-SS02-Z1/D	BG1-SS01-Z2
SVOCs	NAPHTHALENE	mg/kg	1/10	0/7	0.02 - 0.02	0.02	--	0.02	--	0.02	--	FS-SS11-S-O	
SVOCs	PAH, HMW Total	mg/kg	10/10	3/7	0.02 - 4.7	1.19	1.14	0.02	0.15	4.7	1.78	BG1-SS02-Z1/D	BG1-SS01-Z2
SVOCs	PAH, LMW Total	mg/kg	7/10	3/7	0.02 - 0.51	0.22	0.12	0.02	0.02	0.51	0.2	BG1-SS02-Z1/D	BG1-SS01-Z2
SVOCs	PAH, Mixture	mg/kg	10/10	3/7	0.02 - 5.21	1.34	1.26	0.02	0.17	5.21	1.98	BG1-SS02-Z1/D	BG1-SS01-Z2
SVOCs	PHENANTHRENE	mg/kg	7/10	3/7	0.02 - 0.35	0.17	0.1	0.02	0.02	0.35	0.16	BG1-SS02-Z1/D	BG1-SS01-Z2
SVOCs	PYRENE	mg/kg	8/10	3/7	0.03 - 0.77	0.23	0.18	0.03	0.03	0.77	0.29	BG1-SS02-Z1/D	BG1-SS01-Z2

Table 5-11 Statistical Summary of Positive Results in Groundwater Samples; Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection					Average Conc					Maximum Conc				
			R01 2003	R02 2007	R03 2009	R04 2014	R05 2015	R01 2003	R02 2007	R03 2009	R04 2014	R05 2015	R01 2003	R02 2007	R03 2009	R04 2014	R05 2015
Metals	ALUMINUM	UG/L	14/13	22/30	--	4/6	5/6	33395	258	--	339	13	226000	1590	--	1070	37
Metals	ANTIMONY	UG/L	8/13	18/30	--	0/6	2/6	21	6	--	--	4	65	8	--	--	5
Metals	ARSENIC	UG/L	13/13	0/30	--	2/6	3/6	29	--	--	5	2	67	--	--	6	4
Metals	BARIUM	UG/L	14/13	30/30	--	6/6	6/6	665	87	--	63	63	2570	315	--	105	130
Metals	BERYLLIUM	UG/L	14/13	1/30	--	0/6	0/6	2	0.1	--	--	--	13	0.12	--	--	--
Metals	CADMIUM	UG/L	6/13	13/30	--	0/6	1/6	7	0.4	--	--	0.2	23	4	--	--	0.18
Metals	CALCIUM	UG/L	14/13	30/30	--	6/6	6/6	301479	147177	--	157667	200000	507000	236000	--	280000	390000
Metals	CHROMIUM, TOTAL	UG/L	12/13	0/30	--	1/6	2/6	76	--	--	6	1	337	--	--	6	2
Metals	COBALT	UG/L	14/13	30/30	--	1/6	6/6	33	10	--	4	0.4	178	16	--	4	1
Metals	COPPER	UG/L	13/13	30/30	--	5/6	6/6	1077	7	--	3	4	6930	13	--	7	8
Metals	IRON	UG/L	14/13	30/30	--	6/6	4/6	64974	3265	--	1411	1323	251000	44900	--	5470	2700
Metals	LEAD	UG/L	14/13	3/30	--	1/6	6/6	995	9	--	12	1	5610	11	--	12	2
Metals	MAGNESIUM	UG/L	14/13	30/30	--	6/6	6/6	53036	30610	--	54500	44000	89700	53400	--	155000	68000
Metals	MANGANESE	UG/L	14/13	30/30	--	6/6	6/6	4823	605	--	184	119	16800	5730	--	886	510
Metals	MERCURY	UG/L	11/13	2/30	--	0/6	0/6	3	0.2	--	--	--	10	0.3	--	--	--
Metals	NICKEL	UG/L	14/13	30/30	--	6/6	5/6	89	6	--	5	1	416	14	--	12	3
Metals	POTASSIUM	UG/L	14/13	30/30	--	6/6	6/6	18631	5994	--	11168	12650	59500	14000	--	30300	42000
Metals	SELENIUM	UG/L	9/13	14/30	--	6/6	1/6	9	3	--	4	16	18	5	--	17	16
Metals	SILVER	UG/L	6/13	30/30	--	0/6	1/6	6	12	--	--	0.05	26	19	--	--	0.05
Metals	SODIUM	UG/L	14/13	30/30	--	6/6	6/6	253529	152827	--	287900	359167	774000	585000	--	546000	790000
Metals	THALLIUM	UG/L	9/13	0/30	--	0/6	1/6	11	--	--	--	1	24	--	--	--	1
Metals	VANADIUM	UG/L	13/13	21/30	--	1/6	1/6	48	1	--	4	0.3	204	3	--	4	0.3
Metals	ZINC	UG/L	14/13	8/30	--	6/6	5/6	2351	37	--	11	30	16800	79	--	42	58
PCB	PCB, Total	UG/L	1/13	0/15	--	0/6	0/6	8.1	--	--	--	--	8.1	--	--	--	--
PCB	PCB-1254 (AROCLOR 1254)	UG/L	1/13	0/15	--	0/6	0/6	8.1	--	--	--	--	8.1	--	--	--	--
Pesticides	ALPHA ENDOSULFAN	UG/L	0/13	0/15	--	1/6	0/6	--	--	--	0.009	--	--	--	--	0.009	--
Pesticides	cis-Chlordane	UG/L	0/13	0/15	--	1/6	0/6	--	--	--	0.004	--	--	--	--	0.004	--
Pesticides	DDT, Total	UG/L	0/13	0/15	--	2/6	0/6	--	--	--	0.016	--	--	--	--	0.029	--
Pesticides	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	UG/L	0/13	0/15	--	0/6	1/6	--	--	--	--	0.001	--	--	--	--	0.001
Pesticides	DIELDRIN	UG/L	0/13	0/15	--	2/6	0/6	--	--	--	0.007	--	--	--	--	0.009	--
Pesticides	ENDRIN KETONE	UG/L	1/13	0/15	--	0/6	0/6	0.021	--	--	--	--	0.021	--	--	--	--
Pesticides	GAMMA BHC (LINDANE)	UG/L	0/13	0/15	--	1/6	0/6	--	--	--	0.001	--	--	--	--	0.001	--
Pesticides	METHOXYCHLOR	UG/L	1/13	0/15	--	0/6	1/6	0.130	--	--	--	0.001	0.13	--	--	--	0.001
Pesticides	P,P'-DDD	UG/L	0/13	0/15	--	1/6	0/6	--	--	--	0.003	--	--	--	--	0.003	--
Pesticides	P,P'-DDT	UG/L	0/13	0/15	--	1/6	0/6	--	--	--	0.03	--	--	--	--	0.03	--
SVOCs	2,4,6-TRICHLOROPHENOL	UG/L	1/13	0/15	--	0/6	0/6	0.5	--	--	--	--	0.5	--	--	--	--
SVOCs	4-METHYLPHENOL (P-CRESOL)	UG/L	1/13	0/15	--	0/6	/	0.4	--	--	--	--	0.4	--	--	--	--
SVOCs	ACETOPHENONE	UG/L	0/13	1/15	--	0/6	0/6	--	0.52	--	--	--	--	0.52	--	--	--
SVOCs	BENZO(A)ANTHRACENE	UG/L	0/13	0/15	--	0/6	1/6	--	--	--	--	0.2	--	--	--	--	0.2

Table 5-11 Statistical Summary of Positive Results in Groundwater Samples; Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection					Average Conc					Maximum Conc				
			R01 2003	R02 2007	R03 2009	R04 2014	R05 2015	R01 2003	R02 2007	R03 2009	R04 2014	R05 2015	R01 2003	R02 2007	R03 2009	R04 2014	R05 2015
SVOCs	BENZO(A)PYRENE	UG/L	0/13	0/15	--	0/6	1/6	--	--	--	--	0.15	--	--	--	--	0.15
SVOCs	BENZO(B)FLUORANTHENE	UG/L	0/13	0/15	--	0/6	1/6	--	--	--	--	0.27	--	--	--	--	0.27
SVOCs	BENZO(G,H,I)PERYLENE	UG/L	0/13	1/15	--	0/6	1/6	--	0.58	--	--	0.26	--	0.58	--	--	0.26
SVOCs	BENZO(K)FLUORANTHENE	UG/L	0/13	0/15	--	0/6	1/6	--	--	--	--	0.3	--	--	--	--	0.3
SVOCs	BIS(2-ETHYLHEXYL) PHTHALATE	UG/L	10/13	0/15	--	3/6	0/6	1.01	--	--	0.51	--	3	--	--	0.68	--
SVOCs	CAPROLACTAM	UG/L	0/13	4/15	--	3/6	1/6	--	7.39	--	0.79	1.6	--	27	--	1.2	1.6
SVOCs	CHRYSENE	UG/L	0/13	0/15	--	0/6	1/6	--	--	--	--	0.27	--	--	--	--	0.27
SVOCs	DIBENZ(A,H)ANTHRACENE	UG/L	0/13	0/15	--	0/6	1/6	--	--	--	--	0.31	--	--	--	--	0.31
SVOCs	DIETHYL PHTHALATE	UG/L	1/13	0/15	--	0/6	1/6	0.8	--	--	--	0.33	0.8	--	--	--	0.33
SVOCs	DI-N-BUTYL PHTHALATE	UG/L	6/13	0/15	--	2/6	0/6	0.73	--	--	0.46	--	1	--	--	0.49	--
SVOCs	FLUORANTHENE	UG/L	0/13	7/15	--	0/6	0/6	--	2.04	--	--	--	--	7.7	--	--	--
SVOCs	INDENO(1,2,3-C,D)PYRENE	UG/L	0/13	0/15	--	0/6	1/6	--	--	--	--	0.27	--	--	--	--	0.27
SVOCs	NAPHTHALENE	UG/L	1/13	0/15	--	0/6	0/6	0.4	--	--	--	--	0.4	--	--	--	--
SVOCs	PAH, HMW Total	UG/L	0/13	8/15	--	0/6	1/6	--	4.44	--	--	2.03	--	20.28	--	--	2.03
SVOCs	PAH, LMW Total	UG/L	1/13	0/15	--	0/6	0/6	1.2	--	--	--	--	1.2	--	--	--	--
SVOCs	PAH, Mixture	UG/L	1/13	8/15	--	0/6	1/6	1.2	4.44	--	--	2.03	1.2	20.28	--	--	2.03
SVOCs	PENTACHLOROPHENOL	UG/L	1/13	0/15	--	0/6	0/6	200	--	--	--	--	200	--	--	--	--
SVOCs	PHENANTHRENE	UG/L	1/13	0/15	--	0/6	0/6	0.80	--	--	--	--	0.8	--	--	--	--
SVOCs	PHENOL	UG/L	0/13	1/15	--	0/6	0/6	--	3.20	--	--	--	--	3.2	--	--	--
SVOCs	PYRENE	UG/L	0/13	7/15	--	0/6	0/6	--	2.96	--	--	--	--	12	--	--	--
VOCs	1,1,1-TRICHLOROETHANE	UG/L	0/13	1/15	2/5	0/7	0/7	--	0.26	0.28	--	--	--	0.26	0.29	--	--
VOCs	1,1-DICHLOROETHANE	UG/L	0/13	1/15	0/5	0/7	0/7	--	0.4	--	--	--	--	0.4	--	--	--
VOCs	CARBON DISULFIDE	UG/L	0/13	2/15	0/5	0/7	0/7	--	0.58	--	--	--	--	0.64	--	--	--
VOCs	CHLOROFORM	UG/L	1/13	3/15	0/5	1/7	0/7	2	0.53	--	3.3	--	2	0.69	--	3.3	--
VOCs	CIS-1,2-DICHLOROETHYLENE	UG/L	0/13	3/15	4/5	3/7	2/7	--	13.64	10.06	5.48	16.50	--	33	29	11	17
VOCs	Tetrachloroethylene (PCE)	UG/L	0/13	1/15	0/5	1/7	1/7	--	1.4	--	1.5	2.8	--	1.4	--	1.5	2.8
VOCs	TOLUENE	UG/L	0/13	1/15	0/5	0/7	0/7	--	0.42	--	--	--	--	0.42	--	--	--
VOCs	TRANS-1,2-DICHLOROETHENE	UG/L	0/13	1/15	1/5	0/7	0/7	--	0.31	0.26	--	--	--	0.31	0.26	--	--
VOCs	TRICHLOROETHYLENE (TCE)	UG/L	0/13	4/15	3/5	2/7	1/7	--	5.54	6.87	4.96	14	--	20	19	9.4	14
VOCs	VINYL CHLORIDE	UG/L	0/13	2/15	1/5	0/7	0/7	--	0.46	0.51	--	--	--	0.52	0.51	--	--
Cyanide	CYANIDE	MG/L	1/13	--	--	--	--	0.02	--	--	--	--	0.02	--	--	--	--

Table 5-12 Statistical Summary of Positive Results in Sediment Samples; Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection		Overall Range	Average Conc		Minimum Conc		Maximum Conc		Location of Max	
			2010 Prior to	2014 OU2	All Samples	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2
Metals	ALUMINUM	mg/Kg	2/2	10/10	1690 - 10600	6750	7135	6670	1690	6830	10600	18MC-AS-S01-Z2	OU2-SED09-Z1
Metals	ANTIMONY	mg/Kg	1/2	6/10	0.7 - 18.9	0.8	7.6	0.8	0.7	0.8	18.9	18MC-AS-S01-Z1	OU2-SED07-Z1
Metals	ARSENIC	mg/Kg	147/147	10/10	1.2 - 50.5	8.0	5.0	1.2	2.8	50.5	7.0	SED-29B	OU2-SED08-Z1
Metals	BARIUM	mg/Kg	2/2	10/10	20 - 287	141	102	103	20	179	287	18MC-AS-S01-Z2	OU2-SED08-Z1
Metals	BERYLLIUM	mg/Kg	2/2	10/10	0.15 - 0.68	0.63	0.39	0.57	0.15	0.68	0.56	18MC-AS-S01-Z1	OU2-SED09-Z1
Metals	CADMIUM	mg/Kg	2/2	10/10	0.36 - 2.2	0.46	1.37	0.36	0.59	0.56	2.20	18MC-AS-S01-Z1	OU2-SED08-Z1
Metals	CALCIUM	mg/Kg	2/2	10/10	27000 - 188000	62150	54700	30500	27000	93800	188000	18MC-AS-S01-Z2	OU2-SED05-Z1
Metals	CHROMIUM, HEXAVALENT	mg/kg	--	1/1	0.5 - 0.5	--	0.5	--	0.5	--	0.5		OU2-SED02-Z1
Metals	CHROMIUM, TOTAL	mg/Kg	147/147	10/10	2.8 - 1200	44.17	32.22	2.80	19.00	1200.00	60.00	18MC-L14E-S02-Z2	OU2-SED03-Z1
Metals	COBALT	mg/Kg	2/2	10/10	2.5 - 10	7.9	6.8	7.2	2.5	8.6	10	18MC-AS-S01-Z2	OU2-SED09-Z1
Metals	COPPER	mg/Kg	147/147	10/10	16 - 54900	804	214	16	50	54900	570	18MC-L09-S03-Z1	OU2-SED07-Z1
Metals	IRON	mg/Kg	2/2	10/10	9600 - 26800	18800	19650	18500	9600	19100	26800	18MC-AS-S01-Z1	OU2-SED09-Z1
Metals	LEAD	mg/Kg	150/150	10/10	11 - 25400	807	399	11	59	25400	792	SED-7	OU2-SED07-Z1
Metals	MAGNESIUM	mg/Kg	2/2	10/10	7290 - 82400	12095	20700	7290	10000	16900	82400	18MC-AS-S01-Z2	OU2-SED05-Z1
Metals	MANGANESE	mg/Kg	2/2	10/10	290 - 2490	2040	464	1590	290	2490	789	18MC-AS-S01-Z2	OU2-SED05-Z1
Metals	MERCURY	mg/Kg	4/4	10/10	0.1 - 6.2	0.8	1.3	0.1	0.1	2.5	6.2	TRK-C-06-SD-A	OU2-SED07-Z1
Metals	NICKEL	mg/Kg	2/2	10/10	9 - 38	21	26	15	9	26	38	18MC-AS-S01-Z1	OU2-SED03-Z1
Metals	POTASSIUM	mg/Kg	2/2	10/10	368 - 1930	1655	1048	1380	368	1930	1460	18MC-AS-S01-Z2	OU2-SED06-Z1
Metals	SELENIUM	mg/Kg	1/2	3/10	0.4 - 1.1	0.88	0.8	0.88	0.4	0.88	1.1	18MC-AS-S01-Z1	OU2-SED03-Z1
Metals	SILVER	mg/Kg	1/2	10/10	0.2 - 2.4	0.2	1.2	0.2	0.4	0.2	2.4	18MC-AS-S01-Z1	OU2-SED03-Z1
Metals	SODIUM	mg/Kg	2/2	10/10	115 - 454	118	227	115	130	120	454	18MC-AS-S01-Z2	OU2-SED08-Z1
Metals	THALLIUM	mg/Kg	0/2	9/10	0.2 - 0.4	--	0.2	--	0.2	--	0.4		OU2-SED05-Z1
Metals	VANADIUM	mg/Kg	2/2	10/10	6 - 19	16	14	15	6	17	19	18MC-AS-S01-Z1	OU2-SED09-Z1
Metals	ZINC	mg/Kg	147/147	10/10	37 - 23600	1029	422	37	170	23600	766	SED-29B	OU2-SED08-Z1
PCB	PCB, Total	mg/kg	131/155	6/10	0.006 - 390	16	17	0.006	0.06	390	85	SED-34B	OU2-SED03-Z1
PCB	PCB-1242 (AROCLOR 1242)	mg/kg	12/155	0/10	0.02 - 46	11.07	--	0.020	--	46	--	18MC-L13-S03-Z1	
PCB	PCB-1248 (AROCLOR 1248)	mg/kg	107/155	6/10	0.004 - 280	11.53	10.49	0.004	0.06	280	56	SED-34B	OU2-SED03-Z1
PCB	PCB-1254 (AROCLOR 1254)	mg/kg	114/155	3/10	0.003 - 130	6.76	11.09	0.003	0.66	130	25	SED-22	OU2-SED03-Z1
PCB	PCB-1260 (AROCLOR 1260)	mg/kg	32/155	5/10	0.007 - 3.7	0.13	1.14	0.007	0.09	1	3.70	TRK-C-07-SD-A	OU2-SED03-Z1
Pesticides	ALDRIN	mg/kg	12/31	1/10	--	0.15	0.0001	0.001	0.0001	1.50	0.0001	18MC-L09-S02-Z1	OU2-SED02-Z1
Pesticides	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	mg/kg	16/31	1/10	0.0003 - 0.04	0.0098	0.0003	0.0008	0.0003	0.04	0.0003	18MC-L14E-S02-Z1	OU2-SED01-Z1
Pesticides	ALPHA ENDOSULFAN	mg/kg	14/31	3/10	0.0006 - 0.2	0.0313	0.0523	0.0006	0.0014	0.2	0.1500	18MC-L09-S02-Z1	OU2-SED03-Z1
Pesticides	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	mg/kg	7/31	3/10	0.0005 - 2.9	0.5464	0.6895	0.0091	0.0005	2.900	2.0000	18MC-L09-S02-Z1	OU2-SED03-Z1
Pesticides	BETA ENDOSULFAN	mg/kg	5/31	3/10	0.0004 - 0.03	0.0029	0.0123	0.0004	0.0007	0.01	0.03	18MC-L14W-S02-Z1	OU2-SED03-Z1
Pesticides	cis-Chlordane	mg/kg	7/31	2/10	0.002 - 0.052	0.0136	0.0277	0.0020	0.0034	0.02	0.0520	18MC-L05W-S02-Z2	OU2-SED03-Z1
Pesticides	DDT, Total	mg/kg	24/31	3/10	0.0013 - 1.39	0.1104	0.4788	0.0013	0.0154	0.85	1.39	18MC-L14E-S02-Z1	OU2-SED03-Z1
Pesticides	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	mg/kg	6/31	3/10	0.0005 - 0.64	0.0056	0.2214	0.0005	0.0031	0.0	0.640	18MC-L15E-S02-Z1	OU2-SED03-Z1

Table 5-12 Statistical Summary of Positive Results in Sediment Samples; Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection		Overall Range	Average Conc		Minimum Conc		Maximum Conc		Location of Max	
			2010 Prior to	2014 OU2	All Samples	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2
Pesticides	DIELDRIN	mg/kg	11/31	3/10	0.0013 - 1.8	0.2095	0.0383	0.0026	0.0013	1.8	0.11	18MC-L09-S02-Z1	OU2-SED03-Z1
Pesticides	ENDOSULFAN SULFATE	mg/kg	1/31	3/10	0.0009 - 0.08	0.0015	0.0294	0.0015	0.0009	0.002	0.08	18MC-L16E-S02-Z1	OU2-SED03-Z1
Pesticides	ENDRIN	mg/kg	4/31	3/10	0.0011 - 0.53	0.0086	0.1823	0.0011	0.0038	0.0180	0.5300	18MC-L14E-S02-Z2	OU2-SED03-Z1
Pesticides	ENDRIN ALDEHYDE	mg/kg	2/31	3/10	0.0005 - 0.091	0.0035	0.0312	0.0018	0.0005	0.0052	0.0910	18MC-L13-S02-Z1	OU2-SED03-Z1
Pesticides	ENDRIN KETONE	mg/kg	0/31	3/10	0.0006 - 0.065	--	0.0259	--	0.0006	--	0.065		OU2-SED03-Z1
Pesticides	GAMMA BHC (LINDANE)	mg/kg	16/31	3/10	0.0006 - 0.61	0.0687	0.1064	0.0006	0.0022	0.61	0.3	18MC-L09-S02-Z1	OU2-SED03-Z1
Pesticides	HEPTACHLOR	mg/kg	3/31	3/10	0.003 - 0.55	0.1764	0.1890	0.0091	0.0030	0.33	0.55	18MC-L14E-S02-Z1	OU2-SED03-Z1
Pesticides	HEPTACHLOR EPOXIDE	mg/kg	6/31	3/10	0.0011 - 0.43	0.0045	0.1518	0.0011	0.0025	0.01	0.43	18MC-L18-S02-Z1	OU2-SED03-Z1
Pesticides	METHOXYCHLOR	mg/kg	7/31	3/10	0.0016 - 0.52	0.0494	0.1964	0.0016	0.0083	0.12	0.52	18MC-L04W-S02-Z1	OU2-SED03-Z1
Pesticides	P,P'-DDD	mg/kg	5/31	3/10	0.0014 - 0.085	0.0188	0.0308	0.0014	0.0033	0.06	0.0850	18MC-L01E-S03-Z1	OU2-SED03-Z1
Pesticides	P,P'-DDE	mg/kg	13/31	2/10	0.0016 - 0.85	0.1786	0.0035	0.0016	0.0032	0.850	0.0037	18MC-L14E-S02-Z1	OU2-SED01-Z1
Pesticides	P,P'-DDT	mg/kg	15/31	3/10	0.001 - 1.3	0.0156	0.4456	0.001	0.0089	0.06	1.30	18MC-L01E-S03-Z1	OU2-SED03-Z1
Pesticides	Trans-Chlordane	mg/kg	8/31	3/10	0.005 - 0.8	0.1255	0.2047	0.005	0.0130	0.8	0.58	18MC-L09-S02-Z1	OU2-SED03-Z1
SVOCs	2-METHYLNAPHTHALENE	mg/kg	8/31	2/10	0.01 - 5.9	0.8079	0.2840	0.01	0.0980	5.90	0.47	18MC-L15E-S02-Z1	OU2-SED02-Z1
SVOCs	2-METHYLPHENOL (O-CRESOL)	mg/kg	1/31	1/3	0.16 - 0.22	0.2200	0.1600	0.2200	0.1600	0.2200	0.16	18MC-L15E-S02-Z1	OU2-SED02-Z1
SVOCs	3- AND 4- METHYLPHENOL (TOTAL)	mg/kg	--	3/3	0.76 - 3.7	--	1.89	--	0.76	--	3.70		OU2-SED01-Z1
SVOCs	4-METHYLPHENOL (P-CRESOL)	mg/kg	1/31	--	0.6 - 0.6	0.6	--	0.6	--	0.6	--	18MC-L15E-S02-Z1	
SVOCs	ACENAPHTHENE	mg/kg	16/31	3/10	--	0.90	0.94	0.01	0.17	12	2.30	18MC-L15E-S02-Z1	OU2-SED02-Z1
SVOCs	ACENAPHTHYLENE	mg/kg	19/31	3/10	0.01 - 0.87	0.17	0.23	0.01	0.15	0.87	0.27	18MC-L15E-S02-Z1	OU2-SED02-Z1
SVOCs	ANTHRACENE	mg/kg	25/31	5/10	0.01 - 23	1.31	1.11	0.01	0.04	23	4.10	18MC-L15E-S02-Z1	OU2-SED02-Z1
SVOCs	BENZALDEHYDE	mg/kg	2/31	0/3	0.03 - 0.04	0.04	--	0.03	--	0.04	--	18MC-L16E-S02-Z1	
SVOCs	BENZO(A)ANTHRACENE	mg/kg	31/31	8/10	0.01 - 43	2.39	1.98	0.01	0.12	43	9.10	18MC-L15E-S02-Z1	OU2-SED02-Z1
SVOCs	BENZO(A)PYRENE	mg/kg	29/31	8/10	0.01 - 34	1.97	2.02	0.01	0.13	34	9	18MC-L15E-S02-Z1	OU2-SED02-Z1
SVOCs	BENZO(B)FLUORANTHENE	mg/kg	30/31	8/9	0.01 - 46	2.72	2.68	0.01	0.15	46	12	18MC-L15E-S02-Z1	OU2-SED02-Z1
SVOCs	BENZO(G,H,I)PERYLENE	mg/kg	28/31	7/10	0.016 - 16	1.02	1.57	0.016	0.09	16	4.60	18MC-L15E-S02-Z1	OU2-SED02-Z1
SVOCs	BENZO(K)FLUORANTHENE	mg/kg	17/31	6/10	0 - 16	1.3	1.41	0.0	0.07	16	5.20	18MC-L15E-S02-Z1	OU2-SED02-Z1
SVOCs	BENZYL BUTYL PHTHALATE	mg/kg	1/31	1/3	0.073 - 0.4	0.07	0.40	0.073	0.40	0.07	0.40	18MC-L01E-S03-Z1	OU2-SED01-Z1
SVOCs	BIPHENYL (DIPHENYL)	mg/kg	1/31	0/3	1.4 - 1.4	1.4	--	1.4	--	1.4	--	18MC-L15E-S02-Z1	
SVOCs	BIS(2-ETHYLHEXYL) PHTHALATE	mg/kg	11/31	2/3	0.07 - 28	5.68	1.50	0.07	1.10	28	1.9	18MC-L18-S02-Z1	OU2-SED03-Z1
SVOCs	CARBAZOLE	mg/kg	21/31	3/3	0.011 - 15	0.88	1.13	0.011	0.39	15	2.3	18MC-L15E-S02-Z1	OU2-SED02-Z1
SVOCs	CHRYSENE	mg/kg	29/31	8/10	0.01 - 43	2.3	2.11	0.01	0.13	43	9.0	18MC-L15E-S02-Z1	OU2-SED02-Z1
SVOCs	DIBENZ(A,H)ANTHRACENE	mg/kg	25/31	3/10	0.01 - 5.2	0.3	0.84	0.01	0.57	5.2	1.3	18MC-L15E-S02-Z1	OU2-SED02-Z1
SVOCs	DIBENZOFURAN	mg/kg	13/31	2/3	0.01 - 10	0.9	0.89	0.01	0.18	10	1.6	18MC-L15E-S02-Z1	OU2-SED02-Z1
SVOCs	DIMETHYL PHTHALATE	mg/kg	1/31	0/3	1.4 - 1.4	1.4	--	1.4	--	1.4	--	18MC-L14E-S02-Z2	
SVOCs	DI-N-BUTYL PHTHALATE	mg/kg	1/31	0/3	2.9 - 2.9	2.9	--	2.9	--	2.9	--	18MC-L14E-S02-Z2	
SVOCs	DI-N-OCTYLPHTHALATE	mg/kg	7/31	0/3	0.008 - 0.7	0.1	--	0.008	--	0.7	--	18MC-L14E-S02-Z2	
SVOCs	FLUORANTHENE	mg/kg	31/31	10/10	0.015 - 120	6.01	3.9	0.015	0.11	120	22.00	18MC-L15E-S02-Z1	OU2-SED02-Z1

Table 5-12 Statistical Summary of Positive Results in Sediment Samples; Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection		Overall Range	Average Conc		Minimum Conc		Maximum Conc		Location of Max	
			2010 Prior to	2014 OU2	All Samples	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2
SVOCs	FLUORENE	mg/kg	15/31	3/10	0.02 - 13	1.10	1.28	0.02	0.23	13	3.20	18MC-L15E-S02-Z1	OU2-SED02-Z1
SVOCs	INDENO(1,2,3-C,D)PYRENE	mg/kg	27/31	7/10	0.018 - 16	1.03	1.42	0.018	0.08	16.00	4.60	18MC-L15E-S02-Z1	OU2-SED02-Z1
SVOCs	NAPHTHALENE	mg/kg	11/31	1/10	0.01 - 17	1.63	0.65	0.010	0.65	17	0.65	18MC-L15E-S02-Z1	OU2-SED02-Z1
SVOCs	N-NITROSODIPHENYLAMINE	mg/kg	1/31	0/3	0.032 - 0	0.03	--	0.032	--	0	--	18MC-L01W-S02-Z2	
SVOCs	PAH, HMW Total	mg/kg	31/31	10/10	0.049 - 407	21.38	17.15	0.049	0.21	407	94	18MC-L15E-S02-Z1	OU2-SED02-Z1
SVOCs	PAH, LMW Total	mg/kg	30/31	9/10	0.014 - 192	8.41	4.33	0.014	0.09	192	28	18MC-L15E-S02-Z1	OU2-SED02-Z1
SVOCs	PAH, Mixture	mg/kg	31/31	10/10	0.049 - 599	30	21	0.049	0.23	599	122	18MC-L15E-S02-Z1	OU2-SED02-Z1
SVOCs	PHENANTHRENE	mg/kg	30/31	9/10	0.011 - 120	5.37	2.76	0.011	0.09	120	17.0	18MC-L15E-S02-Z1	OU2-SED02-Z1
SVOCs	PHENOL	mg/kg	0/31	2/3	0.27 - 0.6	--	0.4	--	0.27	--	0.6		OU2-SED02-Z1
SVOCs	PYRENE	mg/kg	31/31	10/10	0.01 - 68	3.5	3.0	0.01	0.10	68	17	18MC-L15E-S02-Z1	OU2-SED02-Z1
TOC	TOTAL ORGANIC CARBON	mg/Kg	33/33	10/10	5390 - 193000	47296	77400	5390	54000	193000	110000	--	--

Table 5-13 Statistical Summary of Positive Results in Surface Water Samples; Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection		Overall Range	Average Conc		Minimum Conc		Maximum Conc		Location of Max	
			2010 Prior to	2014 OU2	All Samples	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2	2010 Prior to	2014 OU2
Metals	ALUMINUM	µg/l	1/1	3/3	110 - 245	245	127	245	110	245	150	FS-EMC01-SW-O	OU2-SW01
Metals	ARSENIC	µg/l	--	1/3	0.36 - 0.36	--	0.36	--	0.36	--	0.36		OU2-SW03
Metals	BARIUM	µg/l	1/1	3/3	27 - 34	28	30	28	27	28	34	FS-EMC01-SW-O	OU2-SW02
Metals	CALCIUM	µg/l	1/1	3/3	45000 - 73000	45000	64000	45000	54000	45000	73000	FS-EMC01-SW-O	OU2-SW02
Metals	CHROMIUM, TOTAL	µg/l	--	3/3	1 - 1.5	--	1.2	--	1	--	1.5		OU2-SW03
Metals	COBALT	µg/l	1/1	3/3	0.3 - 0.9	0.9	0.3	0.9	0.3	0.9	0.4	FS-EMC01-SW-O	OU2-SW03
Metals	COPPER	µg/l	1/1	3/3	1.9 - 2.5	1.9	2.3	1.9	2.1	1.9	2.5	FS-EMC01-SW-O	OU2-SW02
Metals	IRON	µg/l	1/1	3/3	287 - 340	287	323	287	290	287	340	FS-EMC01-SW-O	OU2-SW03
Metals	LEAD	µg/l	1/1	3/3	1.5 - 3.5	3.5	1.9	3.5	1.5	3.5	2.4	FS-EMC01-SW-O	OU2-SW02
Metals	MAGNESIUM	µg/l	1/1	3/3	10000 - 12000	10100	10667	10100	10000	10100	12000	FS-EMC01-SW-O	OU2-SW02
Metals	MANGANESE	µg/l	1/1	3/3	19 - 50	19	47	19	44	19	50	FS-EMC01-SW-O	BG1-SW01
Metals	NICKEL	µg/l	1/1	3/3	1.4 - 2.5	2.5	1.47	2.5	1.4	2.5	1.6	FS-EMC01-SW-O	OU2-SW03
Metals	POTASSIUM	µg/l	1/1	3/3	1990 - 2400	1990	2200	1990	2100	1990	2400	FS-EMC01-SW-O	OU2-SW02
Metals	SODIUM	µg/l	1/1	3/3	16600 - 35000	16600	29000	16600	26000	16600	35000	FS-EMC01-SW-O	OU2-SW02
Metals	THALLIUM	µg/l	--	2/3	0.09 - 0.22	--	0.16	--	0.09	--	0.22		OU2-SW01
Metals	VANADIUM	µg/l	1/1	2/3	0.41 - 1.3	0.99	0.86	0.99	0.41	0.99	1.3	FS-EMC01-SW-O	OU2-SW02
Metals	ZINC	µg/l	1/1	3/3	3.9 - 8	3.9	7.67	3.9	7.1	3.9	8	FS-EMC01-SW-O	OU2-SW03
Pesticides	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	µg/l	--	2/3	0.001 - 0.0012	--	--	--	0.0010	--	0.0012		OU2-SW03
Pesticides	BETA ENDOSULFAN	µg/l	--	3/3	0.0012 - 0.0017	--	--	--	0.0012	--	0.0017		OU2-SW01
Pesticides	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	µg/l	--	1/3	0.0004 - 0.0004	--	--	--	0.0004	--	0.0004		OU2-SW02
Pesticides	gamma-Chlordane	µg/l	--	2/3	0.0022 - 0.0027	--	--	--	0.0022	--	0.0027		OU2-SW01
SVOCs	BENZYL BUTYL PHTHALATE	µg/l	--	2/3	0.14 - 0.52	--	0.33	--	0.14	--	0.52		OU2-SW02
SVOCs	BIS(2-ETHYLHEXYL) PHTHALATE	µg/l	--	3/3	1.4 - 120	--	41.3	--	1.4	--	120		OU2-SW02

Table 5-14 Statistical Summary of Positive Results in Sediment Background Samples; Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection	Overall Range	Average Conc	Minimum Conc	Maximum Conc	Location of Max
			Background	Background	Background			
Metals	ALUMINUM	mg/Kg	7/7	5800 - 13000	8471	5800	13000	BG1-SED07
Metals	ANTIMONY	mg/Kg	2/7	0.2 - 1.2	0.7	0.2	1.2	BG1-SED04
Metals	ARSENIC	mg/Kg	7/7	3.1 - 6.7	4.8	3.1	6.7	BG1-SED05
Metals	BARIUM	mg/Kg	7/7	51 - 110	69	51	110	BG1-SED07
Metals	BERYLLIUM	mg/Kg	7/7	0.31 - 0.59	0.44	0.31	0.59	BG1-SED07
Metals	CADMIUM	mg/Kg	7/7	0.53 - 1.9	1.19	0.53	1.90	BG1-SED05
Metals	CALCIUM	mg/Kg	7/7	16000 - 24000	19714	16000	24000	BG1-SED05
Metals	CHROMIUM, TOTAL	mg/Kg	7/7	13 - 42	23.29	13.00	42.00	BG1-SED04
Metals	COBALT	mg/Kg	7/7	7.5 - 11	9.1	7.5	11	BG1-SED05
Metals	COPPER	mg/Kg	7/7	24 - 140	58	24	140.0	BG1-SED05
Metals	IRON	mg/Kg	7/7	14000 - 23000	18143	14000	23000	BG1-SED07
Metals	LEAD	mg/Kg	7/7	25 - 92	40	25	92	BG1-SED05
Metals	MAGNESIUM	mg/Kg	7/7	6400 - 11000	8629	6400	11000	BG1-SED05
Metals	MANGANESE	mg/Kg	7/7	330 - 1300	596	330	1300	BG1-SED07
Metals	MERCURY	mg/Kg	7/7	0.1 - 2	0.4	0.1	2	BG1-SED02
Metals	NICKEL	mg/Kg	7/7	16 - 35	23	16	35.00	BG1-SED04
Metals	POTASSIUM	mg/Kg	7/7	1200 - 2000	1414	1200	2000	BG1-SED07
Metals	SELENIUM	mg/Kg	7/7	1 - 1	1.1	1.0	1	BG1-SED07
Metals	SILVER	mg/Kg	7/7	0.1 - 0.51	0.2	0.1	0.51	BG1-SED05
Metals	SODIUM	mg/Kg	7/7	120 - 200	154	120	200.00	BG1-SED07
Metals	THALLIUM	mg/Kg	7/7	0.1 - 0.5	0.2	0.1	0.5	BG1-SED05
Metals	VANADIUM	mg/Kg	7/7	12 - 23	17	12	23.00	BG1-SED07
Metals	ZINC	mg/Kg	7/7	110 - 740	299	110	740	BG1-SED05
PCB	PCB, Total	mg/kg	6/7	0.02 - 0.34	0.10	0.02	0.34	BG1-SED04
PCB	PCB-1248 (AROCLOR 1248)	mg/kg	6/7	0.01 - 0.23	0.06	0.01	0.23	BG1-SED04
PCB	PCB-1254 (AROCLOR 1254)	mg/kg	5/7	0.01 - 0.11	0.04	0.01	0.11	BG1-SED04
PCB	PCB-1260 (AROCLOR 1260)	mg/kg	1/7	--	0.01	0.01	0.01	BG1-SED01
Pesticides	ALDRIN	mg/kg	1/7	--	0.0002	0.0002	0.0002	BG1-SED07
Pesticides	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	mg/kg	1/7	0.0004 - 0.0004	0.0004	0.0004	0.0004	BG1-SED02
Pesticides	BETA ENDOSULFAN	mg/kg	2/7	0.0001 - 0.0003	0.0002	0.0001	0.0003	BG1-SED05
Pesticides	cis-Chlordane	mg/kg	1/7	0.0004 - 0.0004	0.0004	0.0004	0.0004	BG1-SED04
Pesticides	DDT, Total	mg/kg	7/7	0.0002 - 0.011	0.0045	0.0002	0.011	BG1-SED04
Pesticides	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	mg/kg	6/7	0.0001 - 0.0014	0.0004	0.0001	0.0014	BG1-SED04
Pesticides	DIELDRIN	mg/kg	5/7	0.0001 - 0.0003	0.0002	0.0001	0.0003	BG1-SED04
Pesticides	ENDOSULFAN SULFATE	mg/kg	5/7	0.0001 - 0.0008	0.0004	0.0001	0.0008	BG1-SED05
Pesticides	ENDRIN	mg/kg	6/7	0.0002 - 0.002	0.0010	0.0002	0.0020	BG1-SED04
Pesticides	ENDRIN ALDEHYDE	mg/kg	4/7	0.0001 - 0.0005	0.0002	0.0001	0.0005	BG1-SED05
Pesticides	ENDRIN KETONE	mg/kg	4/7	0.0001 - 0.0011	0.0005	0.0001	0.0011	BG1-SED05
Pesticides	GAMMA BHC (LINDANE)	mg/kg	1/7	--	0.0002	0.0002	0.0002	BG1-SED02
Pesticides	HEPTACHLOR	mg/kg	2/7	0.0003 - 0.0009	0.0006	0.0003	0.0009	BG1-SED04

Table 5-14 Statistical Summary of Positive Results in Sediment Background Samples; Eighteenmile Creek RI OU2

Method	Parameters	Unit	Frequency of Detection	Overall Range	Average Conc	Minimum Conc	Maximum Conc	Location of Max
			Background	Background	Background			
Pesticides	HEPTACHLOR EPOXIDE	mg/kg	6/7	0.0003 - 0.0021	0.0007	0.0003	0.0021	BG1-SED04
Pesticides	METHOXYCHLOR	mg/kg	1/7	--	0.0005	0.0005	0.0005	BG1-SED01
Pesticides	P,P'-DDD	mg/kg	7/7	0.0001 - 0.0016	0.0009	0.0001	0.0016	BG1-SED04
Pesticides	P,P'-DDE	mg/kg	7/7	0.0001 - 0.0053	0.0027	0.0001	0.0053	BG1-SED04
Pesticides	P,P'-DDT	mg/kg	6/7	0.0001 - 0.0044	0.0012	0.0001	0.0044	BG1-SED04
Pesticides	Trans-Chlordane	mg/kg	6/7	0.0003 - 0.0024	0.0012	0.0003	0.0024	BG1-SED04
SVOCs	2-METHYLNAPHTHALENE	mg/kg	1/7	0.014 - 0.014	0.0140	0.0140	0.0140	BG1-SED01
SVOCs	ACENAPHTHENE	mg/kg	2/7	0.02 - 0.03	0.02	0.02	0.03	BG1-SED02
SVOCs	ACENAPHTHYLENE	mg/kg	4/7	0.03 - 0.14	0.08	0.03	0.14	BG1-SED02
SVOCs	ANTHRACENE	mg/kg	5/7	0.03 - 0.26	0.10	0.03	0.26	BG1-SED02
SVOCs	BENZALDEHYDE	mg/kg	1/7	--	0.06	0.06	0.06	BG1-SED01
SVOCs	BENZO(A)ANTHRACENE	mg/kg	6/7	0.07 - 0.67	0.24	0.07	0.67	BG1-SED02
SVOCs	BENZO(A)PYRENE	mg/kg	6/7	0.09 - 0.54	0.23	0.09	0.54	BG1-SED02
SVOCs	BENZO(B)FLUORANTHENE	mg/kg	6/7	0.13 - 0.69	0.29	0.13	0.69	BG1-SED02
SVOCs	BENZO(G,H,I)PERYLENE	mg/kg	6/7	0.12 - 0.45	0.20	0.12	0.45	BG1-SED02
SVOCs	BENZO(K)FLUORANTHENE	mg/kg	6/7	0.05 - 0.21	0.11	0.05	0.21	BG1-SED02
SVOCs	BIS(2-ETHYLHEXYL) PHTHALATE	mg/kg	5/7	0.06 - 0.96	0	0.06	0.96	BG1-SED05
SVOCs	CARBAZOLE	mg/kg	1/7	0.03 - 0.03	0	0.03	0.03	BG1-SED01
SVOCs	CHRYSENE	mg/kg	6/7	0.11 - 0.62	0.25	0.11	0.62	BG1-SED02
SVOCs	DIBENZ(A,H)ANTHRACENE	mg/kg	3/7	0.04 - 0.13	0.08	0.04	0.13	BG1-SED02
SVOCs	FLUORANTHENE	mg/kg	6/7	0.17 - 1.2	0.47	0.17	1.20	BG1-SED02
SVOCs	FLUORENE	mg/kg	2/7	0.04 - 0.09	0.06	0.04	0.09	BG1-SED02
SVOCs	INDENO(1,2,3-C,D)PYRENE	mg/kg	6/7	0.1 - 0.41	0.18	0.10	0.41	BG1-SED02
SVOCs	PAH, HMW Total	mg/kg	6/7	1.04 - 5.69	2.31	1.04	5.69	BG1-SED02
SVOCs	PAH, LMW Total	mg/kg	6/7	0.06 - 1.09	0.36	0.06	1.09	BG1-SED02
SVOCs	PAH, Mixture	mg/kg	6/7	1.09 - 6.78	2.67	1.09	6.78	BG1-SED02
SVOCs	PHENANTHRENE	mg/kg	6/7	0.06 - 0.57	0.19	0.06	0.57	BG1-SED02
SVOCs	PHENOL	mg/kg	1/7	0.02 - 0.02	0.02	0.02	0.02	BG1-SED01
SVOCs	PYRENE	mg/kg	6/7	0.13 - 0.77	0	0.13	0.77	BG1-SED02
TOC	TOTAL ORGANIC CARBON	mg/Kg	7/7	44000 - 90000	57857	44000	90000	BG1-SED02

Table 5-15 Forage Fish Composite Sample Data Summary, Eighteenmile Creek RI OU2

Analyte	OU2 Site			Background/Reference Area				OU2 Site Range	Reference Site Range
	Eighteenmile Creek, Lockport, NY			East Branch Eighteenmile Creek, Gasport, NY					
	Rock Bass			Bluegill	Pumpkinseed	Rock Bass	White Crappie		
	OU2-ROC-C01	OU2-ROC-C02	OU2-ROC-C03	BG1-BLU-C01	BG1-PUM-C01	BG1-ROC-C01	BG1-CRA-C01		
PERCENT LIPIDS	0.64	0.58	1.2	2.2	2.2	0.91	--	0.58 - 1.2	0.91 - 2.2
Metals (mg/kg wet weight)									
ALUMINUM	2.5	1.9	22	15	23	7.9	4.5	1.9 - 22	4.5 - 23
ARSENIC	0.14	0.24	0.35	0.16	0.19	0.27	0.2	0.14 - 0.35	0.16 - 0.27
BARIUM	0.5	1.2	2.8	1.1	0.85	2.5	1.8	0.5 - 2.8	0.85 - 2.5
CADMIUM	0.0088	0.0067	0.017	0.0069	0.0072	0.0076	0.0068	0.0067 - 0.017	0.0068 - 0.0076
CHROMIUM, TOTAL	0.16	0.25	0.79	0.2	0.37	0.19	1.3	0.16 - 0.79	0.19 - 1.3
COBALT	0.016	0.019	0.067	0.029	0.034	0.023	0.031	0.016 - 0.067	0.023 - 0.034
COPPER	0.49	0.76	5.5	0.75	1.3	1.7	2.1	0.49 - 5.5	0.75 - 2.1
IRON	16	18	79	40	63	26	48	16 - 79	26 - 63
LEAD	0.1	0.18	0.78	0.071	0.14	0.091	0.073	0.1 - 0.78	0.071 - 0.14
MANGANESE	1	1.7	7.9	10	7.6	4.6	6.2	1 - 7.9	4.6 - 10
MERCURY	0.18	0.077	0.064	0.046	0.046	0.052	0.05	0.064 - 0.18	0.046 - 0.052
NICKEL	0.039	0.041	0.47	0.089	0.12	0.077	0.51	0.039 - 0.47	0.077 - 0.51
SELENIUM	0.43	0.42	0.53	0.37	0.4	0.44	0.23	0.42 - 0.53	0.23 - 0.44
VANADIUM	0.33	0.42	0.46	0.43	0.43	0.4	0.4	0.33 - 0.46	0.4 - 0.43
ZINC	18	22	31	22	22	24	26	18 - 31	22 - 26
PAHs (mg/kg wet weight)									
ACENAPHTHENE	0.0051	0.0051	0.0051	0.0051	0.0051	0.005	0.005	0.0051 - 0.0051	0.005 - 0.0051
NAPHTHALENE	0.0046	0.0045	0.0046	0.0045	0.0045	0.0045	0.0045	0.0045 - 0.0046	0.0045 - 0.0045
PCBs (mg/kg wet weight)									
PCB, Total	0.46	0.151	0.83	0.07	0.11	0.113	0.155	0.151 - 0.83	0.07 - 0.155
PCB-1254 (AROCLOR 1254)	0.34	0.11	0.62	0.05	0.078	0.068	0.11	0.11 - 0.62	0.05 - 0.11
PCB-1260 (AROCLOR 1260)	0.12	0.041	0.21	0.02	0.032	0.045	0.045	0.041 - 0.21	0.02 - 0.045
Dioxins/Furans (mg/kg wet weight)									
2,3,7,8-TCDD TEQ (ND = 0)	2.9E-06	--	--	--	1.1E-06	--	--	2.9E-06	1.1E-06
Pesticides (mg/kg wet weight)									
ALDRIN	0.00035	0.00068	0.00043	0.000028	0.00029	0.00015	0.000046	0.00035 - 0.00068	0.000028 - 0.00029
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	0.000093	0.00011	0.000068	0.00016	0.00011	0.00015	0.000055	0.000068 - 0.00011	0.000055 - 0.00016
ALPHA ENDOSULFAN	0.00094	0.00054	0.0022	0.000058	0.00015	0.00023	0.000016	0.00054 - 0.0022	0.000016 - 0.00023
ALPHA-CHLORDANE	0.003	0.0027	0.0022	0.00057	0.00068	0.0011	0.000017	0.0022 - 0.003	0.000017 - 0.0011
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	0.00052	0.00037	0.00057	0.00022	0.00041	0.00033	0.000023	0.00037 - 0.00057	0.000023 - 0.00041
BETA ENDOSULFAN	0.00048	0.0006	0.00083	0.000035	0.00027	0.00014	0.000015	0.00048 - 0.00083	0.000015 - 0.00027
Chlordane; Gamma-	0.017	0.011	0.02	0.002	0.0023	0.0037	0.000016	0.011 - 0.02	0.000016 - 0.0037
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	0.00038	0.00031	0.00052	0.00021	0.00014	0.00016	0.000041	0.00031 - 0.00052	0.000041 - 0.00021
DIELDRIN	0.0025	0.002	0.0036	0.00049	0.00065	0.00075	0.000044	0.002 - 0.0036	0.000044 - 0.00075
ENDOSULFAN SULFATE	0.0037	0.0022	0.004	0.00047	0.00062	0.00089	0.00003	0.0022 - 0.004	0.00003 - 0.00089
ENDRIN	0.03	0.011	0.03	0.0025	0.0026	0.0045	0.00032	0.011 - 0.03	0.00032 - 0.0045
ENDRIN ALDEHYDE	0.0036	0.0012	0.0037	0.0002	0.0004	0.00039	0.000037	0.0012 - 0.0037	0.000037 - 0.0004
ENDRIN KETONE	0.0026	0.002	0.0028	0.00048	0.0006	0.00083	0.000066	0.002 - 0.0028	0.000066 - 0.00083
GAMMA BHC (LINDANE)	0.0011	0.0008	0.00079	0.00012	0.00023	0.0002	0.000015	0.00079 - 0.0011	0.000015 - 0.00023
HEPTACHLOR	0.00042	0.0006	0.00044	0.000018	0.00026	0.000062	0.000029	0.00042 - 0.0006	0.000018 - 0.00026
HEPTACHLOR EPOXIDE	0.01	0.0038	0.0067	0.0013	0.00099	0.0013	0.000064	0.0038 - 0.01	0.000064 - 0.0013
METHOXYCHLOR	0.01	0.0043	0.011	0.00019	0.00055	0.0002	0.000017	0.0043 - 0.011	0.000017 - 0.00055

Table 5-15 Forage Fish Composite Sample Data Summary, Eighteenmile Creek RI OU2

Analyte	OU2 Site			Background/Reference Area				OU2 Site Range	Reference Site Range
	Eighteenmile Creek, Lockport, NY			East Branch Eighteenmile Creek, Gasport, NY					
	Rock Bass			Bluegill	Pumpkinseed	Rock Bass	White Crappie		
	OU2-ROC-C01	OU2-ROC-C02	OU2-ROC-C03	BG1-BLU-C01	BG1-PUM-C01	BG1-ROC-C01	BG1-CRA-C01		
DDT, Total	0.067	0.043	0.106	0.037	0.024	0.030	0.015	0.0429 - 0.10614	0.01497 - 0.0366
P,P'-DDD	0.0018	0.0019	0.00074	0.0018	0.0022	0.0021	0.0015	0.00074 - 0.0019	0.0015 - 0.0022
P,P'-DDE	0.0097	0.02	0.0064	0.031	0.018	0.021	0.013	0.0064 - 0.02	0.013 - 0.031
P,P'-DDT	0.055	0.021	0.099	0.0038	0.0042	0.0072	0.00047	0.021 - 0.099	0.00047 - 0.0072
SVOCs (mg/kg wet weight)									
2-METHYLPHENOL (O-CRESOL)	0.019	0.018	0.019	0.018	0.018	0.018	0.018	0.018 - 0.019	0.018 - 0.018
BENZALDEHYDE	0.04	0.039	0.069	0.041	0.064	0.039	0.039	0.039 - 0.069	0.039 - 0.064
PENTACHLOROPHENOL	0.024	0.024	0.024	0.024	0.024	0.023	0.023	0.024 - 0.024	0.023 - 0.024
PHENOL	0.0063	0.0062	0.03	0.043	0.054	0.07	0.097	0.0062 - 0.03	0.043 - 0.097

Table 5-16 Game Fish Fillet Sample Data Summary, Eighteenmile Creek RI OU2

Analyte	OU2 Site										OU2 Site Range
	Eighteenmile Creek, Lockport, NY										
	Silver Redhorse			Smallmouth Bass				Walleye			
	OU2-RED-01	OU2-RED-02	OU2-RED-03	OU2-SMB-01	OU2-SMB-02	OU2-SMB-03	OU2-SMB-04	OU2-WAL-01	OU2-WAL-02	OU2-WAL-03	
PERCENT LIPIDS	0.73	0.31	0.86	--	--	0.19	--	0.88	1.0	0.91	0.19 - 1
Metals (mg/kg wet weight)											
ALUMINUM	2.9	1.1	2.6	--	2.0	1.3	1.5	1.4	0.98	0.83	0.83 - 2.9
ARSENIC	0.027	0.029	0.046	--	0.21	0.16	0.20	0.14	0.18	0.078	0.027 - 0.21
BARIUM	0.22	0.20	0.16	--	0.23	0.18	0.17	0.22	0.22	0.092	0.092 - 0.23
CADMIUM	0.0071	0.0068	0.0072	--	0.0070	0.0069	0.0069	0.0071	0.0074	0.0067	0.0067 - 0.0074
CHROMIUM, TOTAL	0.19	0.35	1.1	--	0.22	0.51	0.19	0.18	0.19	0.16	0.16 - 1.1
COBALT	0.010	0.011	0.021	--	0.014	0.011	0.0097	0.008	0.0086	0.0054	0.0054 - 0.021
COPPER	0.59	5.7	6.8	--	0.44	0.47	0.46	0.43	0.37	0.39	0.37 - 6.8
IRON	15	25	30	--	7.2	8.4	6.4	7.2	0.37	0.34	0.34 - 30
LEAD	0.031	0.14	0.22	--	0.054	0.060	0.33	0.030	0.024	0.018	0.018 - 0.33
MANGANESE	0.53	1.2	0.84	--	0.76	0.49	0.55	0.55	0.51	0.35	0.35 - 1.2
MERCURY	0.095	0.17	0.064	--	0.46	0.27	0.50	0.32	0.40	0.20	0.064 - 0.5
NICKEL	0.072	0.16	0.58	--	0.076	0.18	0.079	0.060	0.038	0.031	0.031 - 0.58
SELENIUM	0.34	0.20	0.32	--	0.56	0.47	0.56	0.39	0.52	0.26	0.2 - 0.56
VANADIUM	0.43	0.20	0.44	--	0.36	0.33	0.34	0.40	0.39	0.34	0.2 - 0.44
ZINC	12	6.8	12	--	13	8.7	8.4	6.7	8.2	5.7	5.7 - 13
PCBs (mg/kg wet weight)											
PCB, Total	0.181	0.034	0.0067	0.16	0.082	0.61	0.112	0.104	0.136	0.089	0.0067 - 0.61
PCB-1254 (AROCLOR 1254)	0.12	0.018	0.0044	0.11	0.058	0.46	0.084	0.060	0.080	0.060	0.0044 - 0.46
PCB-1260 (AROCLOR 1260)	0.061	0.016	0.0023	0.050	0.024	0.15	0.028	0.044	0.056	0.029	0.0023 - 0.15
Dioxins/Furans (mg/kg wet weight)											
2,3,7,8-TCDD TEQ (ND=0)	--	--	--	2.5E-06	--	--	--	--	--	--	2.5E-06
Pesticides (mg/kg wet weight)											
ALDRIN	0.000068	0.000024	0.000037	0.00039	0.000075	0.00031	0.00026	0.000074	0.000099	0.00024	0.000024 - 0.00039
ALPHA BHC	0.000014	0.000062	0.000028	0.000068	0.000068	0.000068	0.000068	0.000013	0.000030	0.000013	0.000013 - 0.000068
ALPHA ENDOSULFAN	0.00027	0.000018	0.000057	0.00030	0.00017	0.0033	0.00033	0.000087	0.00044	0.00041	0.000018 - 0.0033
ALPHA-CHLORDANE	0.0014	0.00016	0.00027	0.0011	0.00013	0.0037	0.00053	0.0010	0.0024	0.0029	0.00013 - 0.0037
BETA BHC	0.00054	0.000021	0.000047	0.00011	0.00015	0.00018	0.00011	0.000021	0.000059	0.000050	0.000021 - 0.00054
BETA ENDOSULFAN	0.00018	0.000025	0.000031	0.00030	0.000082	0.0020	0.00017	0.00018	0.00033	0.00042	0.000025 - 0.002
Chlordane; Gamma-	0.0039	0.0024	0.00099	0.0048	0.0019	0.039	0.0044	0.0019	0.0056	0.0050	0.00099 - 0.039
DELTA BHC	0.00025	0.000022	0.000067	0.00016	0.000064	0.0013	0.00013	0.000013	0.00032	0.00030	0.000013 - 0.0013
DIELDRIN	0.00081	0.00012	0.00015	0.00088	0.00041	0.0074	0.00075	0.00055	0.0012	0.0015	0.00012 - 0.0074
ENDOSULFAN SULFATE	0.00064	0.00015	0.00026	0.0016	0.00042	0.0090	0.00082	0.00079	0.0018	0.0018	0.00015 - 0.009
ENDRIN	0.0050	0.0014	0.0012	0.0067	0.0034	0.066	0.0077	0.0028	0.0073	0.0061	0.0012 - 0.066
ENDRIN ALDEHYDE	0.00030	0.00011	0.000066	0.00056	0.00041	0.0087	0.00085	0.00022	0.00064	0.00065	0.000066 - 0.0087
ENDRIN KETONE	0.00098	0.00032	0.00026	0.0017	0.00055	0.011	0.0008	0.00097	0.0017	0.0014	0.00026 - 0.011
GAMMA BHC (LINDANE)	0.000074	0.00016	0.00014	0.00084	0.00043	0.00081	0.00050	0.00019	0.00027	0.00022	0.000074 - 0.00084
HEPTACHLOR	0.00032	0.000018	0.000018	0.000093	0.000093	0.0016	0.000093	0.000018	0.00028	0.00036	0.000018 - 0.0016
HEPTACHLOR EPOXIDE	0.0015	0.00026	0.00031	0.0033	0.00066	0.016	0.0020	0.00067	0.0024	0.0018	0.00026 - 0.016
METHOXYCHLOR	0.0027	0.00092	0.00070	0.0028	0.0013	0.019	0.0019	0.0021	0.0052	0.000017	0.000017 - 0.019

Table 5-16 Game Fish Fillet Sample Data Summary, Eighteenmile Creek RI OU2

Analyte	OU2 Site										OU2 Site Range
	Eighteenmile Creek, Lockport, NY										
	Silver Redhorse			Smallmouth Bass				Walleye			
	OU2-RED-01	OU2-RED-02	OU2-RED-03	OU2-SMB-01	OU2-SMB-02	OU2-SMB-03	OU2-SMB-04	OU2-WAL-01	OU2-WAL-02	OU2-WAL-03	
DDT, Total	0.0183	0.00413	0.00478	0.02055	0.00739	0.1301	0.0172	0.013	0.0263	0.0221	0.00413 - 0.1301
P,P'-DDD	0.0017	0.00013	0.00048	0.00045	0.000055	0.0011	0.000055	0.0009	0.0013	0.0027	0.000055 - 0.0027
P,P'-DDE	0.0095	0.0016	0.0023	0.0061	0.00069	0.0090	0.0012	0.0076	0.013	0.018	0.00069 - 0.018
P,P'-DDT	0.0071	0.0024	0.0020	0.014	0.0067	0.12	0.016	0.0045	0.012	0.0014	0.0014 - 0.12
PAHs (mg/kg wet weight)											
ACENAPHTHENE	0.0051	0.0051	0.0051	--	--	0.0051	0.0051	0.022	0.0051	0.019	0.0051 - 0.022
NAPHTHALENE	0.0046	0.0046	0.0046	--	--	0.0046	0.0046	0.058	0.047	0.053	0.0046 - 0.058
SVOCs (mg/kg wet weight)											
2-METHYLPHENOL	0.019	0.019	0.019	--	--	0.019	0.019	0.028	0.018	0.033	0.018 - 0.033
BENZALDEHYDE	0.040	0.040	0.040	--	--	0.040	0.040	0.039	0.039	0.039	0.039 - 0.04
PENTACHLOROPHENOL	0.024	0.024	0.024	--	--	0.024	0.024	0.050	0.024	0.024	0.024 - 0.05
PHENOL	0.0063	0.0063	0.0063	--	--	0.0063	0.15	0.11	0.10	0.11	0.0063 - 0.15

Table 5-16 Game Fish Fillet Sample Data Summary, Eighteenmile Creek OU2, Lockport, New York.

Analyte	Background/Reference Area										Reference Site Range
	East Branch Eighteenmile Creek, Gasport, NY										
	Carp									LM Bass	
	BG1-CAR-01	BG1-CAR-02	BG1-CAR-03	BG1-CAR-04	BG1-CAR-05	BG1-CAR-06	BG1-CAR-07	BG1-CAR-08	BG1-CAR-09	BG1-LMB-01	
PERCENT LIPIDS	2.0	0.37	1.2	1.3	1.6	1.7	0.66	3.3	1.6	--	0.37 - 3.3
Metals (mg/kg wet weight)											
ALUMINUM	1.7	3.3	2.2	1.3	1.9	1.4	360	2.3	3.5	1.8	1.3 - 360
ARSENIC	0.030	0.061	0.042	0.026	0.081	0.045	1.9	0.11	0.046	0.058	0.026 - 1.9
BARIUM	0.23	0.65	0.20	0.22	0.32	0.12	9.7	0.90	0.26	0.18	0.12 - 9.7
CADMIUM	0.0068	0.0073	0.0069	0.0069	0.0071	0.0070	0.70	0.0069	0.0072	0.0071	0.0068 - 0.7
CHROMIUM, TOTAL	1.6	0.22	0.17	0.17	0.17	0.17	19	0.16	0.21	0.31	0.16 - 19
COBALT	0.052	0.099	0.013	0.0057	0.014	0.013	0.88	0.010	0.013	0.0071	0.0057 - 0.88
COPPER	0.38	0.37	0.94	0.57	1.1	0.94	50	0.59	1.7	1.1	0.37 - 50
IRON	23	16	20	13	19	18	1500	13	25	9.9	9.9 - 1500
LEAD	0.034	0.077	0.050	0.024	0.052	0.020	2.7	0.12	0.065	0.031	0.02 - 2.7
MANGANESE	1.2	2.3	1.3	0.54	1.9	0.59	50	4.1	1.0	0.60	0.54 - 50
MERCURY	0.053	0.057	0.048	0.057	0.085	0.093	0.065	0.10	0.073	0.16	0.048 - 0.16
NICKEL	0.11	0.064	0.045	0.024	0.034	0.036	3.9	0.048	0.035	0.088	0.024 - 3.9
SELENIUM	0.24	0.29	0.30	0.28	0.26	0.25	26	0.35	0.38	0.26	0.24 - 26
VANADIUM	0.40	0.35	0.32	0.39	0.38	0.37	41	0.35	0.36	0.43	0.32 - 41
ZINC	16	21	17	12	16	19	1400	20	22	9.0	9 - 1400
PCBs (mg/kg wet weight)											
PCB, Total	0.0252	0.0184	0.156	0.115	0.064	0.073	0.054	0.199	0.103	0.0062	0.0062 - 0.199
PCB-1254 (AROCLOR 1254)	0.017	0.0092	0.10	0.077	0.034	0.045	0.034	0.13	0.064	0.0041	0.0041 - 0.13
PCB-1260 (AROCLOR 1260)	0.0082	0.0092	0.056	0.038	0.030	0.028	0.020	0.069	0.039	0.0021	0.0021 - 0.069
Dioxins/Furans (mg/kg wet weight)											
2,3,7,8-TCDD TEQ (ND=0)	--	--	--	--	--	--	--	--	--	5.20E-07	5.2E-07
Pesticides (mg/kg wet weight)											
ALDRIN	0.000044	0.000087	0.000045	0.000037	0.000015	0.000066	0.000036	0.00007	0.000058	0.000049	0.000015 - 0.000087
ALPHA BHC	0.00011	0.000014	0.000013	0.000024	0.000024	0.000028	0.000014	0.00020	0.000043	0.000013	0.000013 - 0.0002
ALPHA ENDOSULFAN	0.00013	0.000036	0.00028	0.00018	0.000054	0.00010	0.00012	0.00036	0.00013	0.000015	0.000015 - 0.00036
ALPHA-CHLORDANE	0.0010	0.00020	0.0014	0.00075	0.00058	0.00053	0.00055	0.0020	0.00062	0.000041	0.000041 - 0.002
BETA BHC	0.00051	0.00017	0.000052	0.00034	0.000021	0.000021	0.000021	0.000061	0.000063	0.000047	0.000021 - 0.00051
BETA ENDOSULFAN	0.00011	0.00002	0.00016	0.00010	0.00007	0.00011	0.000084	0.00031	0.000085	0.000014	0.000014 - 0.00031
Chlordane; Gamma-	0.0023	0.00062	0.0043	0.0027	0.0019	0.0018	0.0019	0.0057	0.0022	0.000016	0.000016 - 0.0057
DELTA BHC	0.00032	0.000025	0.00023	0.000013	0.00017	0.000013	0.000061	0.00036	0.000013	0.000013	0.000013 - 0.00036
DIELDRIN	0.00054	0.000093	0.00070	0.00043	0.00029	0.00038	0.00032	0.0012	0.00040	0.000033	0.000033 - 0.0012
ENDOSULFAN SULFATE	0.00056	0.000098	0.00087	0.00059	0.00049	0.00051	0.00047	0.0013	0.00061	0.000064	0.000064 - 0.0013
ENDRIN	0.0026	0.00074	0.0044	0.0031	0.0026	0.0026	0.0025	0.0069	0.0032	0.00035	0.00035 - 0.0069
ENDRIN ALDEHYDE	0.00023	0.000055	0.00036	0.00028	0.00016	0.00017	0.00022	0.00073	0.00023	0.000017	0.000017 - 0.00073
ENDRIN KETONE	0.00063	0.00020	0.0010	0.00080	0.00055	0.00052	0.00052	0.0015	0.00076	0.000084	0.000084 - 0.0015
GAMMA BHC (LINDANE)	0.00022	0.00015	0.00005	0.00016	0.00013	0.000015	0.000015	0.00019	0.000014	0.00019	0.000014 - 0.00022
HEPTACHLOR	0.000018	0.000054	0.000018	0.000019	0.000018	0.000043	0.000039	0.000069	0.000018	0.000018	0.000018 - 0.000069
HEPTACHLOR EPOXIDE	0.00082	0.00018	0.0016	0.00098	0.00064	0.00045	0.00055	0.0018	0.00072	0.00010	0.0001 - 0.0018
METHOXYCHLOR	0.00024	0.000051	0.00057	0.00036	0.00019	0.00022	0.00023	0.00071	0.00020	0.000017	0.000017 - 0.00071

Table 5-16 Game Fish Fillet Sample Data Summary, Eighteenmile Creek OU2, Lockport, New York.

Analyte	Background/Reference Area										Reference Site Range
	East Branch Eighteenmile Creek, Gasport, NY										
	Carp									LM Bass	
	BG1-CAR-01	BG1-CAR-02	BG1-CAR-03	BG1-CAR-04	BG1-CAR-05	BG1-CAR-06	BG1-CAR-07	BG1-CAR-08	BG1-CAR-09	BG1-LMB-01	
DDT, Total	0.0337	0.00523	0.05297	0.0314	0.0701	0.051	0.025	0.1031	0.0711	0.00182	0.00182 - 0.1031
P,P'-DDD	0.0032	0.00043	0.0057	0.0032	0.0024	0.0020	0.0021	0.0071	0.0024	0.00015	0.00015 - 0.0071
P,P'-DDE	0.026	0.0037	0.047	0.023	0.064	0.045	0.019	0.085	0.064	0.0013	0.0013 - 0.085
P,P'-DDT	0.0045	0.0011	0.00027	0.0052	0.0037	0.0040	0.0039	0.011	0.0047	0.00037	0.00027 - 0.011
PAHs (mg/kg wet weight)											
ACENAPHTHENE	0.0052	0.0051	0.0051	0.0051	0.0051	0.005	0.0051	0.005	0.005	0.0051	0.005 - 0.0052
NAPHTHALENE	0.0045	0.0045	0.0046	0.0045	0.0045	0.0045	0.0046	0.0045	0.0045	0.0046	0.0045 - 0.0046
SVOCs (mg/kg wet weight)											
2-METHYLPHENOL	0.018	0.018	0.019	0.018	0.018	0.018	0.019	0.018	0.018	0.019	0.018 - 0.019
BENZALDEHYDE	0.039	0.039	0.043	0.039	0.061	0.060	0.039	0.039	0.039	0.040	0.039 - 0.061
PENTACHLOROPHENOL	0.023	0.024	0.024	0.024	0.024	0.023	0.024	0.023	0.023	0.024	0.023 - 0.024
PHENOL	0.0061	0.0062	0.0063	0.0062	0.0062	0.0061	0.055	0.038	0.0061	0.33	0.0061 - 0.33

Table 5-Series Key; Eighteenmile Creek RI OU2

Abbreviations		Values		Chemicals	
BTV	= Background threshold value	ug/L	= Micrograms per liter	PAHs	= Polycyclic aromatic hydrocarbon
Conc	= Concentration	mg/kg	= Milligrams per kilogram	PCB	= Polychlorinated biphenyl
HMW	= High molecular weight	mg/L	= Milligrams per liter	SVOCs	= Semi-volatile organic compounds
HW	= Hawkins Wixley	OU2	= Operable Unit 2	TCDD	= Tetrachlorodibenzo-p-dioxin
KM	= Kaplan Meier	--	= Not available	TCDF	= Tetrachlorodibenzofuran
LMW	= Low molecular weight			TOC	= Total organic carbon
OU2	= Operable Unit 2			VOCs	= Volatile organic compounds
Ndet	= Number of detects				
Nobs	= Number of observations				
R01	= Round 1				
RI	= Remedial Investigation				
RPD	= Relative percent difference				
SD	= Standard deviation				
SRI	= Supplemental Remedial Investigation				
TEQ	= Toxic Equivalent				
UPL	= Upper predication limit				
USL	= Upper Simulateous Limit				

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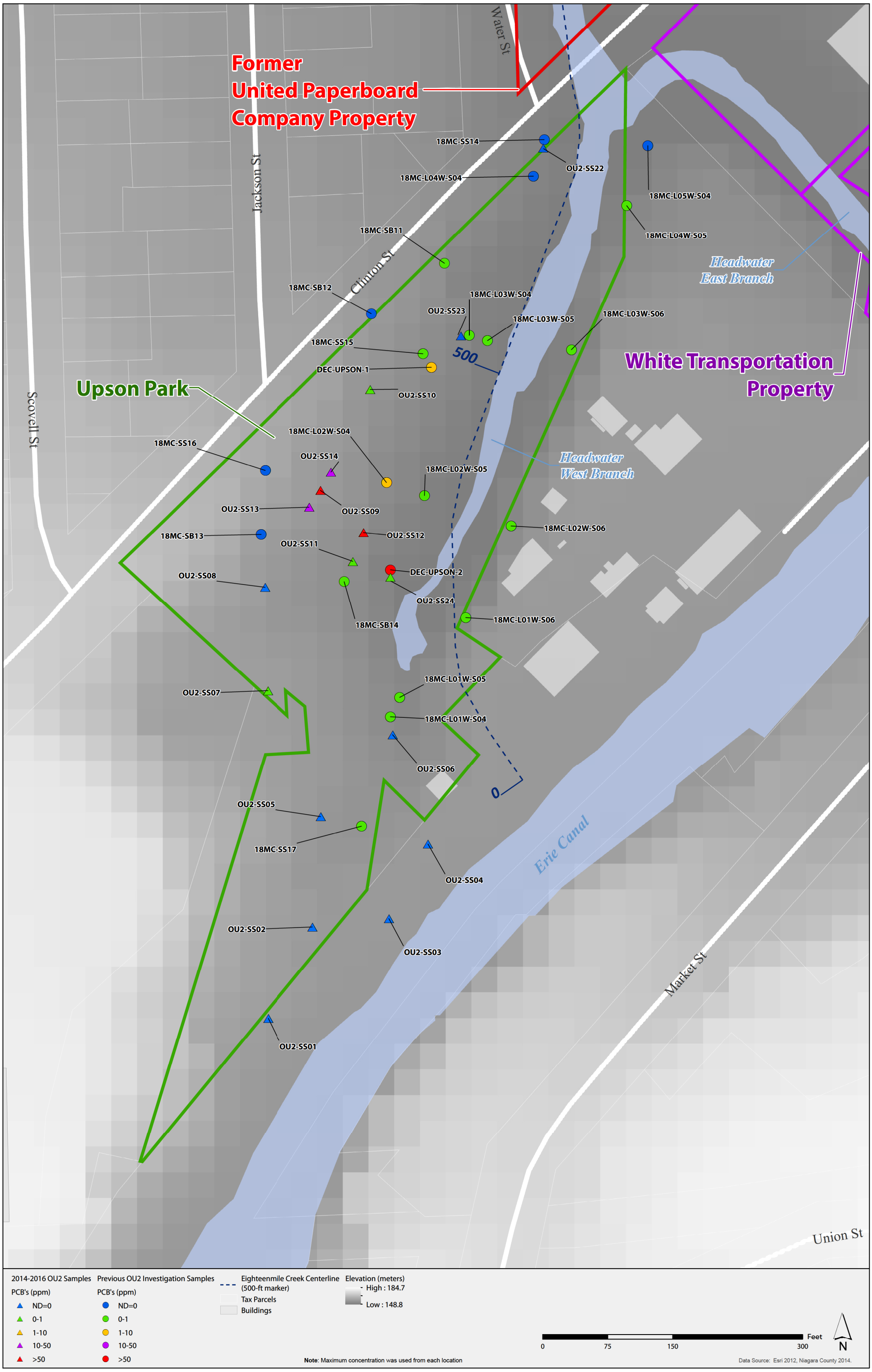

Figure 5-1
Soil Distribution PCBs, Upson Park, Eighteenmile Creek RI OU2

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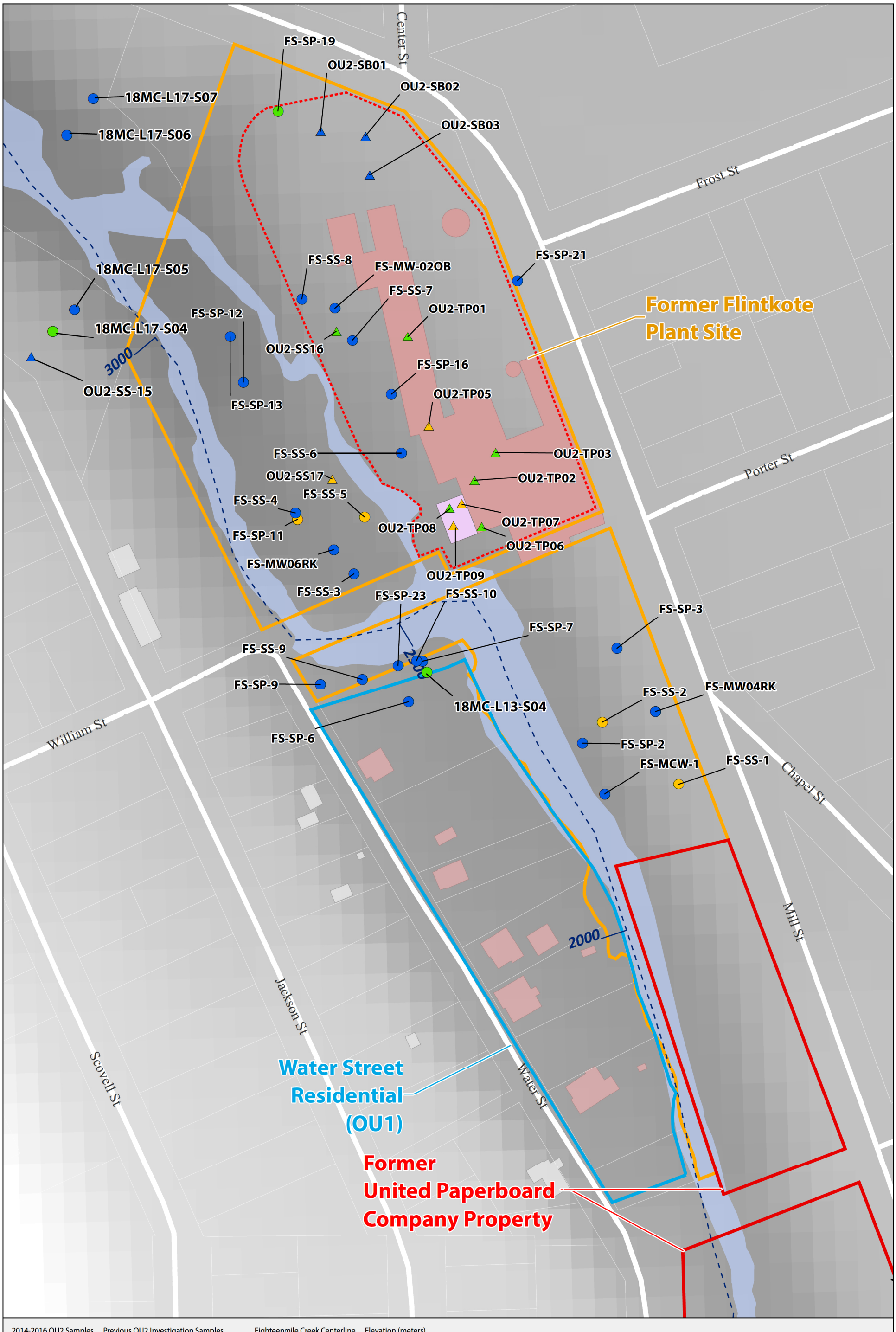

Figure 5-2
Soil Distribution PCBs, Former Flintkote Property, Eighteenmile Creek RI OU2

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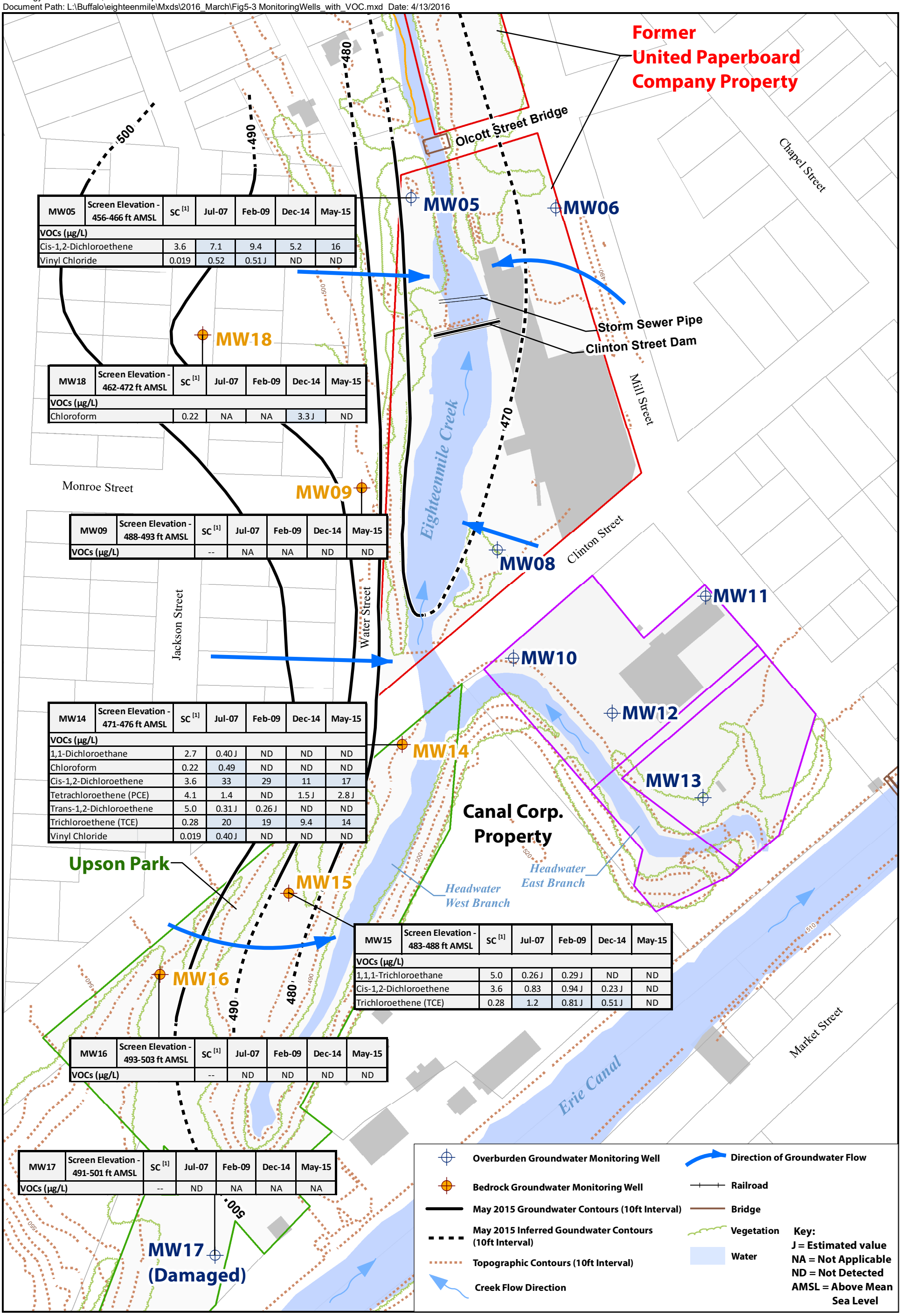


MW05	Screen Elevation - 456-466 ft AMSL	SC [1]	Jul-07	Feb-09	Dec-14	May-15
VOCs (µg/L)						
Cis-1,2-Dichloroethene		3.6	7.1	9.4	5.2	16
Vinyl Chloride		0.019	0.52	0.51 J	ND	ND

MW18	Screen Elevation - 462-472 ft AMSL	SC [1]	Jul-07	Feb-09	Dec-14	May-15
VOCs (µg/L)						
Chloroform		0.22	NA	NA	3.3 J	ND

MW09	Screen Elevation - 488-493 ft AMSL	SC [1]	Jul-07	Feb-09	Dec-14	May-15
VOCs (µg/L)		--	NA	NA	ND	ND

MW14	Screen Elevation - 471-476 ft AMSL	SC [1]	Jul-07	Feb-09	Dec-14	May-15
VOCs (µg/L)						
1,1-Dichloroethane		2.7	0.40 J	ND	ND	ND
Chloroform		0.22	0.49	ND	ND	ND
Cis-1,2-Dichloroethene		3.6	33	29	11	17
Tetrachloroethene (PCE)		4.1	1.4	ND	1.5 J	2.8 J
Trans-1,2-Dichloroethene		5.0	0.31 J	0.26 J	ND	ND
Trichloroethene (TCE)		0.28	20	19	9.4	14
Vinyl Chloride		0.019	0.40 J	ND	ND	ND

MW15	Screen Elevation - 483-488 ft AMSL	SC [1]	Jul-07	Feb-09	Dec-14	May-15
VOCs (µg/L)						
1,1,1-Trichloroethane		5.0	0.26 J	0.29 J	ND	ND
Cis-1,2-Dichloroethene		3.6	0.83	0.94 J	0.23 J	ND
Trichloroethene (TCE)		0.28	1.2	0.81 J	0.51 J	ND

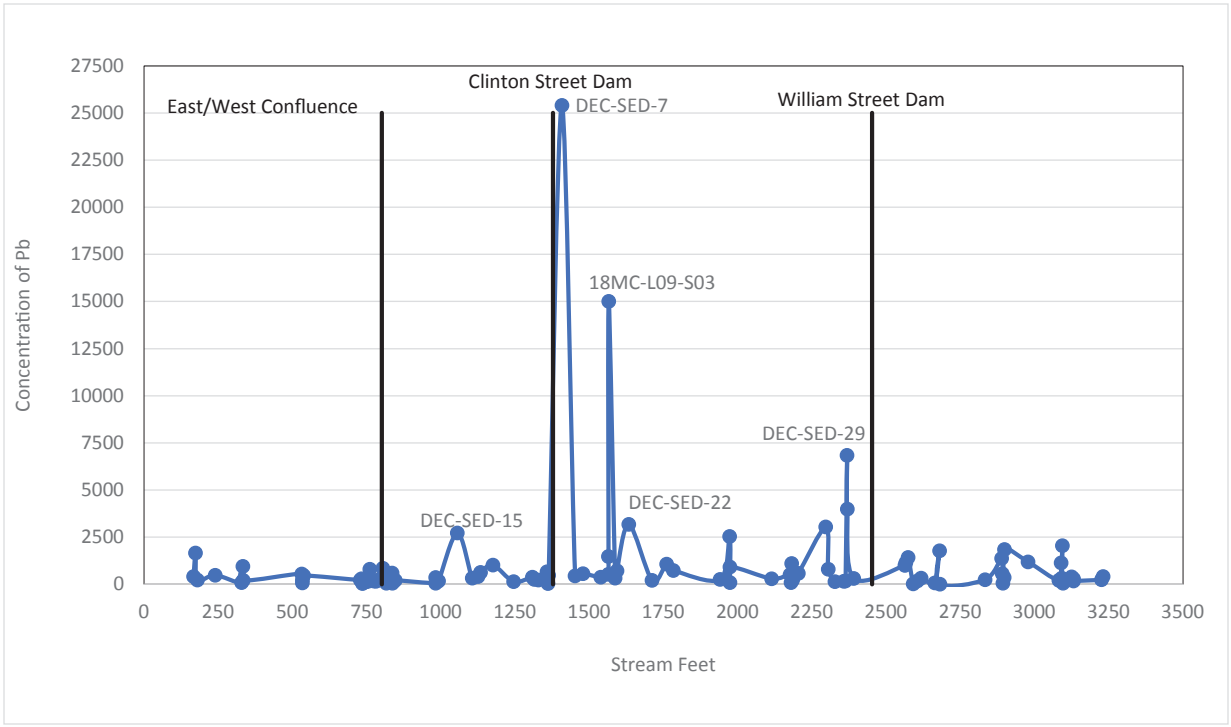
MW16	Screen Elevation - 493-503 ft AMSL	SC [1]	Jul-07	Feb-09	Dec-14	May-15
VOCs (µg/L)		--	ND	ND	ND	ND

MW17	Screen Elevation - 491-501 ft AMSL	SC [1]	Jul-07	Feb-09	Dec-14	May-15
VOCs (µg/L)		--	ND	NA	NA	NA

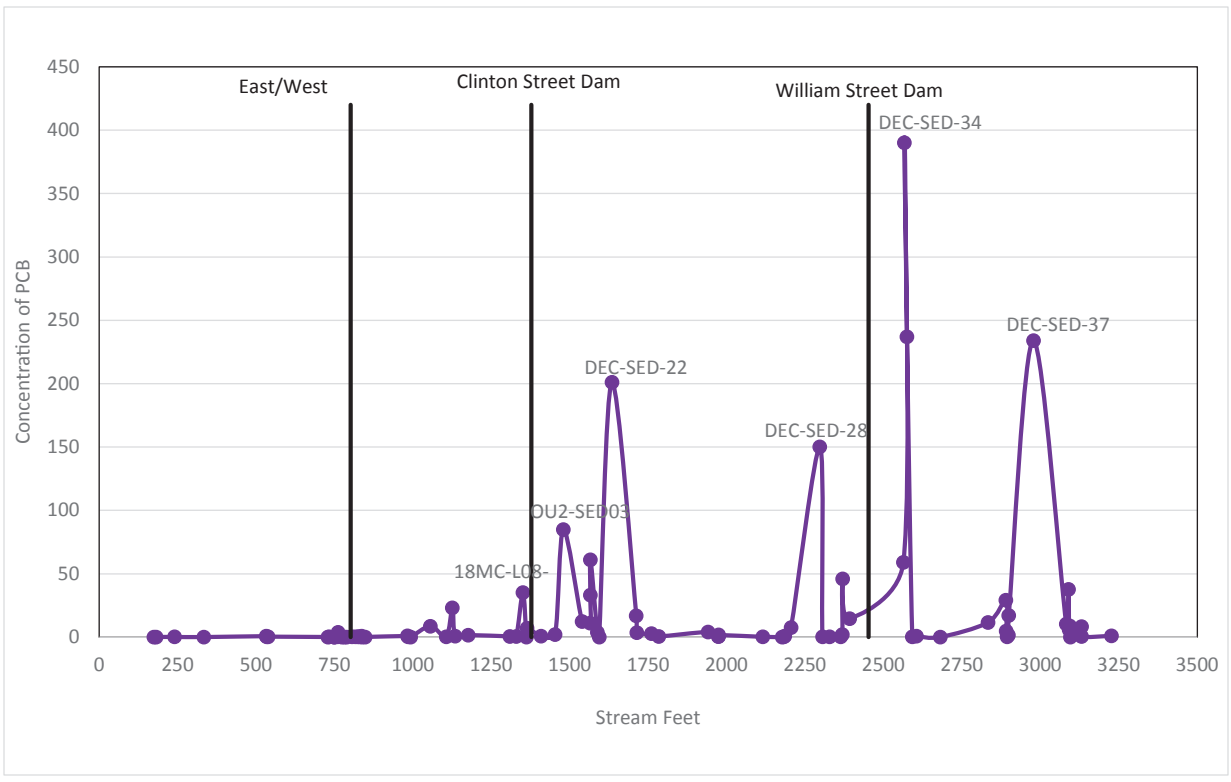
Figure 5-3 Monitoring Well Locations with VOC Results, Eighteenmile Creek RI OU2

Notes for Groundwater Standards and Guidance Values:

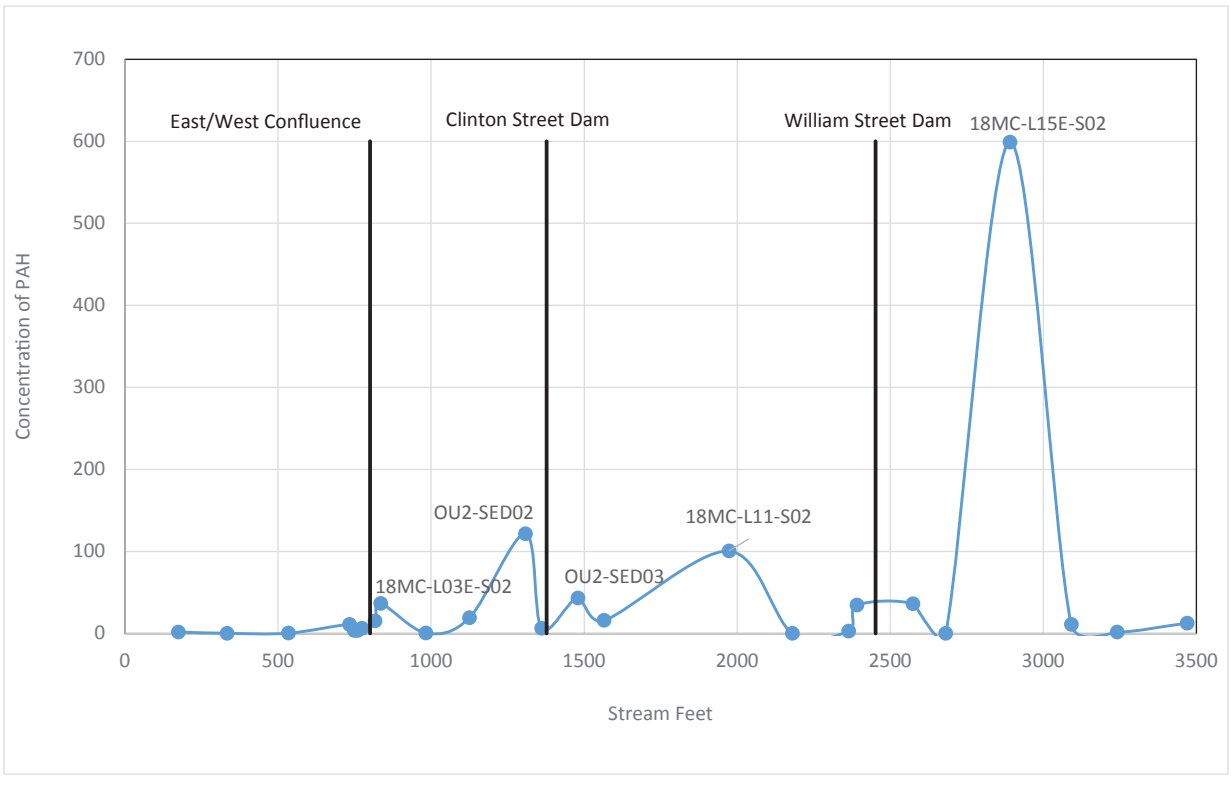
[1] New York State Department of Environmental Conservation, Technical and Operational Guidance #1.1.1: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, 1998 (and subsequent addenda), or United States Environmental Protection Agency Regions 3, 6, and 9. (11/13/2014). Regional Screening Levels for Chemical Contaminants at Superfund Sites. http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm. The lowest value between the two references was used for screening purposes.



Start Point	End Point	Concentration	Pb*
Barge Canal	Confluence of East and West	Maximum	1660
		Average	360
Confluence	Clinton Street Dam	Maximum	2720
		Average	429
Clinton Street	William Street Dam	Maximum	25400
		Average	2324
William Street Dam	Harwood Street	Maximum	2040
		Average	611



Start Point	End Point	Concentration	PCB, Total*
Barge Canal	Confluence of East and West	Maximum	3.80
		Average	0.36
Confluence	Clinton Street Dam	Maximum	35.0
		Average	4.0
Clinton Street	William Street Dam	Maximum	201
		Average	22.0
William Street Dam	Harwood Street	Maximum	390
		Average	42.0



Start Point	End Point	Concentration	PAH, Mixture*
Barge Canal	Confluence of East and West	Maximum	11
		Average	4.1
Confluence	Clinton Street Dam	Maximum	122
		Average	33
Clinton Street	William Street Dam	Maximum	101
		Average	33
William Street Dam	Harwood Street	Maximum	599
		Average	110

* Concentrations in mg/kg

Figure 5-4 Distribution of Lead, PCB, and PAH Concentrations in Sediment from Barge Canal to Harwood Street

6 Contaminant Fate and Transport

Contaminant fate and transport in OU2 creek corridor site is well documented in Section 6 of the NYSDEC 2009 supplemental RI report (EEEPC 2009a) and Section 5 of the SI report for the Former Flintkote Plant Property (TVGA 2005a). Additional data collection activities performed as part of the current supplemental RI reinforced the contaminant assessment presented in these previous reports. The main contaminant fate and transport concepts and modifications based on the new data collected are summarized in this section.

6.1 Conceptual Site Model

Conceptual models of exposure pathways for potential human and ecological receptors and are presented in the HHRA and BERA provided as separate reports (E & E 2016b and c [forthcoming]). Updates to future land use plans presented in the City of Lockport final Tourism Focus Area Nomination Study (Bergmann Associates 2015) and described in Section 1.3 have been incorporated into the CSM by using the potential for future residents under a mixed use scenario.

6.2 Contaminant Sources and Migration Pathways

No new contaminant sources or migration pathways were identified through the supplemental RI activities. Sampling and analysis of fish tissue was completed during the supplemental RI to assess fish ingestions as a potential exposure pathway. Changes to the physical characteristics of the Site and the type and distribution of contaminants impact conclusions of the previous investigations as described below for each type of media.

6.2.1 Soils

Soil samples collected in the creek corridor and at Upson Park, the Former Flintkote Plant Property had comparable concentrations of chemicals as found in previous investigations (see Section 5.2).

- PCBs and lead, previously identified as the compounds of concern, were found at the same levels. One additional PCB hot spot was found in Upson Park and in the creek corridor expanding the area of high concentration PCBs delineated on the west bank of the creek farther upland (see Section 5.2.1).
- VOCs were detected at relatively low concentrations in all samples tested and were found at the same locations and relative concentrations as previous investigations. No apparent sources were identified.

- Pesticides were found at the same sporadic, low concentrations as previous investigations. No apparent sources were identified.
- SVOCs (primarily PAHs) were detected in numerous soil samples; however, concentrations of these compounds were consistent with concentrations found in previous investigations and typical of urban areas. The presence of PAHs in soils throughout the Site appears to be associated with the fill on these properties, which was also where metals and PCB contamination were found.

Remediation of the Former Flintkote Plant Property buildings was completed in the summer of 2015. Remedial activities included demolition of the buildings; off-site disposal of contaminated building debris and debris not suitable for back-fill such as metal and wood); and excavation and removal of contaminated soils from a partially buried archway on the southwest side of the 300 Mill Street property. The building foundations were not removed. Demolition debris not removed from the Site was backfilled into the foundation and a gravel cover was installed throughout the Site.

While contaminated above-grade building materials were removed from the Site, there is potential that portions of the contaminants identified in the Flintkote SI report remain in the subsurface; therefore, potential exists for contaminants to migrate by way of surface water infiltration or groundwater migration through storm water drains and subsurface utility corridors. The on-site drainage system was not been fully delineated. Analysis of soil samples in the building foundations did not identify any sources of the PCBs (see Section 5.2.2). Building materials identified in the Flintkote SI report, such as non-friable asbestos-containing materials, were eliminated as part of the building remediation.

6.2.2 Groundwater

VOCs were detected in groundwater during the supplemental RI monitoring rounds at comparable levels to the VOC plume delineated during the NYSDEC 2009 SRI. An upgradient source of VOCs was not found and contamination appears to be localized to the same wells as previously identified (see Section 5.3). Sporadic, low levels of metals, SVOCs, and pesticides in the groundwater samples and no detections of PCBs were the same as found during historical investigations. Based on a hydrogeologic cross-section of the OU2 creek corridor in the vicinity of one of the VOC-contaminated monitoring wells (MW-5) (see Figure 3-2, Cross Section A-A′), the water table is below the elevation of the creek bottom, therefore, the creek is a losing stream in this area, thus contaminated groundwater does not discharge to the creek.

6.2.3 Sediments and Surface Water

Chemical concentrations in the sediment and surface water are consistent with previous investigations (see Section 5.4). Acute and chronic impacts of the concentration levels were assessed with toxicity and bioaccumulation testing. The results of these tests are presented in the BERA. No additional sources or hotspots were identified as part of the supplemental RI sampling and assessment of contaminants are the same as previously described. The NYSDEC 2009 sup-

plemental RI report concluded that Canal sediments do not appear to be a significant contributor of PCBs or metals to Eighteenmile Creek in the Project area and the likelihood of re-contamination of the creek by the Canal is small (EEEPC 2009a).

6.2.4 Fish Tissue

Fish tissue samples were collected from the OU2 creek corridor and background locations to assess the bioaccumulation exposure pathway from the sediment to fish in support of the HHRA and BERA (LATA/E & E 2014b) as described in Section 2.4. Concentration ranges for the forage fish composite sample data and game fish fillet data for OU2 and the background area is provided in Section 5.5.

6.3 Contaminant Persistence

Contaminant persistence is fully described in Section 6.4 of the NYSDEC 2009 supplemental RI report (EEEPC 2009a). Migration of the PCBs and lead and other contaminants from the OU2 creek corridor downstream to Lake Ontario is documented in the GLLA RI of sediments (CH2M Hill, Inc. and EEEPC 2015). Limited data were collected for hexavalent chromium, dioxins/furans, and PCB congeners in all media as part of previous investigations (see "Evaluation of Existing Data Eighteen Mile Creek Superfund Site" [LATA/E & E 2014a]). A limited number of samples were analyzed for these additional parameters for this OU2 supplemental RI confirm there appear to be no sources of these contaminants. Evaluation of the potential contribution to the total risks for these contaminants will be assessed qualitatively in the HHRA and BERA.

7 Summary and Conclusions

This section summarizes the results of the OU2 supplemental RI in conjunction with results from previous RI performed at the Site. The purpose of the OU2 supplemental RI was to collect additional data needed to develop a complete CSM of OU2, understand the fate and transport of sediment in the Eighteenmile Creek, and assess risk to humans and ecological receptors at the contaminated properties in the creek corridor. The HHRA and BERA will be completed as separate reports and the results are not summarized in this section. The primary objectives of the additional data collection activities include:

- Provide additional surface soil data in Upson Park away from the creek banks to understand whether contamination identified along the creek banks extend into the general public park area.
- Once the building foundation was exposed at the Former Flintkote Plant Property, collect subsurface soils/sediment/fill data to characterize potential sources of contamination or extent of fill that could not have been sampled previously.
- Investigate the low-level chlorinated VOCs identified in the groundwater plume south of the Eighteenmile Creek to identify the source(s). The groundwater plume is centered on the existing wells MW05 and MW09 on Water Street and MW14 in Upson Park.
- Perform toxicity and bioaccumulation testing to determine if there are actual impacts from the concentrations of PCBs, metals, pesticides and PAHs that were found in the sediment and soil samples collected from the OU2 creek corridor. Potential impacts are discussed in the BERA (to be provided under separate cover).
- Provide additional data for the full TCL/TAL analyses in order to comply with EPA risk assessment guidance and provide assurance that no significant COPCs are missed in the RI and risk assessment process.
- Collect fish tissue to assess bioaccumulation of contaminants through exposure to COPCs in sediment and resulting risks in the HHRA and BERA. The concentrations of COPCs in the fish tissue caught and consumed by anglers and shared with family members will be used to assess the cancer risks and non-cancer hazards for human health. The concentrations of COPCs in forage fish will be used to access bioaccumulation pathway for piscivorous wildlife along with determining risk to fish themselves in the BERA.

- Collect analytical data from environmental media to distinguish site-specific concentrations, exposures, and risks from background and reference locations.

The primary findings related to these objectives are summarized below.

7.1 Nature and Extent of Contamination

7.1.1 Soils

The properties along the OU2 creek corridor were characterized as areas of high contamination that appear to be related to areas of fill. High levels of lead contamination are found in all fill areas, while PCB contamination was not associated with all of the fill areas. The transport of fill material via erosion and runoff appears to be the primary mechanism for transport of PCBs and lead contamination farther downstream.

Significant areas of subsurface fill contaminated with lead were identified in Upson Park and one area with high levels of PCBs at location DEC-UPSON-2 were found during the NYSDEC RI (NYSDEC 2006a). However, the NYSDEC 2009 supplemental RI data did not confirm the high levels of PCBs. PCBs were found at elevated concentrations at DEC-UPSON-2 as part of this OU2 supplemental RI sampling and the area was delineated as shown on Figure 5-1. The fill from Upson Park appears to contribute lead contamination to the creek, as well as a potential source of PCBs.

Subsequent sampling of Upson Park upland soils collected as part of this OU2 supplemental RI indicate that the upland soils in the area of the park generally accessed by the general public does contain PAHs and metals slightly lower than, but comparable to, historical concentrations and does not contain PCB contamination. The samples collected in the creek bank within the park contain elevated levels of PAHs and metals, as well as PCBs.

Surface and subsurface soils and fill samples collected once the building foundation was exposed at the Former Flintkote Plant Property, in areas that could not have been sampled previously did not identify a specific source of contamination for PCBs or other site-related contaminants. Lower concentrations of PCBs were identified in some areas as shown on Figure 5-2 and the potential for contaminant contribution from soil or fill from below the foundation could not be eliminated based on the data collected.

PAHs were detected in many historical and supplemental RI surface soils. There were no significant levels of PAHs detected in subsurface samples. In general, the source of PAH contamination appears to be related to anthropogenic sources typical of urban and industrial areas. Additional data collected for pesticides and VOCs did not identify any new contaminants or sources and concentrations found are similar to background samples.

In summary, subsequent soil/sediment/surface water sampling efforts on the Former Flintkote Plant Property, United Paperboard Company Property, and within

the creek banks as part of this supplemental RI were performed in an effort to fill the data gaps described above. The result of these field efforts did not identify any PCB, PAH, or metals sources that would impact the nature and extent identified in previous investigations except for an area of PCBs delineated in the OU2 creek corridor in Upson Park. However, additional soil/sediment/surface water sampling for volatiles and pesticides indicated VOCs and pesticides levels are both very low.

7.1.2 Groundwater

Chlorinated volatile organics were found in the groundwater in several wells on the west side of the creek; however, the sediment or surface soils were not analyzed for VOCs. As described above, since insufficient data existed to identify the potential source of VOC contamination in the groundwater, a subsequent groundwater investigation was performed as part of this supplemental RI. Although two wells were planned, only one well was installed (OU2-MW18) due to dry overburden conditions. Supplemental RI sampling of the new well and nearby existing wells indicates that the VOC contamination is not upgradient of contaminated well OU2-MW05, but due to the lack of overburden groundwater upgradient of the other contaminated wells (OU2-MW-14 and OU2-MW15), the source of the VOCs is still inconclusive.

Additional groundwater sampling was also attempted on the east side of the creek, adjacent to the creek bank in the vicinity of the Flintkote Property in attempt to locate a source of PCB-contaminated groundwater than may be discharging to the creek adjacent to the Flintkote Property. Although groundwater samples were planned to be collected every 25 feet from 31 hand-driven well-point locations between the creek bank and the toe of the slope along the Flintkote property, only two samples were collected due to the abundant presence of fill material (e.g., bricks and concrete) and tree root causing the equipment to break on each attempt. The two samples were collected in the vicinity of the only OU2 creek corridor well that historically contained PCBs, but no PCBs were detected. Due to the lack of PCBs in these samples and the technical impracticality of collecting the samples, no additional studies are recommended.

7.1.3 Sediments

Previous investigations focused on defining the nature and extent of contamination in the sediment as well as other media in properties adjacent to Eighteenmile Creek. The potential sources of PCBs, PAH, lead, and other related metals to Eighteenmile Creek also were assessed. The NYSDEC RI (2006a) found high concentrations of PCBs and metals in sediment in the creek and the millrace adjacent to the Former Flintkote Plant Property and metals-contaminated fill at locations along the banks of Eighteenmile Creek. The SRI sediment and floodplain (off-bank) soil samples corroborated NYSDEC's findings (EEEPC 2009a). PCB-contaminated sediment in the Canal immediately upstream (to the west) of Eighteenmile Creek was identified by another investigation performed by URS in 2004. The NYSDEC 2009 supplemental RI investigation found much lower concentrations of PCBs in the Canal sediment samples collected adjacent to the properties.

An investigation of the Canal sediments and transport to Eighteenmile Creek indicated that the Canal was not a significant source of PCBs (EEEPC 2009b). Concentrations of PCBs and other chemicals in samples collected as part of this supplemental RI were similar to the historical data.

Lastly, since PCBs, metals, pesticides and PAHs were found in the sediment samples collected from the Eighteenmile Creek at concentrations that indicate the potential for both acute and chronic toxicity impacts based on comparison with screening criteria, bioaccumulation testing was performed to assess exposure pathways for invertivorous terrestrial and aquatic-dependent wildlife because site-specific data regarding contaminant concentrations in terrestrial and aquatic invertebrates are not available for the Site. Toxicity testing was performed during supplemental RI activities to determine whether sediment contaminant levels are great enough to adversely affect benthic aquatic organisms. Toxicity and results from bioaccumulation testing and determination of site-specific bioaccumulation factors will be presented in the BERA (provided under separate cover).

7.1.4 Fish Tissue Sampling

Supplemental RI activities included the collection of fish tissue samples from a reference area and the OU2 creek corridor in an effort to compare contaminant levels in fish from the OU2 creek corridor to those from fish in nearby bodies of water. However, fewer fish tissue samples were collected than originally planned due to insufficient numbers of suitable species present for game fish, forage fish, and the number and species of forage fish available for collection varied between areas. Thus, the correlation of fish contaminant levels between the OU2 creek corridor and the designated background has a lower degree of confidence than originally anticipated. Metals, PCBs, and many chlorinated pesticides were found in forage and game fish from OU2 and from the background area. The BERA report (to be provided under separate cover) will compare the forage fish tissue concentrations to tissue screening concentrations for fish tissue as well as using fish tissue concentrations to determine risk to upper trophic level piscivorous receptors. The HHRA report (provided under separate cover) compares the fillet data with human health screening levels for fish tissue to select contaminants of potential concern in fish and sediment for the HHRA.

7.1.5 Fate and Transport

Contaminant fate and transport in OU2 is well documented in Section 6 of the NYSDEC 2009 supplemental RI report (EEEPC 2009a) and Section 5 of the SI for the Former Flintkote Plant Site (TVGA 2005a). Additional data collection activities performed as part of the current supplemental RI reinforced the contaminant assessment presented in these previous reports. However, no new contaminant sources or migration pathways were identified through the supplemental RI data collection activities. The following are conclusions regarding fate and transport based on the Supplemental SI activities:

Soils

Since the supplemental RI began, the only response actions within OU2 implemented were the recent demolition of the Former Flintkote Plant Property buildings. Although some contaminated materials were removed from the site, most of the contaminants identified in the Flintkote SI report remain in the subsurface and can therefore migrate off site as described in previous investigations. Potential transport of harmful building materials identified in the Flintkote SI report, such as non-friable asbestos-containing materials, were eliminated as part of the building remediation.

Groundwater

A source of VOCs was not found and contamination appears to be localized to the same wells as previously identified (see Section 5.3). Based on a hydrogeologic cross-section of the OU2 creek corridor in the vicinity of one of the VOC-contaminated monitoring wells (MW-5) (see Figure 3-2, Cross Section A-A′), the water table is below the elevation of the creek bottom, therefore, the creek is a losing stream in this area, thus contaminated groundwater does not discharge to the creek.

Sediments and Surface Water

Chemical concentrations in the sediment and surface water are consistent with previous investigations (see Section 5.4). No additional sources or hotspots were identified as part of the supplemental RI sampling and primary of assessment of contaminants are the same as previously described. The NYSDEC 2009 supplemental RI report concluded that Canal sediments do not appear to be a significant contributor of PCBs or metals to Eighteenmile Creek in the project area and re-contamination of the creek by the Canal is unlikely (EEEPC 2009a).

Fish Tissue

Fewer fish tissue samples were collected than originally planned due to insufficient numbers of suitable species present for game fish, forage fish, and the number and species of forage fish available for collection varied between areas. Thus, the correlation of fish contaminant levels between the OU2 creek corridor and the designated background has a lower degree of confidence than originally anticipated. Metals, PCBs, and many chlorinated pesticides were found in forage and game fish from OU2 and the background area. The ingestion of fish tissue is a potential contaminant migration pathway that is assessed in the HHRA and BERA (to be provided under separate cover).

Contaminant Persistence

Contaminant persistence is fully described in Section 6.4 of the NYSDEC 2009 supplemental RI report (EEEPC 2009a). Migration of the PCBs and lead and other contaminants from OU2 downstream to Lake Ontario is documented in the GLLA RI of sediments (CH2M Hill, Inc. and EEEPC 2015). A limited number of samples were analyzed for hexavalent chromium, dioxins/furans, and PCB congeners for this OU2 supplemental RI.

7.2 Data Limitations and Potential Data Gaps

The OU2 supplemental RI data collection activities provided complete datasets to assess risk to humans and ecological receptors at the contaminated properties in the OU2 creek corridor in the HHRA and BERA. The OU2 supplemental RI data collection activities focused on identification of contaminant sources in support of the FS. However, no additional specific sources of contamination were identified. The groundwater investigation did not identify a source of VOCs; however, contamination appears to be localized to the same wells as previously identified. Samples collected beneath the foundations of the Former Flintkote Plant building did not identify a specific source of contamination for PCBs or other site-related contaminants. Lower concentrations of contaminants found in the samples collected near the foundation do not eliminate the potential for contaminant contribution from soil or fill from below the foundations.

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Table A-1a Analytical Results for PCB Aroclors and TOC in Soil Samples Collected from Upson Park

Sample ID: / Date: / Analyte	OU2-SS01-Z1 12/1/2014	OU2-SS01-Z2 12/1/2014	OU2-SS02-Z1 12/1/2014	OU2-SS02-Z2 12/1/2014	OU2-SS03-Z1 12/1/2014	OU2-SS03-Z1-FD 12/1/2014	OU2-SS03-Z2 12/1/2014	OU2-SS04-Z1 12/1/2014	OU2-SS04-Z2 12/1/2014	OU2-SS05-Z1 12/1/2014	OU2-SS05-Z2 12/1/2014
PCB Aroclors, mg/kg											
PCB-1016 (AROCLOR 1016)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1221 (AROCLOR 1221)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1232 (AROCLOR 1232)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1242 (AROCLOR 1242)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1248 (AROCLOR 1248)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1254 (AROCLOR 1254)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1260 (AROCLOR 1260)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1262 (AROCLOR 1262)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1268 (AROCLOR 1268)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon, mg/kg											
TOTAL ORGANIC CARBON	--	--	--	--	--	--	--	--	--	--	--

Table A-1a Analytical Results for PCB Aroclors and TOC in Soil Samples Collected from Upson Park

Sample ID: / Date: / Analyte	OU2-SS06-Z1 12/1/2014	OU2-SS06-Z2 12/1/2014	OU2-SS07-Z1 12/1/2014	OU2-SS07-Z2 12/1/2014	OU2-SS08-Z1 12/1/2014	OU2-SS08-Z2 12/1/2014	OU2-SS09-Z1 12/1/2014	OU2-SS09-Z2 12/1/2014	OU2-SS10-Z1 12/1/2014	OU2-SS10-Z2 12/1/2014	OU2-SS11-Z1 5/18/2015
PCB Aroclors, mg/kg											
PCB-1016 (AROCLOR 1016)	ND	ND	ND	0.26	ND	ND	ND	ND	ND	ND	ND
PCB-1221 (AROCLOR 1221)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1232 (AROCLOR 1232)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1242 (AROCLOR 1242)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1248 (AROCLOR 1248)	ND	ND	ND	ND	ND	ND	ND	250 J	0.16 NJ	ND	ND
PCB-1254 (AROCLOR 1254)	ND	ND	ND	ND	ND	ND	ND	140	ND	ND	0.13 J
PCB-1260 (AROCLOR 1260)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.063
PCB-1262 (AROCLOR 1262)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1268 (AROCLOR 1268)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.033 J
Total Organic Carbon, mg/kg											
TOTAL ORGANIC CARBON	--	--	--	--	--	--	--	--	--	--	--

Table A-1a Analytical Results for PCB Aroclors and TOC in Soil Samples Collected from Upson Park

Sample ID: / Date: / Analyte	OU2-SS11-Z1-FD 5/18/2015	OU2-SS11-Z2 5/18/2015	OU2-SS11-Z3 5/18/2015	OU2-SS12-Z1 5/18/2015	OU2-SS12-Z2 5/18/2015	OU2-SS12-Z3 5/18/2015	OU2-SS13-Z1 5/18/2015	OU2-SS13-Z2 5/18/2015	OU2-SS13-Z3 5/18/2015	OU2-SS14-Z1 5/18/2015	OU2-SS14-Z2 5/18/2015
PCB Aroclors, mg/kg											
PCB-1016 (AROCLOR 1016)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1221 (AROCLOR 1221)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1232 (AROCLOR 1232)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1242 (AROCLOR 1242)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1248 (AROCLOR 1248)	0.038 J	ND	ND	0.14 J	ND	ND	0.08 J	3.5 J	5.2 J	ND	ND
PCB-1254 (AROCLOR 1254)	0.1 J	0.022	0.29 J	0.16 J	2.0 J	ND	0.14 J	ND	8.5 J	0.097 J	ND
PCB-1260 (AROCLOR 1260)	0.055	0.012	0.21	0.079	0.63	180	0.091	0.10	8.5	0.065	2.4 J
PCB-1262 (AROCLOR 1262)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1268 (AROCLOR 1268)	0.027 J	0.0096	0.068 J	0.038 J	0.31 J	ND	0.033 J	ND	6.7 J	0.032 J	26 J
Total Organic Carbon, mg/kg											
TOTAL ORGANIC CARBON	--	--	--	--	--	--	--	--	--	--	--

Table A-1a Analytical Results for PCB Aroclors and TOC in Soil Samples Collected from Upson Park

Analyte	Sample ID: OU2-SS14-Z3 Date: 5/18/2015	OU2-SS22-Z1 1/25/2016	OU2-SS23-Z1 1/25/2016	OU2-SS24-Z1 1/25/2016
PCB Aroclors, mg/kg				
PCB-1016 (AROCLOR 1016)	ND	ND	ND	ND
PCB-1221 (AROCLOR 1221)	ND	ND	ND	ND
PCB-1232 (AROCLOR 1232)	ND	ND	ND	ND
PCB-1242 (AROCLOR 1242)	ND	ND	ND	ND
PCB-1248 (AROCLOR 1248)	ND	ND	ND	ND
PCB-1254 (AROCLOR 1254)	0.13 J	ND	ND	ND
PCB-1260 (AROCLOR 1260)	0.14 J	ND	ND	0.40 J+
PCB-1262 (AROCLOR 1262)	ND	ND	ND	ND
PCB-1268 (AROCLOR 1268)	0.44 J	ND	ND	ND
Total Organic Carbon, mg/kg				
TOTAL ORGANIC CARBON	--	81000	100000	140000

Key:

Qualifiers

J = Estimated value

J+ = Estimated value with high bias

NJ = Tentatively identified/estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

-- = Analyte not analyzed for

"-FD" denotes field duplicate sample

Table A-1b Analytical Results for TAL Metals in Soil Samples Collected from Upson Park

Sample ID: / Date: / Analyte	OU2-SS01-Z1 12/1/2014	OU2-SS01-Z2 12/1/2014	OU2-SS02-Z1 12/1/2014	OU2-SS02-Z2 12/1/2014	OU2-SS03-Z1 12/1/2014	OU2-SS03-Z1-FD 12/1/2014	OU2-SS03-Z2 12/1/2014	OU2-SS04-Z1 12/1/2014	OU2-SS04-Z2 12/1/2014	OU2-SS05-Z1 12/1/2014	OU2-SS05-Z2 12/1/2014
Metals, mg/kg											
ALUMINUM	11000	6010	7200	5400	7060	6880	8940	2960	4220	9040	5310
ANTIMONY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ARSENIC	9.1	14	9.1	12.7	13.2	17.8	14.7	7.4	7.7	10.1	11
BARIUM	103	110	83.6	91.4	116	118	134	49.8	104	81	53.7
BERYLLIUM	0.6	0.56	ND	0.66	0.68	ND	0.7	ND	ND	0.55	0.5
CADMIUM	3.6	2	2.8	1.1	1.1	1.2	0.81	0.54	0.43	2.5	0.49
CALCIUM	27400	45100	28600	42800	34800	36200	49900	117000	86900	38100	113000
CHROMIUM, HEXAVALENT	ND	--	--	--	--	--	--	--	--	--	--
CHROMIUM, TOTAL	77.3	38.2	48.1	22.5	25.9 J	47.6 J	16.2	7.5	9.2	55	14.1
COBALT	10.8	7.7	9.4	7.5	8.1	9.8	6.1	5.3	4.7	10.8	7.1
COPPER	145 J-	97	109	74.2	109	126	67.3	18	39	128	48.4
IRON	24800	26000	18200	16800	22100 J	55100 J	14700	12000	12300	23200	15400
LEAD	146	226	117	157	300	278	185	112	424	139	162
MAGNESIUM	10300	6070	9150	11600	9950	10400	13100	50000	20000	10800	19100
MANGANESE	505	696	549	639	502	702	415	588	520	542	599
MERCURY	0.47	0.41	0.47	0.32	0.36	0.24	0.22	0.048 J	0.42	0.35	0.16
NICKEL	36.5	30.3	26.9	21.1	33.8 J	57.9 J	22.3	13.6	11.8	33.4	19.5
POTASSIUM	1710	961	1200	1250	1370	1360	1450	816	785	1530	1840
SELENIUM	1.5 J	1.8 J	ND	1.5 J	1.5 J	ND	1.6 J	ND	ND	1.7 J	0.72 J
SILVER	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SODIUM	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
THALLIUM	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VANADIUM	21.8	15.7	15.5	14	18.5	17.5	18.1	7.7	11.1	19.5	10.6
ZINC	875	513	694	524	352	370	216	128	199	668	128

Table A-1b Analytical Results for TAL Metals in Soil Samples Collected from Upson Park

Sample ID: / Date: / Analyte	OU2-SS06-Z1 12/1/2014	OU2-SS06-Z2 12/1/2014	OU2-SS07-Z1 12/1/2014	OU2-SS07-Z2 12/1/2014	OU2-SS08-Z1 12/1/2014	OU2-SS08-Z2 12/1/2014	OU2-SS09-Z1 12/1/2014	OU2-SS09-Z2 12/1/2014	OU2-SS10-Z1 12/1/2014	OU2-SS10-Z2 12/1/2014	OU2-SS22-Z1 1/25/2016
Metals, mg/kg											
ALUMINUM	5020	8740	4730	4680	1730	1560	4870	9190	15900	5990	7550
ANTIMONY	ND	ND	ND	ND	ND	14.3	ND	ND	ND	ND	ND
ARSENIC	4.5	5.7	36.3	23.4	16.3	19.6	5.6	11.5	6.8	24.6	6.4
BARIUM	48	64.6	102	67	153	79.3	47.5	105	94.2	265	90
BERYLLIUM	ND	0.49	0.91	0.93	ND	0.5	ND	0.55	0.89	0.68	0.7
CADMIUM	ND	0.55	ND	0.82	ND	ND	0.79	1.9	1.1	4.3	0.6
CALCIUM	106000	90300	21800	6020	18000	2780	133000	36100	28000	30300	66500
CHROMIUM, HEXAVALENT	--	--	ND	--	--	--	--	--	0.19 J	--	--
CHROMIUM, TOTAL	11.4	15.4	14.6	26.5	10.1	7.3	11.7	36.4	23.6	55.5	11.6
COBALT	ND	8.6	8	17.4	ND	ND	ND	9.7	5.9	11.7	7.5
COPPER	28.1	25.5	69.2	101	51.4	5510	22.9	139	62.3	196	56
IRON	12000	18000	19200	29300	12700	13100	12100	27800	14400	61000	18700
LEAD	49.2	23	123	156	111	291	201	175	106	332	169
MAGNESIUM	50500	29400	4350	1730	3720	539	43100	13000	10400	13900	11800
MANGANESE	513	583	274	323	176	44.3	569	432	381	562	1280
MERCURY	0.059 J	0.068 J	0.12	0.3	0.092 J	0.049 J	0.051 J	0.65	0.26	0.61	0.6
NICKEL	12	20.4	30.3	42.2	18	14	15.7	34.6	19	60.9	17
POTASSIUM	1160	1640	886	765	667	ND	1530	1340	1150	979	1140
SELENIUM	1.1 J	0.62 J	1.8 J	1.4 J	1.9 J	1.5 J	0.9 J	0.94 J	ND	1.8 J	ND
SILVER	ND	ND	ND	ND	ND	ND	ND	1.4	ND	3.9	ND
SODIUM	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	407 J
THALLIUM	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VANADIUM	11.7	18.3	62.1	59.2	12.3	10.8	13.6	20	15.2	21.1	13.3
ZINC	98.7	118	205	541	107	44.9	241	552	259	607	132

Table A-1b Analytical Results for TAL Metals in Soil Samples Collected from Upson Park

Analyte	Sample ID: OU2-SS23-Z1 Date: 1/25/2016	OU2-SS24-Z1 1/25/2016
Metals, mg/kg		
ALUMINUM	5550	8680
ANTIMONY	2.4	75.5
ARSENIC	10.1	103
BARIUM	75.6	1490
BERYLLIUM	0.42 J	3.3
CADMIUM	0.82	14.7
CALCIUM	119000	7690
CHROMIUM, HEXAVALENT	--	--
CHROMIUM, TOTAL	16.9	105
COBALT	9.5	17.3
COPPER	97.2	7410
IRON	17700	175000
LEAD	210	2080
MAGNESIUM	14300	1190
MANGANESE	605	879
MERCURY	0.4	11.6
NICKEL	23.5	102
POTASSIUM	1640	565 J
SELENIUM	ND	ND
SILVER	ND	48.2
SODIUM	150 J	460 J
THALLIUM	ND	ND
VANADIUM	9.3	39.8
ZINC	204	3730

Key:

Qualifiers

J = Estimated value

J- = Estimated value with low bias

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

-- = Analyte not analyzed for

"-FD" denotes field duplicate sample

Table A-1c Analytical Results for Volatiles in Soil Samples Collected from Upson Park

Analyte	Sample ID: / Date:	OU2-SS01-Z1 12/1/2014	OU2-SS01-Z2 12/1/2014	OU2-SS02-Z1 12/1/2014	OU2-SS02-Z2 12/1/2014	OU2-SS03-Z1 12/1/2014	OU2-SS03-Z1-FD 12/1/2014	OU2-SS03-Z2 12/1/2014	OU2-SS04-Z1 12/1/2014	OU2-SS04-Z2 12/1/2014	OU2-SS05-Z1 12/1/2014
Volatile Organic Compounds, mg/kg											
1,1,1-TRICHLOROETHANE		ND	R	ND	ND	ND	ND	R	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE		ND	R	ND	ND	ND	ND	R	ND	ND	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE		ND	R	ND	ND	ND	ND	R	ND	ND	ND
1,1-DICHLOROETHANE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE		ND	R	ND	ND	R	R	R	R	ND	R
1,2,4-TRICHLOROBENZENE		ND	R	ND	ND	R	R	R	R	ND	R
1,2-DIBROMO-3-CHLOROPROPANE		ND	R	ND	ND	R	R	R	R	ND	R
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)		ND	R	ND	ND	ND	ND	R	ND	ND	ND
1,2-DICHLOROBENZENE		ND	R	ND	ND	R	R	R	R	ND	R
1,2-DICHLOROETHANE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROPROPANE		ND	R	ND	ND	ND	ND	R	ND	ND	ND
1,3-DICHLOROBENZENE		ND	R	ND	ND	R	R	R	R	ND	R
1,4-DICHLOROBENZENE		ND	R	ND	ND	R	R	R	R	ND	R
1,4-DIOXANE (P-DIOXANE)		R	R	R	R	R	R	R	R	R	R
2-HEXANONE		ND	R	ND	ND	ND	ND	R	ND	ND	ND
ACETONE		ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0049 J
BENZENE		ND	R	ND	ND	ND	ND	R	ND	ND	ND
BROMOCHLOROMETHANE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE		ND	R	ND	ND	ND	ND	R	ND	ND	ND
BROMOFORM		ND	R	ND	ND	R	R	R	R	ND	R
BROMOMETHANE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE		ND	R	ND	ND	ND	ND	R	ND	ND	ND
CHLOROBENZENE		ND	R	ND	ND	ND	ND	R	ND	ND	ND
CHLOROETHANE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHYLENE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,3-DICHLOROPROPENE		ND	R	ND	ND	ND	ND	R	ND	ND	ND
CYCLOHEXANE		ND	0.004 J	ND	ND	ND	0.00082 J	0.0011 J	ND	ND	ND
DIBROMOCHLOROMETHANE		ND	R	ND	ND	ND	ND	R	ND	ND	ND
DICHLORODIFLUOROMETHANE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETHYLBENZENE		ND	R	ND	ND	ND	ND	R	ND	ND	ND
ISOPROPYLBENZENE (CUMENE)		ND	R	ND	ND	ND	ND	R	ND	ND	ND
M,P-XYLENE		ND	0.001 J	ND	ND	ND	ND	R	ND	ND	ND
METHYL ACETATE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYL ETHYL KETONE (2-BUTANONE)		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYL ISOBUTYL KETONE		ND	R	ND	ND	ND	ND	R	ND	ND	ND
METHYLCYCLOHEXANE		ND	0.0063 J	ND	ND	ND	0.0015 J	0.0026 J	ND	ND	ND
METHYLENE CHLORIDE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table A-1c Analytical Results for Volatiles in Soil Samples Collected from Upson Park

Analyte	Sample ID: / Date:	OU2-SS05-Z2 12/1/2014	OU2-SS06-Z1 12/1/2014	OU2-SS06-Z2 12/1/2014	OU2-SS07-Z1 12/1/2014	OU2-SS07-Z2 12/1/2014	OU2-SS08-Z1 12/1/2014	OU2-SS08-Z2 12/1/2014	OU2-SS09-Z1 12/1/2014	OU2-SS09-Z2 12/1/2014	OU2-SS10-Z1 12/1/2014	OU2-SS10-Z2 12/1/2014
Volatile Organic Compounds, mg/kg												
1,1,1-TRICHLOROETHANE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE		ND	ND	ND	R	R	R	R	R	ND	R	ND
1,2,4-TRICHLOROBENZENE		ND	ND	ND	R	R	R	R	R	ND	R	ND
1,2-DIBROMO-3-CHLOROPROPANE		ND	ND	ND	R	R	R	R	R	ND	R	ND
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE		ND	ND	ND	R	R	R	R	R	ND	R	ND
1,2-DICHLOROETHANE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROPROPANE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE		ND	ND	ND	R	R	R	R	R	ND	R	ND
1,4-DICHLOROBENZENE		ND	ND	ND	R	R	R	R	R	ND	R	ND
1,4-DIOXANE (P-DIOXANE)		R	R	R	R	R	R	R	R	R	R	R
2-HEXANONE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE		ND	ND	ND	ND	ND	ND	0.017 J	0.0058 J	ND	0.0042 J	ND
BENZENE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BROMOCHLOROMETHANE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BROMOFORM		ND	ND	ND	R	R	R	R	R	ND	R	ND
BROMOMETHANE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE		ND	ND	ND	ND	ND	ND	0.0015 J	ND	ND	ND	0.0007 J
CARBON TETRACHLORIDE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHYLENE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,3-DICHLOROPROPENE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE		ND	ND	ND	0.0013 J	ND	ND	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETHYLBENZENE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE (CUMENE)		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M,P-XYLENE		ND	ND	ND	0.00041 J	ND	ND	ND	ND	ND	ND	ND
METHYL ACETATE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYL ETHYL KETONE (2-BUTANONE)		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYL ISOBUTYL KETONE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHYLCYCLOHEXANE		ND	ND	ND	0.0025 J	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table A-1c Analytical Results for Volatiles in Soil Samples Collected from Upson Park

Analyte / Sample ID: / Date:	OU2-SS01-Z1 12/1/2014	OU2-SS01-Z2 12/1/2014	OU2-SS02-Z1 12/1/2014	OU2-SS02-Z2 12/1/2014	OU2-SS03-Z1 12/1/2014	OU2-SS03-Z1-FD 12/1/2014	OU2-SS03-Z2 12/1/2014	OU2-SS04-Z1 12/1/2014	OU2-SS04-Z2 12/1/2014	OU2-SS05-Z1 12/1/2014
O-XYLENE (1,2-DIMETHYLBENZENE)	ND	0.0011 J	ND	ND	ND	ND	R	ND	ND	ND
STYRENE	ND	R	ND	ND	ND	ND	R	ND	ND	ND
TERT-BUTYL METHYL ETHER	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHYLENE(PCE)	ND	R	0.00076 J	0.00062 J	ND	ND	0.00028 J	ND	ND	ND
TOLUENE	ND	0.00076 J	ND	ND	ND	0.00031 J	0.00029 J	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,3-DICHLOROPROPENE	ND	R	ND	ND	ND	ND	R	ND	ND	ND
TRICHLOROETHYLENE (TCE)	ND	R	ND	0.00026 J	ND	ND	R	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table A-1c Analytical Results for Volatiles in Soil Samples Collected from Upson Park

Analyte / Sample ID: / Date:	OU2-SS05-Z2 12/1/2014	OU2-SS06-Z1 12/1/2014	OU2-SS06-Z2 12/1/2014	OU2-SS07-Z1 12/1/2014	OU2-SS07-Z2 12/1/2014	OU2-SS08-Z1 12/1/2014	OU2-SS08-Z2 12/1/2014	OU2-SS09-Z1 12/1/2014	OU2-SS09-Z2 12/1/2014	OU2-SS10-Z1 12/1/2014	OU2-SS10-Z2 12/1/2014
O-XYLENE (1,2-DIMETHYLBENZENE)	ND	ND	ND	0.0003 J	ND	ND	ND	ND	ND	ND	ND
STYRENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TERT-BUTYL METHYL ETHER	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHYLENE(PCE)	ND	ND	ND	0.00054 J	0.00048 J	ND	ND	ND	ND	ND	ND
TOLUENE	ND	ND	ND	0.0006 J	ND	ND	ND	0.0012 J	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,3-DICHLOROPROPENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHYLENE (TCE)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Key:

Qualifiers

J = Estimated value

R=Rejected result

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

"-FD" denotes field duplicate sample

Table A-1d Analytical Results for Semi-volatiles in Soil Samples Collected from Upson Park

Analyte / Sample ID: / Date:	OU2-SS01-Z1 12/1/2014	OU2-SS01-Z2 12/1/2014	OU2-SS02-Z1 12/1/2014	OU2-SS02-Z2 12/1/2014	OU2-SS03-Z1 12/1/2014	OU2-SS03-Z1-FD 12/1/2014	OU2-SS03-Z2 12/1/2014	OU2-SS04-Z1 12/1/2014	OU2-SS04-Z2 12/1/2014	OU2-SS05-Z1 12/1/2014
Semi-volatile Compounds, mg/kg										
1,2,4,5-TETRACHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,3,4,6-TETRACHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-TRICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-TRICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DIMETHYLPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DINITROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DINITROTOLUENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,6-DINITROTOLUENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-CHLORONAPHTHALENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-CHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-METHYLNAPHTHALENE	0.046 J	0.25 J	0.042 J	0.86 J	0.35 J	0.39 J	0.61	0.074 J	0.19 J	ND
2-METHYLPHENOL (O-CRESOL)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-NITROANILINE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-NITROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3,3'-DICHLOROBENZIDINE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3-NITROANILINE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,6-DINITRO-2-METHYLPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-BROMOPHENYL PHENYL ETHER	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-CHLORO-3-METHYLPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-CHLOROANILINE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-CHLOROPHENYL PHENYL ETHER	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-METHYLPHENOL (P-CRESOL)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-NITROANILINE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-NITROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACENAPHTHENE	ND	0.046 J	ND	1.2 J	0.035 J	0.061 J	ND	ND	0.67 J	ND
ACENAPHTHYLENE	0.12 J	0.17 J	0.11 J	1.7 J	0.17 J	0.22 J	0.095 J	0.032 J	1.3 J	0.082 J
ACETOPHENONE	ND	ND	0.17 J	ND	ND	ND	ND	ND	ND	ND
ANTHRACENE	0.11 J	0.2 J	0.098 J	7.1	0.17 J	0.44 J	0.11 J	0.041 J	1.6 J	0.066 J
ATRAZINE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZALDEHYDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZO(A)ANTHRACENE	0.51	0.96	0.43	17	0.84	2	0.58	0.22	7.2	0.32 J
BENZO(A)PYRENE	0.54	0.93	0.47	15	0.85	1.7	0.57	0.21	7.9	0.35 J
BENZO(B)FLUORANTHENE	0.76	1.3	0.7	18	1.4	2.9	0.94	0.31	11	0.52
BENZO(G,H,I)PERYLENE	0.29 J	0.42 J	0.22 J	5.3 J	0.37 J	0.65 J	0.2 J	0.071 J	3.2 J	0.13 J
BENZO(K)FLUORANTHENE	0.28 J	0.49	0.21 J	7.3	0.42 J	0.84	0.26 J	0.11 J	3.8	0.18 J
BENZYL BUTYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BIPHENYL (DIPHENYL)	ND	ND	ND	0.17 J	ND	ND	0.046 J	ND	ND	ND
BIS(2-CHLOROETHOXY) METHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BIS(2-CHLOROETHYL) ETHER	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table A-1d Analytical Results for Semi-volatiles in Soil Samples Collected from Upson Park

Analyte / Sample ID: / Date:	OU2-SS05-Z2 12/1/2014	OU2-SS06-Z1 12/1/2014	OU2-SS06-Z2 12/1/2014	OU2-SS07-Z1 12/1/2014	OU2-SS07-Z2 12/1/2014	OU2-SS08-Z1 12/1/2014	OU2-SS08-Z2 12/1/2014	OU2-SS09-Z1 12/1/2014	OU2-SS09-Z2 12/1/2014	OU2-SS10-Z1 12/1/2014
Semi-volatile Compounds, mg/kg										
1,2,4,5-TETRACHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,3,4,6-TETRACHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-TRICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-TRICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DIMETHYLPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DINITROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DINITROTOLUENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,6-DINITROTOLUENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-CHLORONAPHTHALENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-CHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-METHYLNAPHTHALENE	0.037 J	ND	ND	0.13 J	0.14 J	0.11 J	0.11 J	ND	0.079 J	0.055 J
2-METHYLPHENOL (O-CRESOL)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-NITROANILINE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-NITROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3,3'-DICHLOROBENZIDINE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3-NITROANILINE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,6-DINITRO-2-METHYLPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-BROMOPHENYL PHENYL ETHER	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-CHLORO-3-METHYLPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-CHLOROANILINE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-CHLOROPHENYL PHENYL ETHER	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-METHYLPHENOL (P-CRESOL)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-NITROANILINE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-NITROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACENAPHTHENE	ND	ND	ND	ND	0.062 J	ND	ND	ND	ND	ND
ACENAPHTHYLENE	0.04 J	0.022 J	ND	0.13 J	0.088 J	0.049 J	0.26 J	ND	0.15 J	0.11 J
ACETOPHENONE	ND	ND	ND	ND	ND	ND	0.033 J	ND	ND	ND
ANTHRACENE	0.056 J	0.022 J	ND	0.13 J	0.16 J	0.07 J	0.17 J	0.034 J	0.12 J	0.099 J
ATRAZINE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZALDEHYDE	0.042 J	ND	ND	ND	ND	ND	0.42	ND	ND	ND
BENZO(A)ANTHRACENE	0.29	0.11 J	0.048 J	0.65	0.86	0.35 J	0.96	0.19 J	0.4 J	0.68
BENZO(A)PYRENE	0.28	0.12 J	0.056 J	0.65	0.9	0.35 J	0.88	0.21 J	0.49	0.81
BENZO(B)FLUORANTHENE	0.43	0.21	0.11 J	1	1.3	0.61	1.6	0.37 J	0.78	1.4
BENZO(G,H,I)PERYLENE	0.083 J	0.042 J	0.02 J	0.2 J	0.27 J	0.1 J	0.16 J	0.056 J	0.14 J	0.21 J
BENZO(K)FLUORANTHENE	0.16 J	0.068 J	0.033 J	0.3 J	0.42 J	0.19 J	0.63	0.13 J	0.24 J	0.46
BENZYL BUTYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.033 J
BIPHENYL (DIPHENYL)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BIS(2-CHLOROETHOXY) METHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BIS(2-CHLOROETHYL) ETHER	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table A-1d Analytical Results for Semi-volatiles in Soil Samples Collected from Upson Park

Analyte	Sample ID: OU2-SS10-Z2 Date: 12/1/2014	OU2-SS22-Z1 1/25/2016	OU2-SS23-Z1 1/25/2016	OU2-SS24-Z1 1/25/2016
Semi-volatile Compounds, mg/kg				
1,2,4,5-TETRACHLOROBENZENE	ND	--	--	--
2,3,4,6-TETRACHLOROPHENOL	ND	--	--	--
2,4,5-TRICHLOROPHENOL	ND	--	--	--
2,4,6-TRICHLOROPHENOL	ND	--	--	--
2,4-DICHLOROPHENOL	ND	--	--	--
2,4-DIMETHYLPHENOL	ND	--	--	--
2,4-DINITROPHENOL	ND	--	--	--
2,4-DINITROTOLUENE	ND	--	--	--
2,6-DINITROTOLUENE	ND	--	--	--
2-CHLORONAPHTHALENE	ND	--	--	--
2-CHLOROPHENOL	ND	--	--	--
2-METHYLNAPHTHALENE	0.084 J	ND	ND	ND
2-METHYLPHENOL (O-CRESOL)	ND	--	--	--
2-NITROANILINE	ND	--	--	--
2-NITROPHENOL	ND	--	--	--
3,3'-DICHLOROBENZIDINE	ND	--	--	--
3-NITROANILINE	ND	--	--	--
4,6-DINITRO-2-METHYLPHENOL	ND	--	--	--
4-BROMOPHENYL PHENYL ETHER	ND	--	--	--
4-CHLORO-3-METHYLPHENOL	ND	--	--	--
4-CHLOROANILINE	ND	--	--	--
4-CHLOROPHENYL PHENYL ETHER	ND	--	--	--
4-METHYLPHENOL (P-CRESOL)	ND	--	--	--
4-NITROANILINE	ND	--	--	--
4-NITROPHENOL	ND	--	--	--
ACENAPHTHENE	0.048 J	ND	ND	ND
ACENAPHTHYLENE	0.12 J	ND	ND	ND
ACETOPHENONE	ND	--	--	--
ANTHRACENE	0.16 J	0.11 J	0.11 J	ND
ATRAZINE	ND	--	--	--
BENZALDEHYDE	ND	--	--	--
BENZO(A)ANTHRACENE	1.0	0.38	0.37	0.12 J
BENZO(A)PYRENE	1.2	0.27	0.32	0.17 J
BENZO(B)FLUORANTHENE	1.8	0.38	0.40	0.25 J
BENZO(G,H,I)PERYLENE	0.47	0.14 J	0.18 J	0.17 J
BENZO(K)FLUORANTHENE	0.66	0.13 J	0.14 J	0.083 J
BENZYL BUTYL PHTHALATE	0.059 J	--	--	--
BIPHENYL (DIPHENYL)	ND	--	--	--
BIS(2-CHLOROETHOXY) METHANE	ND	--	--	--
BIS(2-CHLOROETHYL) ETHER	ND	--	--	--

Table A-1d Analytical Results for Semi-volatiles in Soil Samples Collected from Upson Park

Analyte / Sample ID: / Date:	OU2-SS01-Z1 12/1/2014	OU2-SS01-Z2 12/1/2014	OU2-SS02-Z1 12/1/2014	OU2-SS02-Z2 12/1/2014	OU2-SS03-Z1 12/1/2014	OU2-SS03-Z1-FD 12/1/2014	OU2-SS03-Z2 12/1/2014	OU2-SS04-Z1 12/1/2014	OU2-SS04-Z2 12/1/2014	OU2-SS05-Z1 12/1/2014
BIS(2-CHLOROISOPROPYL) ETHER	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BIS(2-ETHYLHEXYL) PHTHALATE	0.13 J	0.066 J	0.13 J	0.21 J	0.13 J	0.11 J	0.044 J	ND	ND	0.1 J
CAPROLACTAM	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBAZOLE	0.048 J	0.1 J	0.047 J	2 J	0.1 J	0.16 J	0.072 J	0.026 J	1.3 J	0.038 J
CHRYSENE	0.59	1.1	0.5	16	1.1	2.4	0.74	0.26	8.4	0.38 J
DIBENZ(A,H)ANTHRACENE	0.087 J	0.14 J	0.067 J	1.7 J	0.13 J	0.26 J	0.074 J	0.026 J	0.92 J	0.044 J
DIBENZOFURAN	ND	0.11 J	ND	1.5 J	0.13 J	0.15 J	0.21 J	0.028 J	0.49 J	ND
DIETHYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DIMETHYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DI-N-BUTYL PHTHALATE	0.05 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
DI-N-OCTYLPHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FLUORANTHENE	0.89	1.8	0.7	35	1.5	3.9	0.99	0.41	16	0.54
FLUORENE	ND	0.06 J	0.035 J	2.4	ND	0.12 J	ND	ND	0.61 J	ND
HEXACHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROBUTADIENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROCYCLOPENTADIENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
INDENO(1,2,3-C,D)PYRENE	0.36 J	0.55	0.29 J	7.2	0.49	0.9	0.27 J	0.1 J	4	0.18 J
ISOPHORONE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	0.037 J	0.14 J	0.052 J	0.99 J	0.2 J	0.23 J	0.34 J	0.047 J	0.28 J	ND
NITROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-NITROSODI-N-PROPYLAMINE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-NITROSODIPHENYLAMINE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PENTACHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PHENANTHRENE	0.4 J	0.96	0.33 J	24	0.77	2.1	0.77	0.22	8.9	0.25 J
PHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PYRENE	0.79	1.5	0.62	28	1.3	3	0.89	0.35	14	0.48

Table A-1d Analytical Results for Semi-volatiles in Soil Samples Collected from Upson Park

Analyte / Sample ID: / Date:	OU2-SS05-Z2 12/1/2014	OU2-SS06-Z1 12/1/2014	OU2-SS06-Z2 12/1/2014	OU2-SS07-Z1 12/1/2014	OU2-SS07-Z2 12/1/2014	OU2-SS08-Z1 12/1/2014	OU2-SS08-Z2 12/1/2014	OU2-SS09-Z1 12/1/2014	OU2-SS09-Z2 12/1/2014	OU2-SS10-Z1 12/1/2014
BIS(2-CHLOROISOPROPYL) ETHER	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BIS(2-ETHYLHEXYL) PHTHALATE	0.021 J	0.016 J	ND	0.043 J	0.09 J	0.1 J	0.12 J	0.041 J	0.055 J	0.09 J
CAPROLACTAM	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBAZOLE	0.032 J	ND	ND	0.062 J	0.086 J	0.041 J	0.041 J	ND	0.053 J	0.073 J
CHRYSENE	0.34	0.14 J	0.084 J	0.77	1.1	0.43 J	1	0.24 J	0.49	0.79
DIBENZ(A,H)ANTHRACENE	0.034 J	ND	ND	0.079 J	0.11 J	ND	0.083 J	ND	0.054 J	0.074 J
DIBENZOFURAN	0.021 J	ND	ND	0.056 J	0.063 J	0.042 J	0.051 J	ND	0.039 J	0.038 J
DIETHYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DIMETHYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DI-N-BUTYL PHTHALATE	ND	ND	ND	ND	ND	0.041 J	ND	ND	0.034 J	0.036 J
DI-N-OCTYLPHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FLUORANTHENE	0.56	0.2	0.078 J	1	1.3	0.66	1.4	0.33 J	0.67	1.3
FLUORENE	0.017 J	ND	ND	ND	0.049 J	ND	ND	ND	0.039 J	0.047 J
HEXACHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROBUTADIENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROCYCLOPENTADIENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
INDENO(1,2,3-C,D)PYRENE	0.13 J	0.061 J	0.029 J	0.28 J	0.37 J	0.14 J	0.29 J	0.085 J	0.2 J	0.3 J
ISOPHORONE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	0.024 J	ND	ND	0.073 J	0.086 J	0.047 J	0.049 J	ND	0.051 J	0.035 J
NITROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-NITROSODI-N-PROPYLAMINE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-NITROSODIPHENYLAMINE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PENTACHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PHENANTHRENE	0.25	0.079 J	0.035 J	0.51	0.69	0.35 J	0.5	0.13 J	0.43	0.5
PHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PYRENE	0.48	0.18 J	0.077 J	1.1	1.4	0.64	1.4	0.3 J	0.62	1.1

Table A-1d Analytical Results for Semi-volatiles in Soil Samples Collected from Upson Park

Analyte / Sample ID: / Date:	OU2-SS10-Z2 12/1/2014	OU2-SS22-Z1 1/25/2016	OU2-SS23-Z1 1/25/2016	OU2-SS24-Z1 1/25/2016
BIS(2-CHLOROISOPROPYL) ETHER	ND	--	--	--
BIS(2-ETHYLHEXYL) PHTHALATE	0.26 J	--	--	--
CAPROLACTAM	ND	--	--	--
CARBAZOLE	0.11 J	--	--	--
CHRYSENE	1.2	0.41	0.33	0.15 J
DIBENZ(A,H)ANTHRACENE	0.14 J	0.050 J	ND	ND
DIBENZOFURAN	0.051 J	--	--	--
DIETHYL PHTHALATE	ND	--	--	--
DIMETHYL PHTHALATE	ND	--	--	--
DI-N-BUTYL PHTHALATE	0.081 J	--	--	--
DI-N-OCTYLPHTHALATE	ND	--	--	--
FLUORANTHENE	1.9	0.95	0.61	0.14 J
FLUORENE	0.061 J	0.053 J	ND	ND
HEXACHLOROBENZENE	ND	--	--	--
HEXACHLOROBUTADIENE	ND	--	--	--
HEXACHLOROCYCLOPENTADIENE	ND	--	--	--
HEXACHLOROETHANE	ND	--	--	--
INDENO(1,2,3-C,D)PYRENE	0.61	0.13 J	0.17 J	0.15 J
ISOPHORONE	ND	--	--	--
NAPHTHALENE	0.048 J	ND	ND	ND
NITROBENZENE	ND	--	--	--
N-NITROSODI-N-PROPYLAMINE	ND	--	--	--
N-NITROSODIPHENYLAMINE	ND	--	--	--
PENTACHLOROPHENOL	ND	ND	ND	ND
PHENANTHRENE	0.73	0.65	0.38	0.061 J
PHENOL	ND	--	--	--
PYRENE	1.7	0.77	0.52	0.13 J

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

-- = Analyte not analyzed for

"-FD" denotes field duplicate sample

Table A-1e Analytical Results for Pesticides in Soil Samples Collected from Upson Park

Analyte	Sample ID: OU2-SS01-Z1 Date: 12/1/2014	OU2-SS01-Z2 12/1/2014	OU2-SS02-Z1 12/1/2014	OU2-SS02-Z2 12/1/2014	OU2-SS03-Z1 12/1/2014	OU2-SS03-Z1-FD 12/1/2014	OU2-SS03-Z2 12/1/2014	OU2-SS04-Z1 12/1/2014	OU2-SS04-Z2 12/1/2014
Pesticides, mg/kg									
ALDRIN	ND	ND	ND	ND	ND	ND	ND	ND	ND
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	ND	ND	ND	ND	ND	ND	ND	ND	ND
ALPHA ENDOSULFAN	ND	ND	ND	ND	ND	ND	ND	ND	0.0065 NJ
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	ND	0.00081 J	ND	ND	0.00089 J	0.0015 J	0.0013 J	ND	ND
BETA ENDOSULFAN	ND	ND	ND	ND	ND	ND	ND	ND	R
CIS-CHLORDANE	ND	ND	ND	ND	ND	ND	ND	ND	ND
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	ND	ND	ND	ND	ND	ND	ND	ND	ND
DIELDRIN	ND	ND	ND	ND	ND	ND	ND	ND	ND
ENDOSULFAN SULFATE	ND	ND	ND	0.011 J	ND	ND	ND	ND	0.0086 J
ENDRIN	ND	ND	ND	R	ND	ND	ND	ND	R
ENDRIN ALDEHYDE	ND	ND	ND	0.014 NJ	ND	ND	ND	ND	R
ENDRIN KETONE	ND	ND	ND	0.011 NJ	ND	ND	ND	ND	0.022 NJ
GAMMA BHC (LINDANE)	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEPTACHLOR	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEPTACHLOR EPOXIDE	ND	0.0025 NJ	ND	ND	0.0024 J	R	0.0021 J	0.0012 J	0.0063 J
METHOXYCHLOR	ND	ND	ND	R	ND	ND	ND	ND	R
P,P'-DDD	R	R	R	R	0.016 NJ	0.02 NJ	0.024 J	ND	R
P,P'-DDE	ND	0.0093 J	ND	0.0091 NJ	0.0072 J	0.0069 J	0.0046 J	ND	0.017 J
P,P'-DDT	0.026 J	0.016 J	0.02 J	0.019 J	0.016 J	0.02 J	0.012 J	ND	R
TOXAPHENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-CHLORDANE	ND	0.0046 J	ND	0.012 J	ND	ND	ND	ND	0.011 NJ

Table A-1e Analytical Results for Pesticides in Soil Samples Collected from Upson Park

Analyte	Sample ID: OU2-SS05-Z1 Date: 12/1/2014	OU2-SS05-Z2 12/1/2014	OU2-SS06-Z1 12/1/2014	OU2-SS06-Z2 12/1/2014	OU2-SS07-Z1 12/1/2014	OU2-SS07-Z2 12/1/2014	OU2-SS08-Z1 12/1/2014	OU2-SS08-Z2 12/1/2014	OU2-SS09-Z1 12/1/2014	OU2-SS09-Z2 12/1/2014
Pesticides, mg/kg										
ALDRIN	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ALPHA ENDOSULFAN	ND	ND	ND	ND	ND	ND	ND	ND	ND	R
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	0.00052 J	0.00018 J	ND	ND	ND	ND	ND	0.00059 J	ND	ND
BETA ENDOSULFAN	ND	ND	ND	ND	ND	ND	ND	ND	ND	R
CIS-CHLORDANE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DIELDRIN	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ENDOSULFAN SULFATE	ND	ND	ND	ND	ND	ND	0.00082 J	0.0041 J	ND	ND
ENDRIN	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.2 J
ENDRIN ALDEHYDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	R
ENDRIN KETONE	0.0045 J	ND	ND	ND	ND	ND	ND	ND	ND	R
GAMMA BHC (LINDANE)	ND	ND	ND	ND	ND	ND	ND	ND	ND	R
HEPTACHLOR	ND	ND	ND	ND	ND	ND	0.004 J	ND	ND	0.85 J
HEPTACHLOR EPOXIDE	ND	ND	ND	ND	ND	ND	ND	0.0011 J	ND	ND
METHOXYCHLOR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
P,P'-DDD	R	ND	ND	ND	R	0.015 J	0.0063 NJ	R	ND	ND
P,P'-DDE	0.0062 J	0.0049 J	ND	ND	0.0081 J	0.058 J	ND	ND	ND	2.9 J
P,P'-DDT	0.018 J	0.0042 J	ND	ND	0.016 J	0.066 J	0.0048 NJ	0.0073 NJ	ND	3.8 J
TOXAPHENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-CHLORDANE	0.006 J	ND	ND	ND	ND	0.0043 J	ND	ND	ND	ND

Table A-1e Analytical Results for Pesticides in Soil Samples Collected from Upson Park

Analyte	Sample ID: OU2-SS10-Z1 Date: 12/1/2014	OU2-SS10-Z2 12/1/2014	OU2-SS22-Z1 1/25/2016	OU2-SS23-Z1 1/25/2016	OU2-SS24-Z1 1/25/2016
Pesticides, mg/kg					
ALDRIN	ND	ND	ND	ND	ND
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	ND	ND	ND	ND	ND
ALPHA ENDOSULFAN	ND	ND	ND	ND	ND
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	0.00067 J	ND	ND	ND	ND
BETA ENDOSULFAN	ND	ND	ND	ND	ND
CIS-CHLORDANE	ND	ND	ND	ND	ND
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	ND	ND	ND	ND	ND
DIELDRIN	0.02 J	0.026 NJ	ND	ND	ND
ENDOSULFAN SULFATE	ND	ND	ND	ND	ND
ENDRIN	ND	ND	ND	ND	ND
ENDRIN ALDEHYDE	ND	ND	ND	ND	ND
ENDRIN KETONE	0.0034 J	0.0091	ND	ND	ND
GAMMA BHC (LINDANE)	ND	ND	ND	ND	ND
HEPTACHLOR	0.0018 J	0.0018 J	ND	ND	ND
HEPTACHLOR EPOXIDE	ND	ND	ND	ND	0.0065 J+
METHOXYCHLOR	ND	ND	ND	ND	ND
P,P'-DDD	R	R	ND	ND	0.0083 NJ
P,P'-DDE	ND	0.015	ND	ND	0.0080 NJ
P,P'-DDT	0.0085 NJ	0.022 J	ND	ND	0.046 J+
TOXAPHENE	ND	ND	ND	ND	ND
TRANS-CHLORDANE	ND	0.004 J	ND	ND	ND

Key:

J = Estimated value

NJ = Tentatively identified/estimated value

R=Rejected result

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

"-FD" denotes field duplicate sample

Table A-1f Analytical Results for PCB Congeners in Soil Samples Collected from Upson Park

Analyte	Sample ID: OU2-SS02-Z1 Date: 12/1/2014	OU2-SS05-Z1 12/1/2014	OU2-SS09-Z1 12/1/2014	OU2-SS13-Z1 5/18/2015
PCB Congeners, ng/kg				
CHLOROBIPHENYL; 2- (PCB 1)	274	133	31	--
CHLOROBIPHENYL; 3- (PCB 2)	129	83.5	ND	--
CHLOROBIPHENYL; 4- (PCB 3)	241	149	28.9	--
COELUTE: OCTACHLOROBIPHENYL: 2,2',3,3',4,5,5',6/2,2',3,3',4,5,5',6'	4690	3880	429	--
COELUTE: TETRACHLOROBIPHENYL: 2,2',3,6/2,2',4,6'	601	535	59.4	--
COLUTE: HEPTACHLOROBIPHENYLS; 2,2',3,3',4,4',6-(PCB 171)/ 2,2',3,3',4,5,6-(PCB 173)	1390	1180	85.1	--
COLUTE: HEPTACHLOROBIPHENYLS; 2,2',3,4,4',5,5'-(PCB 180)/ 2,3,3',4',5,5',6-(PCB 193)	10500	8880	708	--
COLUTE: HEXACHLOROBIPHENYLS; 2,2',3,3',4,4'-(PCB 128)/ 2,3,4,4',5,6-(PCB 166)	3500	2830	185	--
COLUTE: HEXACHLOROBIPHENYLS; 2,2',3,3',4,5-(PCB 129)/ 2,2',3,4,4',5'-(PCB 138)/ 2,3,3',4',5,6 (PCB 163)	20200	17000	1080	--
COLUTE: HEXACHLOROBIPHENYLS; 2,2',3,3',5,6'-(PCB 135)/ 2,2',3,5,5',6-(PCB 151)	5090	4100	286	--
COLUTE: HEXACHLOROBIPHENYLS; 2,2',3,4,4',6-(PCB 139)/ 2,2',3,4,4',6'-(PCB 140)	324	233	ND	--
COLUTE: HEXACHLOROBIPHENYLS; 2,2',3,4',5,6-(PCB 147)/ 2,2',3,4',5',6-(PCB 149)	11800	7830	692	--
COLUTE: HEXACHLOROBIPHENYLS; 2,2',4,4',5,5'-(PCB 153)/ 2,3',4,4',5',6-(PCB 168)	13200	11700	739	--
COLUTE: HEXACHLOROBIPHENYLS; 2,3,3',4,4',5-(PCB 156)/ 2,3,3',4,4',5'-(PCB 157)	1720	1510	115	--
COLUTE: PENTACHLOROBIPHENYLS; 2,2',3,4,4'-(PCB 85)/2,3,4,5,6-(PCB 116)/ 2,3,4',5,6-(PCB 117)	4820	4060	171	--
COLUTE: PENTACHLOROBIPHENYLS; 2,2',3,4,5-(PCB 86)/ 2,2',3,4,5'-(PCB 87)/ 2,2',3,4',5'-(PCB 97) /2,3,3',4,6-(PCB109) / 2,3',4,4',6-(PCB 119)/ 2,3',4',5',6-(PCB 125)	7700	6520	418	--
COLUTE: PENTACHLOROBIPHENYLS; 2,2',3,4',5-(PCB 90)/2,2',4,5,5'-(PCB 101)/ 2,3,3',5',6-(PCB 113)	10600	9410	531	--
COLUTE: PENTACHLOROBIPHENYLS; 2,2',3,4',6'-(PCB 98)/ 2,2',4,5,6'-(PCB 102)	556	455	ND	--
COLUTE: PENTACHLOROBIPHENYLS; 2,2',3,5,6-(PCB 93)/2,2',4,4',6-(PCB 100)	152	121	ND	--
COLUTE: PENTACHLOROBIPHENYLS; 2,3,3',4,5'-(PCB 108)/ 2,3',4',5,5'-(PCB 124)	387	338	ND	--
COLUTE: PENTACHLOROBIPHENYLS; 2,3,3',4',6-(PCB 110)/ 2,3,4,4',6-(PCB 115)	21000	17900	1190	--
COLUTE: TETRACHLOROBIPHENYLS; 2,2',3,3'-(PCB 40)/ 2,3',4',6-(PCB 71)	1240	1420	151	--
COLUTE: TETRACHLOROBIPHENYLS; 2,2',3,5'-(PCB 44)/ 2,2',4,4'-(PCB 47)/ 2,3,5,6-(PCB 65)	4080	4140	401	--
COLUTE: TETRACHLOROBIPHENYLS; 2,2',4,5'-(PCB 49)/ 2,3',4,6-(PCB 69)	2220	2490	234	--
COLUTE: TETRACHLOROBIPHENYLS; 2,2',4,6-(PCB 50)/ 2,2',5,6'-(PCB 53)	484	418	47.9	--
COLUTE: TETRACHLOROBIPHENYLS; 2,3,3',6-(PCB 59)/ 2,3,4,6-(PCB 62)/ 2,4,4',6-(PCB 75)	350	402	ND	--
COLUTE: TETRACHLOROBIPHENYLS; 2,3,4,5-(PCB 61)/ 2,3',4',5-(PCB 70)/ 2,4,4',5-(PCB 74)/ 2,3',4',5'-(PCB 76)	6500	6700	810	--
COLUTE: TRICHLOROBIPHENYLS; 2,2',5-(PCB 18)/ 2,4,6-(PCB 30)	771	685	60.1	--
COLUTE: TRICHLOROBIPHENYLS; 2,3,3'-(PCB 20)/ 2,4,4'-(PCB 28)	2880	3070	270	--
COLUTE: TRICHLOROBIPHENYLS; 2,3,4-(PCB 21)/ 2,3',4'-(PCB 33)	1020	977	60.2	--
COLUTE: TRICHLOROBIPHENYLS; 2,3',5-(PCB 26)/ 2,4,5-(PCB 29)	395	483	43.7	--
DECACHLOROBIPHENYL (PCB 209)	10500	7550	2920	9600
DICHLOROBIPHENYL	3090	2150	268	--
DICHLOROBIPHENYL, 2,2'- (PCB 4)	149	124	ND	--
DICHLOROBIPHENYL; 2,3- (PCB 5)	ND	ND	ND	--

Table A-1f Analytical Results for PCB Congeners in Soil Samples Collected from Upson Park

Analyte	Sample ID: / Date:	OU2-SS02-Z1 12/1/2014	OU2-SS05-Z1 12/1/2014	OU2-SS09-Z1 12/1/2014	OU2-SS13-Z1 5/18/2015
DICHLOROBIPHENYL; 2,3'- (PCB 6)		131	107	ND	--
DICHLOROBIPHENYL; 2,4- (PCB 7)		ND	ND	ND	--
DICHLOROBIPHENYL; 2,4'- (PCB 8)		423	300	27	440
DICHLOROBIPHENYL; 2,5- (PCB 9)		19.8	ND	ND	--
DICHLOROBIPHENYL; 2,6- (PCB 10)		ND	ND	ND	--
DICHLOROBIPHENYL; 3,3'- (PCB 11)		1120	378	134	--
DICHLOROBIPHENYL; 3,4 -(PCB 12)/ 3,4'-(PCB 13)		215	199	ND	--
DICHLOROBIPHENYL; 3,5- (PCB 14)		ND	ND	ND	--
DICHLOROBIPHENYL; 4,4'- (PCB 15)		1030	1040	107	--
HEPTACHLOROBIPHENYL; 2,2',3,3',4,4',5- (PCB 170)		4550	3770	250	2600
HEPTACHLOROBIPHENYL; 2,2',3,3',4,5,5'- (PCB 172)		752 J	719	54.7	--
HEPTACHLOROBIPHENYL; 2,2',3,3',4,5,6'- (PCB 174)		5060	4280	335	--
HEPTACHLOROBIPHENYL; 2,2',3,3',4,5',6- (PCB 175)		179	156	ND	--
HEPTACHLOROBIPHENYL; 2,2',3,3',4',5,6- (PCB 177)		2890	2470	184	--
HEPTACHLOROBIPHENYL; 2,2',3,3',4,6,6'- (PCB 176)		487	402	29.7	--
HEPTACHLOROBIPHENYL; 2,2',3,3',5,5',6- (PCB 178)		1030	879	78.7	--
HEPTACHLOROBIPHENYL; 2,2',3,3',5,6,6'- (PCB 179)		1950	1630	136	--
HEPTACHLOROBIPHENYL; 2,2',3,4,4',5,5'- (PCB 180)		--	--	--	6000 J
HEPTACHLOROBIPHENYL; 2,2',3,4,4',5,6- (PCB 181)		47.1	36.4	ND	--
HEPTACHLOROBIPHENYL; 2,2',3,4,4',5,6'- (PCB 182)		22.2	ND	ND	--
HEPTACHLOROBIPHENYL; 2,2',3,4,4',6,6'- (PCB 184)		ND	ND	ND	--
HEPTACHLOROBIPHENYL; 2,2',3,4',5,5',6- (PCB 187)		5620	5130	475	3700
HEPTACHLOROBIPHENYL; 2,2',3,4,5,6,6'- (PCB 186)		ND	ND	ND	--
HEPTACHLOROBIPHENYL; 2,2',3,4',5,6,6'- (PCB 188)		ND	ND	ND	--
HEPTACHLOROBIPHENYL; 2,3,3',4,4',5,5'- (PCB 189)		187	167	ND	120
HEPTACHLOROBIPHENYL; 2,3,3',4,4',5,6- (PCB 190)		866	731	57.3	--
HEPTACHLOROBIPHENYL; 2,3,3',4,4',5',6- (PCB 191)		159	136	ND	--
HEPTACHLOROBIPHENYL; 2,3,3',4,5,5',6- (PCB 192)		ND	ND	ND	--
HEXACHLOROBIPHENYL; 2,2',3,3',4,4'- (PCB 128)		--	--	--	2200 J
HEXACHLOROBIPHENYL; 2,2',3,3',4,5'- (PCB 130)		1240	1040	70.5	--
HEXACHLOROBIPHENYL; 2,2',3,3',4,6- (PCB 131)		207	159	ND	--
HEXACHLOROBIPHENYL; 2,2',3,3',4,6'- (PCB 132)		5690	4460	308	--
HEXACHLOROBIPHENYL; 2,2',3,3',5,5'- (PCB 133)		264	226	ND	--
HEXACHLOROBIPHENYL; 2,2',3,3',5,6- (PCB 134)		741	511	44.8	--
HEXACHLOROBIPHENYL; 2,2',3,3',6,6'- (PCB 136)		1490	994	79	--
HEXACHLOROBIPHENYL; 2,2',3,4,4',5- (PCB 137)		968	868	44.2	--
HEXACHLOROBIPHENYL; 2,2',3,4,4',5'- (PCB 138)		--	--	--	13000 J
HEXACHLOROBIPHENYL; 2,2',3,4,5,5'- (PCB 141)		2920	2320	139	--
HEXACHLOROBIPHENYL; 2,2',3,4',5,5'- (PCB 146)		2130	1900	122	--
HEXACHLOROBIPHENYL; 2,2',3,4,5,6- (PCB 142)		ND	ND	ND	--
HEXACHLOROBIPHENYL; 2,2',3,4,5,6'- (PCB 143)		31.9	ND	ND	--

Table A-1f Analytical Results for PCB Congeners in Soil Samples Collected from Upson Park

Analyte	Sample ID: / Date:	OU2-SS02-Z1 12/1/2014	OU2-SS05-Z1 12/1/2014	OU2-SS09-Z1 12/1/2014	OU2-SS13-Z1 5/18/2015
HEXACHLOROBIPHENYL; 2,2',3,4,5',6- (PCB 144)		583	427	32.8	--
HEXACHLOROBIPHENYL; 2,2',3,4',5,6'- (PCB 148)		21.3	20.1	ND	--
HEXACHLOROBIPHENYL; 2,2',3,4,6,6'- (PCB 145)		ND	ND	ND	--
HEXACHLOROBIPHENYL; 2,2',3,4',6,6'- (PCB 150)		ND	ND	ND	--
HEXACHLOROBIPHENYL; 2,2',3,5,6,6'- (PCB 152)		ND	ND	ND	--
HEXACHLOROBIPHENYL; 2,2',4,4',5,5'- (PCB 153)		--	--	--	8200 J
HEXACHLOROBIPHENYL; 2,2',4,4',5',6- (PCB 154)		141	127	ND	--
HEXACHLOROBIPHENYL; 2,2',4,4',6,6'- (PCB 155)		ND	ND	ND	--
HEXACHLOROBIPHENYL; 2,3,3',4,4',5- (PCB 156)		--	--	--	970 J
HEXACHLOROBIPHENYL; 2,3,3',4,4',5'- (PCB 157)		--	--	--	970 J
HEXACHLOROBIPHENYL; 2,3,3',4,4',6- (PCB 158)		1470	1270	89.9	--
HEXACHLOROBIPHENYL; 2,3,3',4,5,5'- (PCB 159)		ND	ND	ND	--
HEXACHLOROBIPHENYL; 2,3,3',4',5,5'- (PCB 162)		55.1	66.6	ND	--
HEXACHLOROBIPHENYL; 2,3,3',4,5,6- (PCB 160)		ND	ND	ND	--
HEXACHLOROBIPHENYL; 2,3,3',4,5',6- (PCB 161)		ND	ND	ND	--
HEXACHLOROBIPHENYL; 2,3,3',4',5',6- (PCB 164)		1280	1050	76.1	--
HEXACHLOROBIPHENYL; 2,3,3',5,5',6- (PCB 165)		ND	ND	ND	--
HEXACHLOROBIPHENYL; 2,3',4,4',5,5'- (PCB 167)		861	723	45.7	450
HEXACHLOROBIPHENYL; 3,3',4,4',5,5'- (PCB 169)		ND	ND	ND	32 EMPCJ
MONOCHLOROBIPHENYL		644	366	59.8	--
NONACHLOROBIPHENYL		11500	9440	1830	--
NONACHLOROBIPHENYL; 2,2',3,3',4,4',5,5',6- (PCB 206)		6230	5430	1140	5800
NONACHLOROBIPHENYL; 2,2',3,3',4,4',5,6,6'- (PCB 207)		592	480	111	--
NONACHLOROBIPHENYL; 2,2',3,3',4,5,5',6,6'- (PCB 208)		4700	3530	583	--
OCTACHLOROBIPHENYL (MIXED ISOMERS)		13900	11700	1210	--
OCTACHLOROBIPHENYL; 2,2',3,3',4,4',5,5'- (PCB 194)		2320	1930	187	--
OCTACHLOROBIPHENYL; 2,2',3,3',4,4',5,6- (PCB 195)		848	742	65.2	710
OCTACHLOROBIPHENYL; 2,2',3,3',4,4',5,6'- (PCB 196)		1370	1130	101	--
OCTACHLOROBIPHENYL; 2,2',3,3',4,5',6,6'- (PCB 201)		427	454	38.4	--
OCTACHLOROBIPHENYL; 2,2',3,3',5,5',6,6'- (PCB 202)		1190	951	116	--
OCTACHLOROBIPHENYL; 2,2',3,4,4',5,5',6- (PCB 203)		2470	2040	226	--
OCTACHLOROBIPHENYL; 2,2',3,4,4',5,6,6'- (PCB 204)		ND	ND	ND	--
OCTACHLOROBIPHENYL; 2,3,3',4,4',5,5',6- (PCB 205)		125	108	ND	--
PCB, TOTAL		286000	249000	22400	--
PCB-183/185		3260	2800	225	--
PCB-197/200		507	430	43.5	--
PENTACHLOROBIPHENYL:2,2',3,4,6/2,2'3,4',6		2500	2080	146	--
PENTACHLOROBIPHENYL; 2,2',3,3',4- (PCB 82)		1710	1420	82.5	--
PENTACHLOROBIPHENYL; 2,2',3,3',5- (PCB 83)		822	827	47.2	--
PENTACHLOROBIPHENYL; 2,2',3,3',6- (PCB 84)		2330	1800	162	--
PENTACHLOROBIPHENYL; 2,2',3,4,6'- (PCB 89)		94.4 J	123	ND	--

Table A-1f Analytical Results for PCB Congeners in Soil Samples Collected from Upson Park

Analyte	Sample ID: OU2-SS02-Z1 Date: 12/1/2014	OU2-SS05-Z1 12/1/2014	OU2-SS09-Z1 12/1/2014	OU2-SS13-Z1 5/18/2015
PENTACHLOROBIPHENYL; 2,2',3,5,5'- (PCB 92)	3020	2470	123	--
PENTACHLOROBIPHENYL; 2,2',3,5,6'- (PCB 94)	99.1	73.4	ND	--
PENTACHLOROBIPHENYL; 2,2',3,5',6- (PCB 95)	7750	5940	510	--
PENTACHLOROBIPHENYL; 2,2',3,6,6'- (PCB 96)	84.3	57.1	ND	--
PENTACHLOROBIPHENYL; 2,2',4,4',5- (PCB 99)	9690	8890	405	--
PENTACHLOROBIPHENYL; 2,2',4,5,5'- (PCB 101)	--	--	--	6500 J
PENTACHLOROBIPHENYL; 2,2',4,5',6- (PCB 103)	87.6	78	ND	--
PENTACHLOROBIPHENYL; 2,2',4,6,6'- (PCB 104)	ND	ND	ND	--
PENTACHLOROBIPHENYL; 2,3,3',4,4'- (PCB 105)	3910	3870	363	4100
PENTACHLOROBIPHENYL; 2,3,3',4,5- (PCB 106)	ND	ND	ND	--
PENTACHLOROBIPHENYL; 2,3,3',4',5- (PCB 107)	617	614	53.5	--
PENTACHLOROBIPHENYL; 2',3,3',4,5- (PCB 122)	251	217	ND	--
PENTACHLOROBIPHENYL; 2,3,3',5,5'- (PCB 111)	ND	ND	ND	--
PENTACHLOROBIPHENYL; 2,3,3',5,6- (PCB 112)	ND	ND	ND	--
PENTACHLOROBIPHENYL; 2,3,4,4',5- (PCB 114)	149	143	ND	270
PENTACHLOROBIPHENYL; 2,3',4,4',5- (PCB 118)	7680	8470	666	8400
PENTACHLOROBIPHENYL; 2',3,4,4',5- (PCB 123)	305	309	ND	260
PENTACHLOROBIPHENYL; 2,3',4,5,5'- (PCB 120)	57.7	57.1	ND	--
PENTACHLOROBIPHENYL; 2,3',4,5',6- (PCB 121)	ND	ND	ND	--
PENTACHLOROBIPHENYL; 3,3',4,4',5- (PCB 126)	53.2	74.4	ND	68
PENTACHLOROBIPHENYL; 3,3',4,5,5'- (PCB 127)	27	22.8	ND	--
TEQ PCB	5.9	8	0.045	--
TETRACHLOROBIPHENYL	34500	35900	3600	--
TETRACHLOROBIPHENYL; 2,2',3,4- (PCB 41)	208	120	25.2	--
TETRACHLOROBIPHENYL; 2,2',3,4'- (PCB 42)	1010	1070	101	--
TETRACHLOROBIPHENYL; 2,2',3,5- (PCB 43)	137	105	ND	--
TETRACHLOROBIPHENYL; 2,2',3,5'- (PCB 44)	--	--	--	6100 J
TETRACHLOROBIPHENYL; 2,2',3,6'- (PCB 46)	187	162	ND	--
TETRACHLOROBIPHENYL; 2,2',4,5- (PCB 48)	385	396	41.5	--
TETRACHLOROBIPHENYL; 2,2',5,5'- (PCB 52)	3950	4020	419	6100
TETRACHLOROBIPHENYL; 2,2',6,6'- (PCB 54)	ND	ND	ND	--
TETRACHLOROBIPHENYL; 2,3,3',4- (PCB 55)	25.8	64	ND	--
TETRACHLOROBIPHENYL; 2,3,3',4'- (PCB 56)	2610	2750	277	--
TETRACHLOROBIPHENYL; 2,3,3',5- (PCB 57)	17.3	ND	ND	--
TETRACHLOROBIPHENYL; 2,3,3',5'- (PCB 58)	43.6	47.9	ND	--
TETRACHLOROBIPHENYL; 2,3,4,4'- (PCB 60)	946	927	136	--
TETRACHLOROBIPHENYL; 2,3',4,4'- (PCB 66)	5790	6310	581	7800
TETRACHLOROBIPHENYL; 2,3,4',5- (PCB 63)	130	138	ND	--
TETRACHLOROBIPHENYL; 2,3',4,5- (PCB 67)	85.1	92.3	ND	--
TETRACHLOROBIPHENYL; 2,3',4,5'- (PCB 68)	92.5	98.3	ND	--
TETRACHLOROBIPHENYL; 2,3,4',6- (PCB 64)	1750	1820	227	--

Table A-1f Analytical Results for PCB Congeners in Soil Samples Collected from Upson Park

Analyte	Sample ID: OU2-SS02-Z1 Date: 12/1/2014	OU2-SS05-Z1 12/1/2014	OU2-SS09-Z1 12/1/2014	OU2-SS13-Z1 5/18/2015
TETRACHLOROBIPHENYL; 2,3',5,5'- (PCB 72)	89.8	120	ND	--
TETRACHLOROBIPHENYL; 2,3',5',6- (PCB 73)	157	133	ND	--
TETRACHLOROBIPHENYL; 3,3',4,4'- (PCB 77)	1270	1310	87.8	930
TETRACHLOROBIPHENYL; 3,3',4,5- (PCB 78)	ND	ND	ND	--
TETRACHLOROBIPHENYL; 3,3',4,5'- (PCB 79)	95.7	94.6	ND	--
TETRACHLOROBIPHENYL; 3,3',5,5'- (PCB 80)	ND	ND	ND	--
TETRACHLOROBIPHENYL; 3,4,4',5- (PCB 81)	34.2	33	ND	36 EMPCJ
TRICHLOROBIPHENYL	11000	11100	907	--
TRICHLOROBIPHENYL; 2,2',3- (PCB 16)	311	266	ND	--
TRICHLOROBIPHENYL; 2,2',4- (PCB 17)	371	372	33.9	--
TRICHLOROBIPHENYL; 2,2',5- (PCB 18)	--	--	--	1100 J
TRICHLOROBIPHENYL; 2,2',6- (PCB 19)	94.9	94.4	ND	--
TRICHLOROBIPHENYL; 2,3,4'- (PCB 22)	714	714	73.5	--
TRICHLOROBIPHENYL; 2,3',4- (PCB 25)	238	317	26.2	--
TRICHLOROBIPHENYL; 2,3,5- (PCB 23)	ND	ND	ND	--
TRICHLOROBIPHENYL; 2',3,5- (PCB 34)	ND	ND	ND	--
TRICHLOROBIPHENYL; 2,3,6- (PCB 24)	ND	ND	ND	--
TRICHLOROBIPHENYL; 2,3',6- (PCB 27)	76.6	86.1	ND	--
TRICHLOROBIPHENYL; 2,4,4'- (PCB 28)	--	--	--	4200 J
TRICHLOROBIPHENYL; 2,4',5- (PCB 31)	2120	2070	194	--
TRICHLOROBIPHENYL; 2,4',6- (PCB 32)	252	267	31.7	--
TRICHLOROBIPHENYL; 3,3',4- (PCB 35)	65.1	69.7	ND	--
TRICHLOROBIPHENYL; 3,3',5- (PCB 36)	ND	ND	ND	--
TRICHLOROBIPHENYL; 3,4,4'- (PCB 37)	1630	1670	114	--
TRICHLOROBIPHENYL; 3,4,5- (PCB 38)	ND	ND	ND	--
TRICHLOROBIPHENYL; 3,4',5- (PCB 39)	25.1	ND	ND	--
TOTAL HEPTACHLOROBIPHENYLS	38900 J	33400	2620	--
TOTAL HEXACHLOROBIPHENYLS	75900	61400	4150	--
TOTAL PENTACHLOROBIPHENYLS	86500 J	76300	4870	--

Key:

Qualifiers

J = Estimated value

EMPC = Estimated Maximum Possible Concentration

Other

ND = Sample is "non-detect"

ng/kg = Nanograms per kilogram

-- = Analyte not analyzed for

"-FD" denotes field duplicate sample

Table A-1g Analytical Results for Dioxins/Furans in Soil Samples Collected from Upson Park

Analyte	Sample ID: OU2-SS02-Z1 Date: 12/1/2014	OU2-SS05-Z1 12/1/2014	OU2-SS09-Z1 12/1/2014	OU2-SS12-Z1 5/18/2015
Dioxins/Furans, ng/kg				
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	1050	981	63.1	1700
1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN	2990	1680	116	2500
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	36.1	28.1	1.86 J	51
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	103 EMPC	160	5.92	180
1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN	13.6	11.7	1.17 J	13
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	38 EMPC	55.7	2.02 J	90 EMPCJ
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	72.3	44	3.49 J	83
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	6.79 EMPC	6.76	0.575 J	1.5 J
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	21	16.7	1.64 J	22 J
1,2,3,7,8-PENTACHLORODIBENZOFURAN	10.6 EMPC	13.6	1.34 J	8.8 EMPCJ
1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN	6.72	5.05	0.616 J	5 EMPCJ
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	23 EMPC	17.6	1.56 J	13
2,3,4,7,8-PENTACHLORODIBENZOFURAN	17.8 EMPC	21.9	1.48 J	18 EMPCJ
2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0)	107.3	83.56	10.59	--
2,3,7,8-TETRACHLORODIBENZOFURAN	9.82	10.3	1.03	6.5
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	7.83	3.45	5.44	3.3 EMPCJ
HEPTACHLORODIBENZOFURANS	2620	1980	134	--
HEPTACHLORODIBENZO-P-DIOXINS	6960	3750	256	--
HEXACHLORODIBENZOFURAN	1090	830	50.2	--
HEXACHLORODIBENZO-P-DIOXIN	599	413	38.4	--
OCTACHLORODIBENZOFURAN	1630	1230	79.6	2500
OCTACHLORODIBENZO-P-DIOXIN	57000 J	28500 J	1590	35000 J
PENTACHLORO DIBENZOFURAN	249	280	21.2	--
PENTACHLORODIBENSO-P-DIOXIN	91.6	79.9	9.31	--
TETRACHLORODIBENZOFURAN	232	230	18.3	--
TETRACHLORODIBENZO-P-DIOXIN	52.8	52.1	11.2	--

Key:

Qualifiers

J = Estimated value

EMPC = Estimated Maximum Possible Concentration

Other

ND = Sample is "non-detect"

ng/kg = Nanograms per kilogram

-- = Analyte not analyzed for

Table A-2a Analytical Results for PCB Aroclors and TOC in Soil Boring and Surface Soil Samples Collected from the Former Flintkote Plant Property

Sample ID: / Date: / Analyte	OU2-SB01-Z1 12/4/2014	OU2-SB01-Z1-FD 12/4/2014	OU2-SB01-Z2 12/4/2014	OU2-SB01-Z3 12/4/2014	OU2-SB02-Z1 12/4/2014	OU2-SB02-Z2 12/4/2014	OU2-SB02-Z3 12/4/2014	OU2-SB03-Z1 12/4/2014	OU2-SB03-Z2 12/4/2014	OU2-SB03-Z3 12/4/2014	OU2-SS15-Z1 1/25/2016	OU2-SS16-Z1 1/26/2016	OU2-SS17-Z1 1/26/2016
PCB Aroclors, mg/kg													
PCB-1016 (AROCLOR 1016)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1221 (AROCLOR 1221)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1232 (AROCLOR 1232)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1242 (AROCLOR 1242)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1248 (AROCLOR 1248)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1254 (AROCLOR 1254)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1260 (AROCLOR 1260)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	33 J	ND
PCB-1262 (AROCLOR 1262)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1268 (AROCLOR 1268)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.3 J
Total Organic Carbon, mg/kg													
TOTAL ORGANIC CARBON	--	--	--	--	--	--	--	--	--	--	96000	96000	170000

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

-- = Analyte not analyzed for

"-FD" denotes field duplicate sample

Table A-2b Analytical Results for TAL Metals in Soil Boring and Surface Soil Samples Collected from the Former Flintkote Plant Property

Sample ID: / Date: / Analyte	OU2-SB01-Z1 12/4/2014	OU2-SB01-Z1-FD 12/4/2014	OU2-SB01-Z2 12/4/2014	OU2-SB01-Z3 12/4/2014	OU2-SB02-Z1 12/4/2014	OU2-SB02-Z2 12/4/2014	OU2-SB02-Z3 12/4/2014	OU2-SB03-Z1 12/4/2014	OU2-SB03-Z2 12/4/2014
Metals, mg/kg									
ALUMINUM	2430 J	5930 J	9550	9150	3610	4150	9190	6480	6150
ANTIMONY	ND	ND	ND	ND	ND	ND	ND	ND	7.3
ARSENIC	28	33.9	6.4	5.7	17.7	19.1	2	27.1	42.8
BARIUM	56.6	72.2	83.3	50.8	81.1	85.4	32.6	140	625
BERYLLIUM	0.48 J	0.95 J	ND	0.6	1.1	1.1	0.7	1.1	0.87
CADMIUM	0.44 J	0.32 J	0.16 J	0.056 J	0.23 J	0.3 J	0.24 J	0.97	4.6
CALCIUM	94600	79100	3650	1560	16400	27400	71600	22900	20300
CHROMIUM, TOTAL	7.2	9.4	12.7	11.4	7.8	9.3	15.5	19	32.3
COBALT	4.2 J	6.5	8.4	7.1	6.1	5.9	7	8.8	12.2
COPPER	51.3	65.1	24.5	14.6	98.6	127	4.1	352	7320
IRON	17600 J	30200 J	18800	18500	18700	20600	19900	27400	84200
LEAD	64.2	66.5	36.6	6.3	57.2	115	2.9	341	2050
MAGNESIUM	49100	38700	2740	2220	6870	9830	3380	10600	1750
MANGANESE	902	695	509	789	137	193	535	305 J	361
MERCURY	0.21	0.15	0.11	0.02 J	0.23	0.17	ND	1.3 J-	18.8
NICKEL	11.1	15.2	13	12.4	14	13.2	18	25.1	30.2
POTASSIUM	544	733	947	1050	403	ND	2130	919	700
SELENIUM	ND	ND	ND	ND	ND	ND	ND	ND	ND
SILVER	ND	ND	ND	ND	ND	ND	ND	0.6 J+	4.6
SODIUM	ND	ND	ND	ND	ND	ND	ND	ND	ND
THALLIUM	ND	ND	ND	ND	ND	ND	ND	ND	ND
VANADIUM	12.9	15.1	16.2	14	15.6	16.2	15.3	24.1	22.2
ZINC	106	82.9	66.3	29.1	81.3	77.6	29.3	484	4630

Table A-2b Analytical Results for TAL Metals in Soil Boring and Surface Soil Samples Collected from the Former Flintkote Plant Property

Sample ID: / Date: / Analyte	OU2-SB03-Z3 12/4/2014	OU2-SS15-Z1 1/25/2016	OU2-SS16-Z1 1/26/2016	OU2-SS17-Z1 1/26/2016
Metals, mg/kg				
ALUMINUM	6740	7720	4800	5880
ANTIMONY	ND	1.6	1.4	110
ARSENIC	5.3	24.1 J	13	19.3
BARIUM	91.9	115	79.6	1210
BERYLLIUM	ND	1.1	0.35 J	0.45 J
CADMIUM	0.84	0.57	1.7	35.4
CALCIUM	5070	19600	70100	18900
CHROMIUM, TOTAL	9.6	13.9	21.2	176
COBALT	6.4	11.3	7.1	20.5
COPPER	340	59	144	8250
IRON	14600	22600	21300	172000
LEAD	195	165	123	2480
MAGNESIUM	1590	3380	31400	4480
MANGANESE	648	545	734	1560
MERCURY	0.94	0.35	0.33	7.7
NICKEL	8.3	27.8	29.7	373
POTASSIUM	736	1080	843	668 J
SELENIUM	ND	ND	ND	ND
SILVER	ND	ND	ND	9.6
SODIUM	ND	129 J	150 J	429 J
THALLIUM	ND	0.30 J	0.14 J	ND
VANADIUM	13.3	22.3	20.9	19.4
ZINC	781	126	381	9030

Key:

Qualifiers

J = Estimated value

J+ = Estimated value with high bias

J- = Estimated value with low bias

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

"-FD" denotes field duplicate sample

Table A-2c Analytical Results for Volatiles in Soil Boring Samples Collected from the Former Flintkote Plant Property

Analyte / Sample ID: / Date:	OU2-SB01-Z1 12/4/2014	OU2-SB01-Z1-FD 12/4/2014	OU2-SB01-Z2 12/4/2014	OU2-SB01-Z3 12/4/2014	OU2-SB02-Z1 12/4/2014	OU2-SB02-Z2 12/4/2014	OU2-SB02-Z3 12/4/2014
Volatile Organic Compounds, mg/kg							
1,1,1-TRICHLOROETHANE	R	R	ND	ND	R	R	ND
1,1,2,2-TETRACHLOROETHANE	R	R	ND	ND	R	R	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ND	ND	ND	ND	ND	R	ND
1,1,2-TRICHLOROETHANE	R	R	ND	ND	R	R	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND	ND	R	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND	R	ND
1,2,3-TRICHLOROBENZENE	R	R	R	ND	R	R	ND
1,2,4-TRICHLOROBENZENE	R	R	R	ND	R	R	ND
1,2-DIBROMO-3-CHLOROPROPANE	R	R	R	ND	R	R	ND
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	R	R	ND	ND	R	R	ND
1,2-DICHLOROBENZENE	R	R	R	ND	R	R	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND	ND	R	ND
1,2-DICHLOROPROPANE	R	R	ND	ND	R	R	ND
1,3-DICHLOROBENZENE	R	R	R	ND	R	R	ND
1,4-DICHLOROBENZENE	R	R	R	ND	R	R	ND
1,4-DIOXANE (P-DIOXANE)	R	R	R	R	R	R	R
2-HEXANONE	R	R	ND	ND	R	R	ND
ACETONE	ND	ND	0.01 J	0.0077 J	0.04	0.071 J+	ND
BENZENE	R	R	ND	ND	R	0.03 J+	ND
BROMOCHLOROMETHANE	ND	ND	ND	ND	ND	R	ND
BROMODICHLOROMETHANE	R	R	ND	ND	R	R	ND
BROMOFORM	R	R	R	ND	R	R	ND
BROMOMETHANE	ND	ND	ND	ND	ND	R	ND
CARBON DISULFIDE	ND	0.0012 J	ND	ND	ND	0.056 J+	ND
CARBON TETRACHLORIDE	R	R	ND	ND	R	R	ND
CHLOROBENZENE	R	R	ND	ND	R	R	ND
CHLOROETHANE	ND	ND	ND	ND	ND	R	ND
CHLOROFORM	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND	R	ND
CIS-1,2-DICHLOROETHYLENE	ND	ND	ND	ND	ND	R	ND
CIS-1,3-DICHLOROPROPENE	R	R	ND	ND	R	R	ND
CYCLOHEXANE	0.0033 J	0.0039 J	0.0018 J	ND	0.0037 J	0.096 J+	ND
DIBROMOCHLOROMETHANE	R	R	ND	ND	R	R	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND	ND	R	ND
ETHYLBENZENE	R	R	ND	ND	R	0.0059 J	ND
ISOPROPYLBENZENE (CUMENE)	R	R	ND	ND	R	0.0017 J	ND
M,P-XYLENE	R	0.00063 J	0.0018 J	ND	0.002 J	0.037 J+	ND
METHYL ACETATE	ND	ND	ND	ND	ND	R	ND
METHYL ETHYL KETONE (2-BUTANONE)	ND	ND	ND	ND	0.027	0.047 J+	ND
METHYL ISOBUTYL KETONE	R	R	ND	ND	R	R	ND

Table A-2c Analytical Results for Volatiles in Soil Boring Samples Collected from the Former Flintkote Plant Property

Analyte	Sample ID: OU2-SB03-Z1 Date: 12/4/2014	OU2-SB03-Z2 12/4/2014	OU2-SB03-Z3 12/4/2014
Volatile Organic Compounds, mg/kg			
1,1,1-TRICHLOROETHANE	R	ND	ND
1,1,2,2-TETRACHLOROETHANE	R	ND	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ND	ND	ND
1,1,2-TRICHLOROETHANE	R	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND
1,2,3-TRICHLOROBENZENE	ND	R	ND
1,2,4-TRICHLOROBENZENE	ND	R	ND
1,2-DIBROMO-3-CHLOROPROPANE	R	R	ND
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	R	ND	ND
1,2-DICHLOROBENZENE	ND	R	ND
1,2-DICHLOROETHANE	ND	ND	ND
1,2-DICHLOROPROPANE	R	ND	ND
1,3-DICHLOROBENZENE	ND	R	ND
1,4-DICHLOROBENZENE	ND	R	ND
1,4-DIOXANE (P-DIOXANE)	R	R	R
2-HEXANONE	R	ND	ND
ACETONE	ND	ND	ND
BENZENE	R	ND	ND
BROMOCHLOROMETHANE	ND	ND	ND
BROMODICHLOROMETHANE	R	ND	ND
BROMOFORM	R	R	ND
BROMOMETHANE	ND	ND	ND
CARBON DISULFIDE	ND	0.0015 J	ND
CARBON TETRACHLORIDE	R	ND	ND
CHLOROBENZENE	R	ND	ND
CHLOROETHANE	ND	ND	ND
CHLOROFORM	ND	ND	ND
CHLOROMETHANE	ND	ND	ND
CIS-1,2-DICHLOROETHYLENE	ND	ND	ND
CIS-1,3-DICHLOROPROPENE	R	ND	ND
CYCLOHEXANE	0.0015 J	0.0051 J	ND
DIBROMOCHLOROMETHANE	R	ND	ND
DICHLORODIFLUOROMETHANE	R	ND	ND
ETHYLBENZENE	R	ND	ND
ISOPROPYLBENZENE (CUMENE)	R	ND	ND
M,P-XYLENE	0.00059 J	0.0027 J	ND
METHYL ACETATE	ND	ND	ND
METHYL ETHYL KETONE (2-BUTANONE)	ND	ND	ND
METHYL ISOBUTYL KETONE	R	ND	ND

Table A-2c Analytical Results for Volatiles in Soil Boring Samples Collected from the Former Flintkote Plant Property

Analyte / Sample ID: / Date:	OU2-SB01-Z1 12/4/2014	OU2-SB01-Z1-FD 12/4/2014	OU2-SB01-Z2 12/4/2014	OU2-SB01-Z3 12/4/2014	OU2-SB02-Z1 12/4/2014	OU2-SB02-Z2 12/4/2014	OU2-SB02-Z3 12/4/2014
METHYLCYCLOHEXANE	0.0052 J	0.0085 J	0.0048 J	ND	0.0095 J	0.17 J+	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND	ND	ND
O-XYLENE (1,2-DIMETHYLBENZENE)	R	0.0004 J	0.0011 J	ND	0.0015 J	0.029 J+	ND
STYRENE	R	R	ND	ND	R	R	ND
TERT-BUTYL METHYL ETHER	ND	ND	ND	ND	ND	R	ND
TETRACHLOROETHYLENE (PCE)	R	R	ND	ND	R	R	ND
TOLUENE	0.00072 J	0.001 J	0.0029 J	ND	0.0033 J	0.074 J+	ND
TRANS-1,2-DICHLOROETHENE	ND	ND	ND	ND	ND	R	ND
TRANS-1,3-DICHLOROPROPENE	R	R	ND	ND	R	R	ND
TRICHLOROETHYLENE (TCE)	R	R	ND	ND	R	R	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	0.0012 J	R	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND	R	ND

Table A-2c Analytical Results for Volatiles in Soil Boring Samples Collected from the Former Flintkote Plant Property

Analyte	Sample ID: / Date: OU2-SB03-Z1 12/4/2014	OU2-SB03-Z2 12/4/2014	OU2-SB03-Z3 12/4/2014
METHYLCYCLOHEXANE	0.003 J	0.011 J	ND
METHYLENE CHLORIDE	ND	ND	ND
O-XYLENE (1,2-DIMETHYLBENZENE)	0.00049 J	0.002 J	ND
STYRENE	R	ND	ND
TERT-BUTYL METHYL ETHER	ND	ND	ND
TETRACHLOROETHYLENE (PCE)	R	ND	ND
TOLUENE	0.00062 J	0.0033 J	ND
TRANS-1,2-DICHLOROETHENE	ND	ND	ND
TRANS-1,3-DICHLOROPROPENE	R	ND	ND
TRICHLOROETHYLENE (TCE)	R	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND

Key:

Qualifiers

J = Estimated value

J+ = Estimated value with high bias

R= Rejected result

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

"-FD" denotes field duplicate sample

Table A-2d Analytical Results for Semi-volatiles in Soil Boring and Surface Soil Samples Collected from the Former Flintkote Plant Property

Analyte	Sample ID: / Date:	OU2-SB01-Z1 12/4/2014	OU2-SB01-Z1-FD 12/4/2014	OU2-SB01-Z2 12/4/2014	OU2-SB01-Z3 12/4/2014	OU2-SB02-Z1 12/4/2014	OU2-SB02-Z2 12/4/2014	OU2-SB02-Z3 12/4/2014	OU2-SB03-Z1 12/4/2014	OU2-SB03-Z2 12/4/2014
Semi-volatile Compunds, mg/kg										
1,2,4,5-TETRACHLOROBENZENE		ND	ND	ND	ND	ND	ND	ND	ND	ND
2,3,4,6-TETRACHLOROPHENOL		ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-TRICHLOROPHENOL		ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-TRICHLOROPHENOL		ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DICHLOROPHENOL		ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DIMETHYLPHENOL		ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DINITROPHENOL		ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DINITROTOLUENE		ND	ND	ND	ND	ND	ND	ND	ND	ND
2,6-DINITROTOLUENE		ND	ND	ND	ND	ND	ND	ND	ND	ND
2-CHLORONAPHTHALENE		ND	ND	ND	ND	ND	ND	ND	ND	ND
2-CHLOROPHENOL		ND	ND	ND	ND	ND	ND	ND	ND	ND
2-METHYLNAPHTHALENE		0.54 J	0.71 J	ND	ND	1.5 J	1.7 J	ND	1 J	0.13 J
2-METHYLPHENOL (O-CRESOL)		ND	ND	ND	ND	ND	ND	ND	ND	ND
2-NITROANILINE		ND	ND	ND	ND	ND	ND	ND	ND	ND
2-NITROPHENOL		ND	ND	ND	ND	ND	ND	ND	ND	ND
3,3'-DICHLOROBENZIDINE		ND	ND	ND	ND	ND	ND	ND	ND	ND
3-NITROANILINE		ND	ND	ND	ND	ND	ND	ND	ND	ND
4,6-DINITRO-2-METHYLPHENOL		ND	ND	ND	ND	ND	ND	ND	ND	ND
4-BROMOPHENYL PHENYL ETHER		ND	ND	ND	ND	ND	ND	ND	ND	ND
4-CHLORO-3-METHYLPHENOL		ND	ND	ND	ND	ND	ND	ND	ND	ND
4-CHLOROANILINE		ND	ND	ND	ND	ND	ND	ND	ND	ND
4-CHLOROPHENYL PHENYL ETHER		ND	ND	ND	ND	ND	ND	ND	ND	ND
4-METHYLPHENOL (P-CRESOL)		ND	ND	ND	ND	ND	ND	ND	ND	ND
4-NITROANILINE		ND	ND	ND	ND	ND	ND	ND	ND	ND
4-NITROPHENOL		ND	ND	ND	ND	ND	ND	ND	ND	ND
ACENAPHTHENE		ND	ND	ND	ND	ND	ND	ND	ND	ND
ACENAPHTHYLENE		ND	ND	ND	ND	ND	ND	ND	0.91 J	ND
ACETOPHENONE		ND	ND	ND	ND	ND	ND	ND	0.21 J	ND
ANTHRACENE		ND	0.18 J	ND	ND	ND	ND	ND	0.36 J	0.11 J
ATRAZINE		ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZALDEHYDE		ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZO(A)ANTHRACENE		0.5 J	0.69 J	ND	0.07 J	0.75 J	0.59 J	ND	1.2 J	0.53 J
BENZO(A)PYRENE		0.43 J	0.6 J	ND	0.052 J	0.56 J	0.46 J	ND	1.4 J	0.5 J
BENZO(B)FLUORANTHENE		0.59 J	0.93 J	ND	0.085 J	0.85 J	0.77 J	ND	2.6	0.73 J
BENZO(G,H,I)PERYLENE		0.44 J	0.45 J	ND	ND	ND	0.22 J	ND	0.64 J	0.16 J
BENZO(K)FLUORANTHENE		ND	0.26 J	ND	ND	ND	0.19 J	ND	0.81 J	0.24 J
BENZYL BUTYL PHTHALATE		ND	ND	ND	ND	ND	ND	ND	ND	ND
BIPHENYL (DIPHENYL)		ND	ND	ND	ND	ND	ND	ND	ND	ND
BIS(2-CHLOROETHOXY) METHANE		ND	ND	ND	ND	ND	ND	ND	ND	ND
BIS(2-CHLOROETHYL) ETHER		ND	ND	ND	ND	ND	ND	ND	ND	ND

Table A-2d Analytical Results for Semi-volatiles in Soil Boring and Surface Soil Samples Collected from the Former Flintkote Plant Property

Analyte	Sample ID: / Date: OU2-SB03-Z3 12/4/2014	OU2-SS15-Z1 1/25/2016	OU2-SS16-Z1 1/26/2016	OU2-SS17-Z1 1/26/2016
Semi-volatile Compunds, mg/kg				
1,2,4,5-TETRACHLOROBENZENE	ND	--	--	--
2,3,4,6-TETRACHLOROPHENOL	ND	--	--	--
2,4,5-TRICHLOROPHENOL	ND	--	--	--
2,4,6-TRICHLOROPHENOL	ND	--	--	--
2,4-DICHLOROPHENOL	ND	--	--	--
2,4-DIMETHYLPHENOL	ND	--	--	--
2,4-DINITROPHENOL	ND	--	--	--
2,4-DINITROTOLUENE	ND	--	--	--
2,6-DINITROTOLUENE	ND	--	--	--
2-CHLORONAPHTHALENE	ND	--	--	--
2-CHLOROPHENOL	ND	--	--	--
2-METHYLNAPHTHALENE	ND	ND	ND	ND
2-METHYLPHENOL (O-CRESOL)	ND	--	--	--
2-NITROANILINE	ND	--	--	--
2-NITROPHENOL	ND	--	--	--
3,3'-DICHLOROBENZIDINE	ND	--	--	--
3-NITROANILINE	ND	--	--	--
4,6-DINITRO-2-METHYLPHENOL	ND	--	--	--
4-BROMOPHENYL PHENYL ETHER	ND	--	--	--
4-CHLORO-3-METHYLPHENOL	ND	--	--	--
4-CHLOROANILINE	ND	--	--	--
4-CHLOROPHENYL PHENYL ETHER	ND	--	--	--
4-METHYLPHENOL (P-CRESOL)	ND	--	--	--
4-NITROANILINE	ND	--	--	--
4-NITROPHENOL	ND	--	--	--
ACENAPHTHENE	ND	ND	0.34 J	0.19 J
ACENAPHTHYLENE	ND	ND	0.27 J	ND
ACETOPHENONE	ND	--	--	--
ANTHRACENE	ND	0.071 J	0.99 J	0.28 J
ATRAZINE	ND	--	--	--
BENZALDEHYDE	ND	--	--	--
BENZO(A)ANTHRACENE	0.036 J	0.21 J	4.6	0.66
BENZO(A)PYRENE	0.033 J	0.19 J	3.5	0.53
BENZO(B)FLUORANTHENE	0.045 J	0.25	5.3	0.72
BENZO(G,H,I)PERYLENE	ND	0.13 J	2.1	0.37
BENZO(K)FLUORANTHENE	ND	0.087 J	2.1	0.27 J
BENZYL BUTYL PHTHALATE	ND	--	--	--
BIPHENYL (DIPHENYL)	ND	--	--	--
BIS(2-CHLOROETHOXY) METHANE	ND	--	--	--
BIS(2-CHLOROETHYL) ETHER	ND	--	--	--

Table A-2d Analytical Results for Semi-volatiles in Soil Boring and Surface Soil Samples Collected from the Former Flintkote Plant Property

Analyte / Sample ID: / Date:	OU2-SB01-Z1 12/4/2014	OU2-SB01-Z1-FD 12/4/2014	OU2-SB01-Z2 12/4/2014	OU2-SB01-Z3 12/4/2014	OU2-SB02-Z1 12/4/2014	OU2-SB02-Z2 12/4/2014	OU2-SB02-Z3 12/4/2014	OU2-SB03-Z1 12/4/2014	OU2-SB03-Z2 12/4/2014
BIS(2-CHLOROISOPROPYL) ETHER	ND	ND	ND	ND	ND	ND	ND	ND	ND
BIS(2-ETHYLHEXYL) PHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND	ND
CAPROLACTAM	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBAZOLE	ND	ND	ND	ND	ND	ND	ND	0.17 J	ND
CHRYSENE	0.57 J	0.84 J	ND	0.069 J	0.93 J	0.83 J	ND	1.6 J	0.61 J
DIBENZ(A,H)ANTHRACENE	ND	ND	ND	ND	ND	ND	ND	0.21 J	ND
DIBENZOFURAN	ND	0.24 J	ND	ND	0.49 J	0.49 J	ND	0.34 J	ND
DIETHYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND	ND
DIMETHYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND	ND
DI-N-BUTYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND	ND
DI-N-OCTYLPHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND	ND
FLUORANTHENE	0.82 J	1.3 J	ND	0.11 J	1.1 J	0.86 J	ND	2.0 J	0.87 J
FLUORENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROBUTADIENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROCYCLOPENTADIENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND
INDENO(1,2,3-C,D)PYRENE	ND	0.3 J	ND	0.036 J	ND	0.24 J	ND	0.86 J	0.23 J
ISOPHORONE	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	0.34 J	0.41 J	ND	ND	0.99 J	1.1 J	ND	0.7 J	ND
NITROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-NITROSODI-N-PROPYLAMINE	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-NITROSODIPHENYLAMINE	ND	ND	ND	ND	ND	ND	ND	ND	ND
PENTACHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND
PHENANTHRENE	0.78 J	1.2 J	ND	ND	1.4 J	1.2 J	ND	1.4 J	0.45 J
PHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND
PYRENE	0.8 J	1.2 J	ND	0.099 J	1.1 J	0.88 J	ND	1.7 J	0.75 J

Table A-2d Analytical Results for Semi-volatiles in Soil Boring and Surface Soil Samples Collected from the Former Flintkote Plant Property

Analyte	Sample ID: OU2-SB03-Z3 Date: 12/4/2014	OU2-SS15-Z1 1/25/2016	OU2-SS16-Z1 1/26/2016	OU2-SS17-Z1 1/26/2016
BIS(2-CHLOROISOPROPYL) ETHER	ND	--	--	--
BIS(2-ETHYLHEXYL) PHTHALATE	ND	--	--	--
CAPROLACTAM	ND	--	--	--
CARBAZOLE	ND	--	--	--
CHRYSENE	0.036 J	0.22 J	4.3	0.68
DIBENZ(A,H)ANTHRACENE	ND	ND	0.68 J	0.11 J
DIBENZOFURAN	ND	--	--	--
DIETHYL PHTHALATE	ND	--	--	--
DIMETHYL PHTHALATE	ND	--	--	--
DI-N-BUTYL PHTHALATE	ND	--	--	--
DI-N-OCTYLPHTHALATE	ND	--	--	--
FLUORANTHENE	0.07 J	0.48	11	1.6
FLUORENE	ND	ND	0.44 J	0.16 J
HEXACHLOROBENZENE	ND	--	--	--
HEXACHLOROBUTADIENE	ND	--	--	--
HEXACHLOROCYCLOPENTADIENE	ND	--	--	--
HEXACHLOROETHANE	ND	--	--	--
INDENO(1,2,3-C,D)PYRENE	ND	0.11 J	2.0	0.27 J
ISOPHORONE	ND	--	--	--
NAPHTHALENE	ND	ND	ND	0.13 J
NITROBENZENE	ND	--	--	--
N-NITROSODI-N-PROPYLAMINE	ND	--	--	--
N-NITROSODIPHENYLAMINE	ND	--	--	--
PENTACHLOROPHENOL	ND	ND	ND	ND
PHENANTHRENE	0.064 J	0.42	4.8	1.6
PHENOL	ND	--	--	--
PYRENE	0.058 J	0.43	7.8	1.3

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

-- = Analyte not analyzed for

"-FD" denotes field duplicate sample

Table A-2e Analytical Results for Pesticides in Soil Boring and Surface Soil Samples Collected from the Former Flintkote Plant Property

Sample ID: / Date: / Analyte	OU2-SB01-Z1 12/4/2014	OU2-SB01-Z1-FD 12/4/2014	OU2-SB01-Z2 12/4/2014	OU2-SB01-Z3 12/4/2014	OU2-SB02-Z1 12/4/2014	OU2-SB02-Z2 12/4/2014	OU2-SB02-Z3 12/4/2014	OU2-SB03-Z1 12/4/2014	OU2-SB03-Z2 12/4/2014
Pesticides, mg/kg									
ALDRIN	ND	ND	ND	ND	ND	ND	ND	ND	ND
ALPHA BHC (ALPHA	ND	ND	ND	ND	ND	ND	ND	ND	ND
ALPHA ENDOSULFAN	ND	ND	ND	ND	ND	0.011 J+	ND	ND	ND
BETA BHC (BETA	ND	ND	ND	ND	ND	ND	ND	ND	ND
BETA ENDOSULFAN	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-CHLORDANE	ND	ND	ND	ND	ND	ND	ND	ND	ND
DELTA BHC (DELTA	ND	ND	ND	ND	ND	ND	ND	ND	ND
DIELDRIN	ND	ND	ND	ND	ND	ND	ND	0.10 J	ND
ENDOSULFAN SULFATE	ND	ND	ND	ND	ND	ND	ND	R	R
ENDRIN	ND	ND	ND	ND	ND	ND	ND	ND	ND
ENDRIN ALDEHYDE	ND	ND	ND	ND	ND	0.049 NJ	ND	0.031 NJ	0.0094 NJ
ENDRIN KETONE	ND	ND	ND	ND	ND	0.061 J+	ND	0.048 J+	0.014
GAMMA BHC (LINDANE)	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEPTACHLOR	ND	ND	ND	ND	0.0071 J	0.01 J+	ND	0.004 J	ND
HEPTACHLOR EPOXIDE	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHOXYCHLOR	ND	ND	ND	ND	ND	ND	ND	0.22 J+	0.070 J
P,P'-DDD	0.048 NJ	0.031 J	ND	ND	0.065 NJ	0.085 J+	ND	R	0.015 NJ
P,P'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND
P,P'-DDT	ND	ND	ND	0.00034 J	ND	0.023 NJ	ND	0.060 J+	0.0047 NJ
TOXAPHENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-CHLORDANE	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table A-2e Analytical Results for Pesticides in Soil Boring and Surface Soil Samples Collected from the Former Flintkote Plant Property

Sample ID: / Date: / Analyte	OU2-SB03-Z3 12/4/2014	OU2-SS15-Z1 1/25/2016	OU2-SS16-Z1 1/26/2016	OU2-SS17-Z1 1/26/2016
Pesticides, mg/kg				
ALDRIN	ND	ND	ND	ND
ALPHA BHC (ALPHA	ND	ND	ND	ND
ALPHA ENDOSULFAN	ND	ND	ND	ND
BETA BHC (BETA	ND	ND	ND	ND
BETA ENDOSULFAN	ND	ND	ND	ND
CIS-CHLORDANE	ND	ND	ND	ND
DELTA BHC (DELTA	0.0024	ND	ND	ND
DIELDRIN	ND	ND	ND	ND
ENDOSULFAN SULFATE	ND	ND	ND	ND
ENDRIN	ND	ND	ND	ND
ENDRIN ALDEHYDE	ND	ND	ND	ND
ENDRIN KETONE	ND	ND	ND	ND
GAMMA BHC (LINDANE)	ND	ND	ND	ND
HEPTACHLOR	ND	ND	ND	ND
HEPTACHLOR EPOXIDE	ND	ND	ND	ND
METHOXYCHLOR	ND	ND	ND	ND
P,P'-DDD	0.0039	ND	ND	ND
P,P'-DDE	ND	0.00099 J	ND	ND
P,P'-DDT	ND	0.0028 J	ND	ND
TOXAPHENE	ND	ND	ND	ND
TRANS-CHLORDANE	ND	ND	ND	ND

Key:

Qualifiers

J = Estimated value

J+ = Estimated value with high bias

NJ = Tentatively identified/estimated value

R= Rejected result

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

"-FD" denotes field duplicate sample

Table A-2f Analytical Results for PCB Congeners in Soil Boring Samples Collected from the Former Flintkote Plant Property

Analyte	Sample ID: OU2-SB02-Z1 Date: 12/4/2014
PCB Congeners, ng/kg	
CHLOROBIPHENYL; 2- (PCB 1)	ND
CHLOROBIPHENYL; 3- (PCB 2)	ND
CHLOROBIPHENYL; 4- (PCB 3)	ND
COELUTE: OCTACHLOROBIPHENYL: 2,2',3,3',4,5,5',6/2,2',3,3',4,5,5',6'	215
COELUTE: TETRACHLOROBIPHENYL: 2,2',3,6/2,2',4,6'	ND
COLUTE: HEPTACHLOROBIPHENYLS; 2,2',3,3',4,4',6-(PCB 171)/ 2,2',3,3',4,5,6-(PCB 173)	ND
COLUTE: HEPTACHLOROBIPHENYLS; 2,2',3,4,4',5,5'-(PCB 180)/ 2,3,3',4',5,5',6-(PCB 193)	200
COLUTE: HEXACHLOROBIPHENYLS; 2,2',3,3',4,4'-(PCB 128)/ 2,3,4,4',5,6-(PCB 166)	ND
COLUTE: HEXACHLOROBIPHENYLS; 2,2',3,3',4,5-(PCB 129)/ 2,2',3,4,4',5'-(PCB 138)/ 2,3,3',4',5,6 (PCB 163)	180
COLUTE: HEXACHLOROBIPHENYLS; 2,2',3,3',5,6'-(PCB 135)/ 2,2',3,5,5',6-(PCB 151)	58.3 J
COLUTE: HEXACHLOROBIPHENYLS; 2,2',3,4,4',6-(PCB 139)/ 2,2',3,4,4',6'-(PCB 140)	ND
COLUTE: HEXACHLOROBIPHENYLS; 2,2',3,4',5,6-(PCB 147)/ 2,2',3,4',5',6-(PCB 149)	123
COLUTE: HEXACHLOROBIPHENYLS; 2,2',4,4',5,5'-(PCB 153)/ 2,3',4,4',5',6-(PCB 168)	120
COLUTE: HEXACHLOROBIPHENYLS; 2,3,3',4,4',5-(PCB 156)/ 2,3,3',4,4',5'-(PCB 157)	ND
COLUTE: PENTACHLOROBIPHENYLS; 2,2',3,4,4'-(PCB 85)/2,3,4,5,6-(PCB 116)/ 2,3,4',5,6-(PCB 117)	ND
COLUTE: PENTACHLOROBIPHENYLS; 2,2',3,4,5-(PCB 86)/ 2,2',3,4,5'-(PCB 87)/ 2,2',3,4',5'-(PCB 97) /2,3,3',4,6-(PCB109) / 2,3',4,4',6-(PCB 119)/ 2,3',4',5',6-(PCB 125)	ND
COLUTE: PENTACHLOROBIPHENYLS; 2,2',3,4',5-(PCB 90)/2,2',4,5,5'-(PCB 101)/ 2,3,3',5',6-(PCB 113)	89.9
COLUTE: PENTACHLOROBIPHENYLS; 2,2',3,4',6'-(PCB 98)/ 2,2',4,5,6'-(PCB 102)	ND
COLUTE: PENTACHLOROBIPHENYLS; 2,2',3,5,6-(PCB 93)/2,2',4,4',6-(PCB 100)	ND
COLUTE: PENTACHLOROBIPHENYLS; 2,3,3',4,5'-(PCB 108)/ 2,3',4',5,5'-(PCB 124)	ND
COLUTE: PENTACHLOROBIPHENYLS; 2,3,3',4',6-(PCB 110)/ 2,3,4,4',6-(PCB 115)	180
COLUTE: TETRACHLOROBIPHENYLS; 2,2',3,3'-(PCB 40)/ 2,3',4',6-(PCB 71)	ND
COLUTE: TETRACHLOROBIPHENYLS; 2,2',3,5'-(PCB 44)/ 2,2',4,4'-(PCB 47)/ 2,3,5,6-(PCB 65)	68.3
COLUTE: TETRACHLOROBIPHENYLS; 2,2',4,5'-(PCB 49)/ 2,3',4,6-(PCB 69)	ND
COLUTE: TETRACHLOROBIPHENYLS; 2,2',4,6-(PCB 50)/ 2,2',5,6'-(PCB 53)	ND
COLUTE: TETRACHLOROBIPHENYLS; 2,3,3',6-(PCB 59)/ 2,3,4,6-(PCB 62)/ 2,4,4',6-(PCB 75)	ND
COLUTE: TETRACHLOROBIPHENYLS; 2,3,4,5-(PCB 61)/ 2,3',4',5-(PCB 70)/ 2,4,4',5-(PCB 74)/ 2,3',4',5'-(PCB 76)	88.8
COLUTE: TRICHLOROBIPHENYLS; 2,2',5-(PCB 18)/ 2,4,6-(PCB 30)	ND
COLUTE: TRICHLOROBIPHENYLS; 2,3,3'-(PCB 20)/ 2,4,4'-(PCB 28)	ND
COLUTE: TRICHLOROBIPHENYLS; 2,3,4-(PCB 21)/ 2,3',4'-(PCB 33)	ND
COLUTE: TRICHLOROBIPHENYLS; 2,3',5-(PCB 26)/ 2,4,5-(PCB 29)	ND
DECACHLOROBIPHENYL (PCB 209)	1070
DICHLOROBIPHENYL	84.3
DICHLOROBIPHENYL, 2,2'- (PCB 4)	ND
DICHLOROBIPHENYL; 2,3- (PCB 5)	ND
DICHLOROBIPHENYL; 2,3'- (PCB 6)	ND
DICHLOROBIPHENYL; 2,4- (PCB 7)	ND
DICHLOROBIPHENYL; 2,4'- (PCB 8)	ND

Table A-2f Analytical Results for PCB Congeners in Soil Boring Samples Collected from the Former Flintkote Plant Property

Analyte	Sample ID: OU2-SB02-Z1 Date: 12/4/2014
DICHLOROBIPHENYL; 2,5- (PCB 9)	ND
DICHLOROBIPHENYL; 2,6- (PCB 10)	ND
DICHLOROBIPHENYL; 3,3'- (PCB 11)	84.3
DICHLOROBIPHENYL; 3,4 -(PCB 12)/ 3,4'-(PCB 13)	ND
DICHLOROBIPHENYL; 3,5- (PCB 14)	ND
DICHLOROBIPHENYL; 4,4'- (PCB 15)	ND
HEPTACHLOROBIPHENYL; 2,2',3,3',4,4',5- (PCB 170)	61.9
HEPTACHLOROBIPHENYL; 2,2',3,3',4,5,5'- (PCB 172)	ND
HEPTACHLOROBIPHENYL; 2,2',3,3',4,5,6'- (PCB 174)	96
HEPTACHLOROBIPHENYL; 2,2',3,3',4,5',6- (PCB 175)	ND
HEPTACHLOROBIPHENYL; 2,2',3,3',4',5,6- (PCB 177)	47.9
HEPTACHLOROBIPHENYL; 2,2',3,3',4,6,6'- (PCB 176)	ND
HEPTACHLOROBIPHENYL; 2,2',3,3',5,5',6- (PCB 178)	24.2
HEPTACHLOROBIPHENYL; 2,2',3,3',5,6,6'- (PCB 179)	39.5
HEPTACHLOROBIPHENYL; 2,2',3,4,4',5,6- (PCB 181)	ND
HEPTACHLOROBIPHENYL; 2,2',3,4,4',5,6'- (PCB 182)	ND
HEPTACHLOROBIPHENYL; 2,2',3,4,4',6,6'- (PCB 184)	ND
HEPTACHLOROBIPHENYL; 2,2',3,4',5,5',6- (PCB 187)	133
HEPTACHLOROBIPHENYL; 2,2',3,4,5,6,6'- (PCB 186)	ND
HEPTACHLOROBIPHENYL; 2,2',3,4',5,6,6'- (PCB 188)	ND
HEPTACHLOROBIPHENYL; 2,3,3',4,4',5,5'- (PCB 189)	ND
HEPTACHLOROBIPHENYL; 2,3,3',4,4',5,6- (PCB 190)	ND
HEPTACHLOROBIPHENYL; 2,3,3',4,4',5',6- (PCB 191)	ND
HEPTACHLOROBIPHENYL; 2,3,3',4,5,5',6- (PCB 192)	ND
HEXACHLOROBIPHENYL; 2,2',3,3',4,5'- (PCB 130)	ND
HEXACHLOROBIPHENYL; 2,2',3,3',4,6- (PCB 131)	ND
HEXACHLOROBIPHENYL; 2,2',3,3',4,6'- (PCB 132)	55.8
HEXACHLOROBIPHENYL; 2,2',3,3',5,5'- (PCB 133)	ND
HEXACHLOROBIPHENYL; 2,2',3,3',5,6- (PCB 134)	ND
HEXACHLOROBIPHENYL; 2,2',3,3',6,6'- (PCB 136)	24.1
HEXACHLOROBIPHENYL; 2,2',3,4,4',5- (PCB 137)	ND
HEXACHLOROBIPHENYL; 2,2',3,4,5,5'- (PCB 141)	28
HEXACHLOROBIPHENYL; 2,2',3,4',5,5'- (PCB 146)	ND
HEXACHLOROBIPHENYL; 2,2',3,4,5,6- (PCB 142)	ND
HEXACHLOROBIPHENYL; 2,2',3,4,5,6'- (PCB 143)	ND
HEXACHLOROBIPHENYL; 2,2',3,4,5',6- (PCB 144)	ND
HEXACHLOROBIPHENYL; 2,2',3,4',5,6'- (PCB 148)	ND
HEXACHLOROBIPHENYL; 2,2',3,4,6,6'- (PCB 145)	ND
HEXACHLOROBIPHENYL; 2,2',3,4',6,6'- (PCB 150)	ND
HEXACHLOROBIPHENYL; 2,2',3,5,6,6'- (PCB 152)	ND

Table A-2f Analytical Results for PCB Congeners in Soil Boring Samples Collected from the Former Flintkote Plant Property

Analyte	Sample ID: OU2-SB02-Z1 Date: 12/4/2014
HEXACHLOROBIPHENYL; 2,2',4,4',5',6- (PCB 154)	ND
HEXACHLOROBIPHENYL; 2,2',4,4',6,6'- (PCB 155)	ND
HEXACHLOROBIPHENYL; 2,3,3',4,4',6- (PCB 158)	19.4
HEXACHLOROBIPHENYL; 2,3,3',4,5,5'- (PCB 159)	ND
HEXACHLOROBIPHENYL; 2,3,3',4',5,5'- (PCB 162)	ND
HEXACHLOROBIPHENYL; 2,3,3',4,5,6- (PCB 160)	ND
HEXACHLOROBIPHENYL; 2,3,3',4,5',6- (PCB 161)	ND
HEXACHLOROBIPHENYL; 2,3,3',4',5',6- (PCB 164)	ND
HEXACHLOROBIPHENYL; 2,3,3',5,5',6- (PCB 165)	ND
HEXACHLOROBIPHENYL; 2,3',4,4',5,5'- (PCB 167)	ND
HEXACHLOROBIPHENYL; 3,3',4,4',5,5'- (PCB 169)	ND
MONOCHLOROBIPHENYL	ND
NONACHLOROBIPHENYL	1240
NONACHLOROBIPHENYL; 2,2',3,3',4,4',5,5',6- (PCB 206)	815
NONACHLOROBIPHENYL; 2,2',3,3',4,4',5,6,6'- (PCB 207)	57.3
NONACHLOROBIPHENYL; 2,2',3,3',4,5,5',6,6'- (PCB 208)	367
OCTACHLOROBIPHENYL (MIXED ISOMERS)	550 J
OCTACHLOROBIPHENYL; 2,2',3,3',4,4',5,5'- (PCB 194)	72.1
OCTACHLOROBIPHENYL; 2,2',3,3',4,4',5,6- (PCB 195)	21.9
OCTACHLOROBIPHENYL; 2,2',3,3',4,4',5,6'- (PCB 196)	55.9 J
OCTACHLOROBIPHENYL; 2,2',3,3',4,5',6,6'- (PCB 201)	23
OCTACHLOROBIPHENYL; 2,2',3,3',5,5',6,6'- (PCB 202)	60.2
OCTACHLOROBIPHENYL; 2,2',3,4,4',5,5',6- (PCB 203)	101
OCTACHLOROBIPHENYL; 2,2',3,4,4',5,6,6'- (PCB 204)	ND
OCTACHLOROBIPHENYL; 2,3,3',4,4',5,5',6- (PCB 205)	ND
PCB, TOTAL	5150
PCB-183/185	66.2
PCB-197/200	ND
PENTACHLOROBIPHENYL:2,2',3,4,6/2,2'3,4',6	ND
PENTACHLOROBIPHENYL; 2,2',3,3',4- (PCB 82)	ND
PENTACHLOROBIPHENYL; 2,2',3,3',5- (PCB 83)	ND
PENTACHLOROBIPHENYL; 2,2',3,3',6- (PCB 84)	19.2
PENTACHLOROBIPHENYL; 2,2',3,4,6'- (PCB 89)	ND
PENTACHLOROBIPHENYL; 2,2',3,5,5'- (PCB 92)	ND
PENTACHLOROBIPHENYL; 2,2',3,5,6'- (PCB 94)	ND
PENTACHLOROBIPHENYL; 2,2',3,5',6- (PCB 95)	68.3
PENTACHLOROBIPHENYL; 2,2',3,6,6'- (PCB 96)	ND
PENTACHLOROBIPHENYL; 2,2',4,4',5- (PCB 99)	35.9
PENTACHLOROBIPHENYL; 2,2',4,5',6- (PCB 103)	ND
PENTACHLOROBIPHENYL; 2,2',4,6,6'- (PCB 104)	ND

Table A-2f Analytical Results for PCB Congeners in Soil Boring Samples Collected from the Former Flintkote Plant Property

Analyte	Sample ID: OU2-SB02-Z1 Date: 12/4/2014
PENTACHLOROBIPHENYL; 2,3,3',4,4'- (PCB 105)	43.1
PENTACHLOROBIPHENYL; 2,3,3',4,5- (PCB 106)	ND
PENTACHLOROBIPHENYL; 2,3,3',4',5- (PCB 107)	ND
PENTACHLOROBIPHENYL; 2',3,3',4,5- (PCB 122)	ND
PENTACHLOROBIPHENYL; 2,3,3',5,5'- (PCB 111)	ND
PENTACHLOROBIPHENYL; 2,3,3',5,6- (PCB 112)	ND
PENTACHLOROBIPHENYL; 2,3,4,4',5- (PCB 114)	ND
PENTACHLOROBIPHENYL; 2,3',4,4',5- (PCB 118)	83
PENTACHLOROBIPHENYL; 2',3,4,4',5- (PCB 123)	ND
PENTACHLOROBIPHENYL; 2,3',4,5,5'- (PCB 120)	ND
PENTACHLOROBIPHENYL; 2,3',4,5',6- (PCB 121)	ND
PENTACHLOROBIPHENYL; 3,3',4,4',5- (PCB 126)	ND
PENTACHLOROBIPHENYL; 3,3',4,5,5'- (PCB 127)	ND
TEQ PCB	0.0038
TETRACHLOROBIPHENYL	380
TETRACHLOROBIPHENYL; 2,2',3,4- (PCB 41)	ND
TETRACHLOROBIPHENYL; 2,2',3,4'- (PCB 42)	ND
TETRACHLOROBIPHENYL; 2,2',3,5- (PCB 43)	ND
TETRACHLOROBIPHENYL; 2,2',3,6'- (PCB 46)	ND
TETRACHLOROBIPHENYL; 2,2',4,5- (PCB 48)	ND
TETRACHLOROBIPHENYL; 2,2',5,5'- (PCB 52)	81
TETRACHLOROBIPHENYL; 2,2',6,6'- (PCB 54)	ND
TETRACHLOROBIPHENYL; 2,3,3',4- (PCB 55)	ND
TETRACHLOROBIPHENYL; 2,3,3',4'- (PCB 56)	38.6
TETRACHLOROBIPHENYL; 2,3,3',5- (PCB 57)	ND
TETRACHLOROBIPHENYL; 2,3,3',5'- (PCB 58)	ND
TETRACHLOROBIPHENYL; 2,3,4,4'- (PCB 60)	ND
TETRACHLOROBIPHENYL; 2,3',4,4'- (PCB 66)	63.1
TETRACHLOROBIPHENYL; 2,3,4',5- (PCB 63)	ND
TETRACHLOROBIPHENYL; 2,3',4,5- (PCB 67)	ND
TETRACHLOROBIPHENYL; 2,3',4,5'- (PCB 68)	ND
TETRACHLOROBIPHENYL; 2,3,4',6- (PCB 64)	39.7
TETRACHLOROBIPHENYL; 2,3',5,5'- (PCB 72)	ND
TETRACHLOROBIPHENYL; 2,3',5',6- (PCB 73)	ND
TETRACHLOROBIPHENYL; 3,3',4,4'- (PCB 77)	ND
TETRACHLOROBIPHENYL; 3,3',4,5- (PCB 78)	ND
TETRACHLOROBIPHENYL; 3,3',4,5'- (PCB 79)	ND
TETRACHLOROBIPHENYL; 3,3',5,5'- (PCB 80)	ND
TETRACHLOROBIPHENYL; 3,4,4',5- (PCB 81)	ND
TRICHLOROBIPHENYL	30.1

Table A-2f Analytical Results for PCB Congeners in Soil Boring Samples Collected from the Former Flintkote Plant Property

Analyte	Sample ID: OU2-SB02-Z1 Date: 12/4/2014
TRICHLOROBIPHENYL; 2,2',3- (PCB 16)	ND
TRICHLOROBIPHENYL; 2,2',4- (PCB 17)	ND
TRICHLOROBIPHENYL; 2,2',6- (PCB 19)	ND
TRICHLOROBIPHENYL; 2,3,4'- (PCB 22)	ND
TRICHLOROBIPHENYL; 2,3',4- (PCB 25)	ND
TRICHLOROBIPHENYL; 2,3,5- (PCB 23)	ND
TRICHLOROBIPHENYL; 2',3,5- (PCB 34)	ND
TRICHLOROBIPHENYL; 2,3,6- (PCB 24)	ND
TRICHLOROBIPHENYL; 2,3',6- (PCB 27)	ND
TRICHLOROBIPHENYL; 2,4',5- (PCB 31)	30.1
TRICHLOROBIPHENYL; 2,4',6- (PCB 32)	ND
TRICHLOROBIPHENYL; 3,3',4- (PCB 35)	ND
TRICHLOROBIPHENYL; 3,3',5- (PCB 36)	ND
TRICHLOROBIPHENYL; 3,4,4'- (PCB 37)	ND
TRICHLOROBIPHENYL; 3,4,5- (PCB 38)	ND
TRICHLOROBIPHENYL; 3,4',5- (PCB 39)	ND
TOTAL HEPTACHLOROBIPHENYLS	669
TOTAL HEXACHLOROBIPHENYLS	608 J
TOTAL PENTACHLOROBIPHENYLS	519

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

ng/kg = Nanograms per kilogram

Table A-2g Analytical Results for Dioxins/Furans in Soil Boring Samples Collected from the Former Flintkote Plant Property

Analyte	Sample ID: OU2-SB02-Z1 Date: 12/4/2014
Dioxins/Furans, ng/kg	
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	8.2
1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN	58.6
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	0.604 J
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	1.27 J
1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN	0.547 J
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	0.975 J
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	2.06 J
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	0.426 EMPCJ
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	1.27 J
1,2,3,7,8-PENTACHLORODIBENZOFURAN	1.11 J
1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN	0.522 J
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	1.12 J
2,3,4,7,8-PENTACHLORODIBENZOFURAN	2.15 J
2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0)	2.95
2,3,7,8-TETRACHLORODIBENZOFURAN	1.46
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ND
HEPTACHLORODIBENZOFURANS	26
HEPTACHLORODIBENZO-P-DIOXINS	121
HEXACHLORODIBENZOFURAN	19.6
HEXACHLORODIBENZO-P-DIOXIN	19.5
OCTACHLORODIBENZOFURAN	14.4
OCTACHLORODIBENZO-P-DIOXIN	513
PENTACHLORO DIBENZOFURAN	25.6
PENTACHLORODIBENSO-P-DIOXIN	11
TETRACHLORODIBENZOFURAN	20.9
TETRACHLORODIBENZO-P-DIOXIN	9.69

Key:

Qualifiers

J = Estimated value

EMPC = Estimated Maximum Possible Concentration

Other

ND = Sample is "non-detect"

ng/kg = Nanograms per kilogram

Table A-3a Analytical Results for PCB Aroclors and TOC in Test Pit Samples Collected from the Former Flintkote Plant Property

Sample ID: / Date: / Analyte	OU2-TP01-01 5/19/2015	OU2-TP01-02 5/19/2015	OU2-TP02-01 6/29/2015	OU2-TP03-01 6/29/2015	OU2-TP03-02 6/29/2015	OU2-TP05-01 6/29/2015	OU2-TP06-01 6/29/2015	OU2-TP07-Z1 7/14/2015	OU2-TP07-Z2 7/14/2015
PCB Aroclors, mg/kg									
PCB-1016 (AROCLOR 1016)	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1221 (AROCLOR 1221)	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1232 (AROCLOR 1232)	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1242 (AROCLOR 1242)	ND	ND	ND	ND	ND	ND	ND	1.1 J	1.2 J
PCB-1248 (AROCLOR 1248)	ND	ND	0.017 J	0.034 J	0.045 J	2.0 J	0.033 J	ND	ND
PCB-1254 (AROCLOR 1254)	0.0026	ND	ND	ND	ND	ND	ND	1.1 J	0.57 J
PCB-1260 (AROCLOR 1260)	0.0013	ND	0.032	0.011 J	0.011	0.48 J	0.037	0.33 J	0.19
PCB-1262 (AROCLOR 1262)	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1268 (AROCLOR 1268)	ND	ND	0.032 J	0.0044 J	0.0066 J	0.10 J	0.0093 J	0.16 J	0.078 J

Table A-3a Analytical Results for PCB Aroclors and TOC in Test Pit Samples Collected from the Former Flintkote Plant Property

Sample ID: / Date: / Analyte	OU2-TP08-Z1 7/14/2015	OU2-TP09-Z1 7/14/2015	OU2-TP09-Z2 7/14/2015
PCB Aroclors, mg/kg			
PCB-1016 (AROCLOR 1016)	ND	ND	ND
PCB-1221 (AROCLOR 1221)	ND	ND	ND
PCB-1232 (AROCLOR 1232)	ND	ND	ND
PCB-1242 (AROCLOR 1242)	0.26 J	0.53 J	0.21 J
PCB-1248 (AROCLOR 1248)	ND	ND	ND
PCB-1254 (AROCLOR 1254)	0.11 J	0.25 J	0.059 J
PCB-1260 (AROCLOR 1260)	0.044 J	0.14 J	0.012 J
PCB-1262 (AROCLOR 1262)	ND	ND	ND
PCB-1268 (AROCLOR 1268)	0.028 J	0.097 J	0.0077 J

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

Table A-3b Analytical Results for TAL Metals in Test Pit Samples Collected from the Former Flintkote Plant Property

Sample ID: / Date: / Analyte	OU2-TP01-01 5/19/2015	OU2-TP01-02 5/19/2015	OU2-TP02-01 6/29/2015	OU2-TP03-01 6/29/2015	OU2-TP03-02 6/29/2015	OU2-TP05-01 6/29/2015	OU2-TP06-01 6/29/2015	OU2-TP07-Z1 7/14/2015	OU2-TP07-Z2 7/14/2015
Metals, mg/kg									
ALUMINUM	4500	5200	2700	2700	8700	2100	2300	12000	8100
ANTIMONY	0.40	0.095 J	7.4 J	18	2.6	180	3000	1.8	1.6
ARSENIC	7.3	2.0	53	41	9.8	79	150	8.4	7.7
BARIUM	32	50	110 J	110	220	300	820	160	190
BERYLLIUM	1.5	0.66	0.8	0.32	1.1	ND	ND	0.57	0.46
CADMIUM	1.9	0.13	2	12	0.87	53	59	4.3	3.0
CALCIUM	3900	1400	1800	19000	18000	17000	20000	7600	10000
CHROMIUM, TOTAL	9.4	9.6	38 J	100	74	160	60	120	120
COBALT	22	5.1	7.4	15	12	59	22	8.9	7.9
COPPER	46	3.6	4100	7200	430	170000	64000	490	440
IRON	17000	18000	30000	61000	38000	330000	280000	20000	17000
LEAD	10	1.0	340	740	290	10000	46000	600	580
MAGNESIUM	560	2200	380	2100	6200	1600 J	2500 J	5400	5100
MANGANESE	780	140	170	440	350	1300	1300	140	140
MERCURY	0.044 J	ND	1.4	3.2	0.75	10	23	1.8	2.6
NICKEL	42	16	32	58	35	3900	110	33	30
POTASSIUM	360	1600	900	670	1900	ND	ND	1400	1000
SELENIUM	0.44 J	ND	1.7	0.72	0.32 J	ND	ND	1.4	1.0
SILVER	0.046 J	0.02 J	1.2	1.9	0.64	36	210	2.4	2.2
SODIUM	260	39 J	190	140	150	ND	ND	170	140
THALLIUM	0.17	0.073 J	0.83	0.12	0.11	ND	0.22 J	0.51	0.42
VANADIUM	14	11	26	21	25	24	18	26	26
ZINC	98	20	1100	6900	510	60000	41000	1200	1100

Table A-3b Analytical Results for TAL Metals in Test Pit Samples Collected from the Former Flintkote Plant Property

Sample ID: / Date: / Analyte	OU2-TP08-Z1 7/14/2015	OU2-TP09-Z1 7/14/2015	OU2-TP09-Z2 7/14/2015
Metals, mg/kg			
ALUMINUM	9800	10000	5200
ANTIMONY	2.0	2.4	3.9
ARSENIC	8.7	9.6	9.9
BARIUM	280	250	89
BERYLLIUM	0.57	0.58	0.35
CADMIUM	2.6	4.3	1.1
CALCIUM	11000	11000	20000
CHROMIUM, TOTAL	86	140	34
COBALT	8.6	9.8	5.4
COPPER	360	530	210
IRON	20000	21000	15000
LEAD	520	760	650
MAGNESIUM	6300	7100	6000
MANGANESE	160	160	160
MERCURY	2.7	3.7	4.5
NICKEL	32	37	28
POTASSIUM	1200	1300	690
SELENIUM	1.4	1.9	0.97
SILVER	2.9	3.2	1.2
SODIUM	150	170	110
THALLIUM	0.40	0.55	0.24
VANADIUM	25	29	15
ZINC	1100	1600	730

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

Table A-3c Analytical Results for Volatiles in Test Pit Samples Collected from the Former Flintkote Plant Property

Sample ID: / Date: / Analyte	OU2-TP01-01 5/19/2015	OU2-TP01-02 5/19/2015	OU2-TP02-01 6/29/2015	OU2-TP03-01 6/29/2015	OU2-TP03-02 6/29/2015	OU2-TP05-01 6/29/2015	OU2-TP06-01 6/29/2015	OU2-TP07-Z1 7/14/2015
Volatile Organic Compounds, mg/kg								
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DIBROMO-3-CHLOROPROPANE	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DIOXANE (P-DIOXANE)	R	R	R	R	R	R	R	ND
2-HEXANONE	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	ND	ND	R	R	R	R	0.046 J	ND
BENZENE	ND	ND	ND	ND	ND	ND	ND	ND
BROMOCHLOROMETHANE	ND	ND	ND	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	ND	ND	ND	ND	0.00092 J	0.00077 J	0.012	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND	0.00052 J	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHYLENE	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,3-DICHLOROPROPENE	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	ND	ND	ND	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE (CUMENE)	ND	ND	ND	ND	ND	ND	ND	ND
M,P-XYLENE	ND	ND	ND	ND	ND	ND	ND	ND
METHYL ACETATE	ND	ND	ND	ND	ND	ND	ND	ND
METHYL ETHYL KETONE (2-BUTANONE)	ND	ND	ND	ND	ND	ND	ND	ND
METHYL ISOBUTYL KETONE	ND	ND	ND	ND	ND	ND	ND	ND

Table A-3c Analytical Results for Volatiles in Test Pit Samples Collected from the Former Flintkote Plant Property

Sample ID: / Date: / Analyte	OU2-TP07-Z2 7/14/2015	OU2-TP08-Z1 7/14/2015	OU2-TP09-Z1 7/14/2015	OU2-TP09-Z2 7/14/2015
Volatile Organic Compounds, mg/kg				
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	ND	ND	ND	ND
1,2-DIBROMO-3-CHLOROPROPANE	ND	ND	ND	ND
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND
1,4-DIOXANE (P-DIOXANE)	ND	ND	ND	ND
2-HEXANONE	ND	ND	ND	ND
ACETONE	ND	0.024 J	0.027 J	ND
BENZENE	ND	ND	ND	ND
BROMOCHLOROMETHANE	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND
CARBON DISULFIDE	0.0028 J	ND	ND	0.0020 J
CARBON TETRACHLORIDE	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND
CIS-1,2-DICHLOROETHYLENE	ND	ND	ND	ND
CIS-1,3-DICHLOROPROPENE	ND	ND	ND	ND
CYCLOHEXANE	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND
ISOPROPYLBENZENE (CUMENE)	ND	ND	ND	ND
M,P-XYLENE	ND	ND	ND	ND
METHYL ACETATE	ND	ND	ND	ND
METHYL ETHYL KETONE (2-BUTANONE)	ND	ND	ND	ND
METHYL ISOBUTYL KETONE	ND	ND	ND	ND

Table A-3c Analytical Results for Volatiles in Test Pit Samples Collected from the Former Flintkote Plant Property

Analyte / Sample ID: / Date:	OU2-TP01-01 5/19/2015	OU2-TP01-02 5/19/2015	OU2-TP02-01 6/29/2015	OU2-TP03-01 6/29/2015	OU2-TP03-02 6/29/2015	OU2-TP05-01 6/29/2015	OU2-TP06-01 6/29/2015	OU2-TP07-Z1 7/14/2015
METHYLCYCLOHEXANE	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	0.0011 J	ND	ND	ND	ND	ND	ND
O-XYLENE (1,2-DIMETHYLBENZENE)	ND	ND	ND	ND	ND	ND	ND	ND
STYRENE	ND	ND	ND	ND	ND	ND	ND	ND
TERT-BUTYL METHYL ETHER	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHYLENE(PCE)	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,3-DICHLOROPROPENE	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHYLENE (TCE)	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND	ND	ND	ND

Table A-3c Analytical Results for Volatiles in Test Pit Samples Collected from the Former Flintkote Plant Property

Analyte / Sample ID: / Date:	OU2-TP07-Z2 7/14/2015	OU2-TP08-Z1 7/14/2015	OU2-TP09-Z1 7/14/2015	OU2-TP09-Z2 7/14/2015
METHYLCYCLOHEXANE	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND
O-XYLENE (1,2-DIMETHYLBENZENE)	ND	ND	ND	ND
STYRENE	ND	ND	ND	ND
TERT-BUTYL METHYL ETHER	ND	ND	ND	ND
TETRACHLOROETHYLENE(PCE)	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	ND	ND	ND	ND
TRANS-1,3-DICHLOROPROPENE	ND	ND	ND	ND
TRICHLOROETHYLENE (TCE)	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND

Key:

Qualifiers

J = Estimated value

R= Rejected result

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

Table A-3d Analytical Results for Semi-volatiles in Test Pit Samples Collected from the Former Flintkote Plant Property

Sample ID: / Date: / Analyte	OU2-TP01-01 5/19/2015	OU2-TP01-02 5/19/2015	OU2-TP02-01 6/29/2015	OU2-TP03-01 6/29/2015	OU2-TP03-02 6/29/2015	OU2-TP05-01 6/29/2015	OU2-TP06-01 6/29/2015	OU2-TP07-Z1 7/14/2015	OU2-TP07-Z2 7/14/2015	OU2-TP08-Z1 7/14/2015
Semi-volatile Compounds, mg/kg										
1,2,4,5-TETRACHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,3,4,6-TETRACHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-TRICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-TRICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DIMETHYLPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DINITROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DINITROTOLUENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,6-DINITROTOLUENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-CHLORONAPHTHALENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-CHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-METHYLNAPHTHALENE	3.6	ND	3.4	0.029 J	0.028	0.13 J	0.060	0.12	0.14 J	0.13 J
2-METHYLPHENOL (O-CRESOL)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-NITROANILINE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-NITROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3- AND 4- METHYLPHENOL (TOTAL)	ND	ND	ND	0.044 J	ND	ND	ND	0.090 J	0.11 J	0.096 J
3,3'-DICHLOROBENZIDINE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3-NITROANILINE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,6-DINITRO-2-METHYLPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-BROMOPHENYL PHENYL ETHER	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-CHLORO-3-METHYLPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-CHLOROANILINE	ND	ND	ND	ND	0.014 J	ND	ND	ND	ND	ND
4-CHLOROPHENYL PHENYL ETHER	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-NITROANILINE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-NITROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACENAPHTHENE	0.071	ND	0.033	ND	0.037	0.10 J	ND	0.19	0.36	0.23
ACENAPHTHYLENE	ND	ND	0.29	0.16	0.012 J	0.11 J	0.052	0.44 J	0.7	0.41
ACETOPHENONE	0.31	ND	0.39	ND	ND	ND	ND	ND	ND	ND
ANTHRACENE	0.13	ND	0.24	ND	0.076	0.43 J	0.09	0.53 J	0.83	0.43
ATRAZINE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZALDEHYDE	ND	ND	ND	ND	ND	0.11 J	0.071 J	0.16 J	ND	ND
BENZO(A)ANTHRACENE	0.28	ND	1.5	1.7	0.61	1.5 J	0.21	1.6 J	2.1	1.4
BENZO(A)PYRENE	0.19	ND	1.3	1.6 J	0.29	1.6 J	0.26	1.5 J	1.9	1.2
BENZO(B)FLUORANTHENE	0.19	ND	1.5	0.96 J	0.23	1.2 J	0.21	2	2.7	1.2
BENZO(G,H,I)PERYLENE	0.11	ND	0.86	0.82 J	0.14	1.4 J	1.2	0.94 J	1	0.74
BENZO(K)FLUORANTHENE	0.087	ND	0.61	1.1 J	0.12	0.53 J	0.082	0.75 J	0.84	0.87
BENZYL BUTYL PHTHALATE	ND	0.010 J	ND	ND	ND	ND	ND	ND	ND	ND
BIPHENYL (DIPHENYL)	0.22	ND	0.26	ND	ND	ND	0.027 J	ND	ND	ND
BIS(2-CHLOROETHOXY) METHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table A-3d Analytical Results for Semi-volatiles in Test Pit Samples Collected from the Former Flintkote Plant Property

Analyte	Sample ID: OU2-TP09-Z1 Date: 7/14/2015	OU2-TP09-Z2 7/14/2015
Semi-volatile Compunds, mg/kg		
1,2,4,5-TETRACHLOROBENZENE	ND	ND
2,3,4,6-TETRACHLOROPHENOL	ND	ND
2,4,5-TRICHLOROPHENOL	ND	ND
2,4,6-TRICHLOROPHENOL	ND	ND
2,4-DICHLOROPHENOL	ND	ND
2,4-DIMETHYLPHENOL	ND	ND
2,4-DINITROPHENOL	ND	ND
2,4-DINITROTOLUENE	ND	ND
2,6-DINITROTOLUENE	ND	ND
2-CHLORONAPHTHALENE	ND	ND
2-CHLOROPHENOL	ND	ND
2-METHYLNAPHTHALENE	0.20 J	2.6
2-METHYLPHENOL (O-CRESOL)	ND	0.052 J
2-NITROANILINE	ND	ND
2-NITROPHENOL	ND	ND
3- AND 4- METHYLPHENOL (TOTAL)	0.13 J	0.43 J
3,3'-DICHLOROBENZIDINE	ND	ND
3-NITROANILINE	ND	ND
4,6-DINITRO-2-METHYLPHENOL	ND	ND
4-BROMOPHENYL PHENYL ETHER	ND	ND
4-CHLORO-3-METHYLPHENOL	ND	ND
4-CHLOROANILINE	ND	ND
4-CHLOROPHENYL PHENYL ETHER	ND	ND
4-NITROANILINE	ND	ND
4-NITROPHENOL	ND	ND
ACENAPHTHENE	0.22	6.9
ACENAPHTHYLENE	0.72	1.6
ACETOPHENONE	ND	ND
ANTHRACENE	0.85	15
ATRAZINE	ND	ND
BENZALDEHYDE	ND	ND
BENZO(A)ANTHRACENE	2.1 J	28
BENZO(A)PYRENE	1.9 J	24
BENZO(B)FLUORANTHENE	2.4 J	20
BENZO(G,H,I)PERYLENE	1.3	14
BENZO(K)FLUORANTHENE	0.75 J	11
BENZYL BUTYL PHTHALATE	ND	ND
BIPHENYL (DIPHENYL)	ND	0.49 J
BIS(2-CHLOROETHOXY) METHANE	ND	ND

Table A-3d Analytical Results for Semi-volatiles in Test Pit Samples Collected from the Former Flintkote Plant Property

Analyte / Sample ID: / Date:	OU2-TP01-01 5/19/2015	OU2-TP01-02 5/19/2015	OU2-TP02-01 6/29/2015	OU2-TP03-01 6/29/2015	OU2-TP03-02 6/29/2015	OU2-TP05-01 6/29/2015	OU2-TP06-01 6/29/2015	OU2-TP07-Z1 7/14/2015	OU2-TP07-Z2 7/14/2015	OU2-TP08-Z1 7/14/2015
Semi-volatile Compounds, mg/kg										
BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BIS(2-CHLOROISOPROPYL) ETHER	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BIS(2-ETHYLHEXYL) PHTHALATE	ND	ND	ND	ND	ND	1.3 J	ND	0.88 J	3.3	ND
CAPROLACTAM	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CARBAZOLE	ND	ND	0.084	ND	ND	ND	ND	ND	ND	ND
CHRYSENE	0.31	ND	1.3	1.6	0.32	2	0.27	2.1 J	2.4	1.8
DIBENZ(A,H)ANTHRACENE	0.04	ND	0.27	0.29 J	0.12	0.3 J	0.11	0.33	0.35	0.23
DIBENZOFURAN	0.94	ND	0.89	ND	0.027 J	ND	ND	0.091 J	ND	0.11 J
DIETHYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DIMETHYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DI-N-BUTYL PHTHALATE	ND	ND	ND	ND	ND	0.43 J	ND	ND	ND	ND
DI-N-OCTYLPHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FLUORANTHENE	0.39	ND	1.7	1.1	0.35	2.9	0.43	4.1 J	6.1	3.2
FLUORENE	ND	ND	ND	ND	0.03	0.13 J	ND	0.39 J	0.65	0.31
HEXACHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROBUTADIENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROCYCLOPENTADIENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
INDENO(1,2,3-C,D)PYRENE	0.091	ND	0.84	0.74 J	0.16	1.1 J	0.34	0.9 J	1	0.7
ISOPHORONE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	2.3	ND	2.6	0.069	0.038	0.21 J	0.062	0.11	0.15 J	0.12 J
NITROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-NITROSODI-N-PROPYLAMINE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-NITROSODIPHENYLAMINE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PENTACHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PHENANTHRENE	1.3	ND	1.4	ND	0.2	1.5 J	0.28	2.1 J	3.5	2.2
PHENOL	ND	ND	ND	ND	ND	ND	ND	0.039 J	0.033 J	0.036 J
PYRENE	0.31	ND	1.6	1.2	0.29	1.9	0.37	2.4 J	3	2.2

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

Table A-3d Analytical Results for Semi-volatiles in Test Pit Samples Collected from the Former Flintkote Plant Property

Analyte / Sample ID: / Date:	OU2-TP09-Z1 7/14/2015	OU2-TP09-Z2 7/14/2015
Semi-volatile Compunds, mg/kg		
BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	ND	ND
BIS(2-CHLOROISOPROPYL) ETHER	ND	ND
BIS(2-ETHYLHEXYL) PHTHALATE	ND	ND
CAPROLACTAM	ND	ND
CARBAZOLE	ND	3
CHRYSENE	2.8 J	29
DIBENZ(A,H)ANTHRACENE	0.4	4.3
DIBENZOFURAN	ND	2.5
DIETHYL PHTHALATE	ND	ND
DIMETHYL PHTHALATE	ND	ND
DI-N-BUTYL PHTHALATE	ND	ND
DI-N-OCTYLPHTHALATE	ND	ND
FLUORANTHENE	6.2 J	65
FLUORENE	0.53	7.3
HEXACHLOROBENZENE	ND	ND
HEXACHLOROBUTADIENE	ND	ND
HEXACHLOROCYCLOPENTADIENE	ND	ND
HEXACHLOROETHANE	ND	ND
INDENO(1,2,3-C,D)PYRENE	1.2 J	12
ISOPHORONE	ND	ND
NAPHTHALENE	0.21	6.7
NITROBENZENE	ND	ND
N-NITROSODI-N-PROPYLAMINE	ND	ND
N-NITROSODIPHENYLAMINE	ND	ND
PENTACHLOROPHENOL	ND	ND
PHENANTHRENE	3.6	80
PHENOL	ND	0.086 J
PYRENE	3.6 J	53

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

Table A-3e Analytical Results for Pesticides in Test Pit Samples Collected from the Former Flintkote Plant Property

Sample ID: / Date: / Analyte	OU2-TP01-01 5/19/2015	OU2-TP01-02 5/19/2015	OU2-TP02-01 6/29/2015	OU2-TP03-01 6/29/2015	OU2-TP03-02 6/29/2015	OU2-TP05-01 6/29/2015	OU2-TP06-01 6/29/2015	OU2-TP07-Z1 7/14/2015	OU2-TP07-Z2 7/14/2015
Pesticides, mg/kg									
ALDRIN	0.00017 J	ND	0.00039 J	ND	ND	ND	ND	0.0011 J	0.0021 J
ALPHA BHC (ALPHA	0.0002 J	ND	ND	ND	ND	ND	ND	ND	ND
ALPHA ENDOSULFAN	0.000053 J	ND	ND	ND	ND	ND	ND	0.0065	0.0028
BETA BHC (BETA	0.00083 J	ND	ND	ND	ND	0.0075 J	ND	0.13	0.035
BETA ENDOSULFAN	0.00023 J	ND	ND	ND	ND	0.0051 J	ND	0.0048 J	0.0034 J
CIS-CHLORDANE	0.00011 J	ND	0.00092 J	ND	ND	0.0012 J	ND	0.0068 J	0.0029 J
DELTA BHC (DELTA	0.00021	0.000038 J	ND	0.0003 J	ND	0.019	ND	0.067 J	0.019 J
DIELDRIN	0.00074 J	ND	0.025	ND	0.0012	0.02	0.0046	0.0055 J	0.0022 J
ENDOSULFAN SULFATE	0.0001 J	ND	ND	ND	ND	0.0089 J	ND	0.013	0.011
ENDRIN	0.00066 J	0.00014	ND	ND	ND	0.0032 J	ND	0.009 J	0.0045 J
ENDRIN ALDEHYDE	0.0003 J	ND	ND	ND	ND	0.0021 J	0.0036	ND	ND
ENDRIN KETONE	0.000073 J	0.000015 J	ND	0.00076 J	ND	0.013 J	ND	0.013 J	0.016
GAMMA BHC (LINDANE)	0.0019 J	ND	ND	ND	ND	ND	ND	0.0016 J	ND
HEPTACHLOR	0.00028 J	ND	ND	ND	ND	0.0087 J	ND	0.035 J	0.0095 J
HEPTACHLOR EPOXIDE	ND	ND	ND	ND	ND	0.013 J	ND	0.086	0.026
METHOXYCHLOR	0.0004 J	0.000021 J	0.0017 J	0.0028 J	ND	0.0038 J	ND	0.0079 J	0.012 J
P,P'-DDD	0.003	ND	0.0026	ND	ND	0.005 J	ND	0.0035 J	0.0017 J
P,P'-DDE	0.000053 J	ND	ND	ND	0.00025 J	0.0025 J	ND	0.016 J	0.0095
P,P'-DDT	0.00097 J	ND	0.0077	0.001 J	ND	0.031 J	ND	0.039	0.017
TOXAPHENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-CHLORDANE	0.00029 J	ND	ND	ND	ND	0.013	0.00069 J	0.05 J	0.017 J

Table A-3e Analytical Results for Pesticides in Test Pit Samples Collected from the Former Flintkote Plant Property

Sample ID: / Date: / Analyte	OU2-TP08-Z1 7/14/2015	OU2-TP09-Z1 7/14/2015	OU2-TP09-Z2 7/14/2015
Pesticides, mg/kg			
ALDRIN	ND	0.0025 J	ND
ALPHA BHC (ALPHA	ND	ND	ND
ALPHA ENDOSULFAN	ND	ND	ND
BETA BHC (BETA	0.0048	0.0057	0.0017 J
BETA ENDOSULFAN	ND	ND	ND
CIS-CHLORDANE	ND	ND	0.00076 J
DELTA BHC (DELTA	0.0043	0.0051 J	0.0011 J
DIELDRIN	ND	0.0016 J	ND
ENDOSULFAN SULFATE	ND	0.0059 J	ND
ENDRIN	ND	ND	0.0023 J
ENDRIN ALDEHYDE	ND	ND	ND
ENDRIN KETONE	0.002	0.0071	ND
GAMMA BHC (LINDANE)	0.00049 J	0.0015	ND
HEPTACHLOR	ND	0.0019 J	ND
HEPTACHLOR EPOXIDE	0.0037	0.0033 J	0.0011 J
METHOXYCHLOR	ND	0.018	ND
P,P'-DDD	ND	ND	0.013
P,P'-DDE	ND	0.0021	ND
P,P'-DDT	0.0024	0.0034 J	ND
TOXAPHENE	ND	ND	ND
TRANS-CHLORDANE	ND	0.0027 J	ND

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

Table A-4a Analytical Results for PCB Aroclors and TOC in Soil Samples Collected from the Former United Paperboard Company Property

Analyte	Sample ID: OU2-SS18-Z1 Date: 1/25/2016	OU2-SS19-Z1 1/25/2016	OU2-SS19-Z1-FD 1/25/2016	OU2-SS20-Z1 1/25/2016	OU2-SS21-Z1 1/25/2016
PCB Aroclors, mg/kg					
PCB-1016 (AROCLOR 1016)	ND	ND	ND	ND	ND
PCB-1221 (AROCLOR 1221)	ND	ND	ND	ND	ND
PCB-1232 (AROCLOR 1232)	ND	ND	ND	ND	ND
PCB-1242 (AROCLOR 1242)	ND	ND	ND	ND	ND
PCB-1248 (AROCLOR 1248)	ND	ND	ND	22	ND
PCB-1254 (AROCLOR 1254)	ND	ND	ND	16	ND
PCB-1262 (AROCLOR 1262)	ND	ND	ND	ND	ND
PCB-1268 (AROCLOR 1268)	ND	ND	ND	ND	ND
Total Organic Carbon, mg/kg					
TOTAL ORGANIC CARBON	290000	40000	60000	360000	83000

Key:

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

"-FD" denotes field duplicate sample

Table A-4b Analytical Results for TAL Metals in Soil Samples Collected from the Former United Paperboard Company Property

Analyte	Sample ID: OU2-SS18-Z1 Date: 1/25/2016	OU2-SS19-Z1 1/25/2016	OU2-SS19-Z1-FD 1/25/2016	OU2-SS20-Z1 1/25/2016	OU2-SS21-Z1 1/25/2016
Metals, mg/kg					
ALUMINUM	1140	9820	7750	3700	6320
ANTIMONY	ND	ND	ND	9.6	1.5
ARSENIC	15.7	4.6	4.5	23.4	13
BARIUM	44.5	88.2	85	118	124
BERYLLIUM	0.35 J	0.42 J	0.39 J	0.72	0.67
CADMIUM	0.48 J	0.48	0.49	1.7	0.96
CALCIUM	4770	53300	65700	4000	38500
CHROMIUM, TOTAL	4.2	25.9 J	40.4 J	29.9	14.3
COBALT	2.3	24	22.6	6.9	11.1
COPPER	34.4	67	60.5	197	120
IRON	14800	18900	18600	17300	19600
LEAD	30.5	152 J	217 J	386	335
MAGNESIUM	483 J	25400	30800	813	10100
MANGANESE	57.5	763	855	180	1610
MERCURY	0.041 J	0.16	0.15	1.1	0.2
NICKEL	9.8	116	161	30.2	26.8
POTASSIUM	326 J	1030	1040	342 J	1510
SELENIUM	ND	ND	ND	ND	ND
SILVER	ND	ND	ND	2	ND
SODIUM	66.9 J	127 J	135 J	93.3 J	90.9 J
THALLIUM	ND	ND	ND	ND	ND
VANADIUM	7.6	17.3	15.3	15.2	14.9
ZINC	89.2	174	174	320	237

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

"-FD" denotes field duplicate sample

Table A-4c Analytical Results for Semi-volatiles in Soil Samples Collected from the Former United Paperboard Company Property

Analyte / Sample ID: / Date:	OU2-SS18-Z1 1/25/2016	OU2-SS19-Z1 1/25/2016	OU2-SS19-Z1-FD 1/25/2016	OU2-SS20-Z1 1/25/2016	OU2-SS21-Z1 1/25/2016
Semi-volatile Compounds, mg/kg					
2-METHYLNAPHTHALENE	ND	ND	ND	0.37 J	ND
ACENAPHTHENE	ND	ND	ND	1.9	ND
ACENAPHTHYLENE	ND	ND	ND	ND	ND
ANTHRACENE	ND	ND	0.048 J	4.2	ND
BENZO(A)ANTHRACENE	ND	0.16 J	0.15 J	8.0	0.071 J
BENZO(A)PYRENE	ND	0.14 J	0.13 J	6.4	0.066 J
BENZO(B)FLUORANTHENE	ND	0.19 J	0.18 J	8.9	0.091 J
BENZO(G,H,I)PERYLENE	ND	0.089 J	0.083 J	3.7	ND
BENZO(K)FLUORANTHENE	ND	0.078 J	0.054 J	2.6	ND
CHRYSENE	ND	0.15 J	0.14 J	7.0	0.058 J
DIBENZ(A,H)ANTHRACENE	ND	ND	ND	1.1 J	ND
FLUORANTHENE	0.066 J	0.32	0.31	19	0.14 J
FLUORENE	ND	ND	ND	2.0	ND
INDENO(1,2,3-C,D)PYRENE	ND	0.083 J	0.072 J	3.5	ND
NAPHTHALENE	ND	ND	ND	0.85 J	ND
PENTACHLOROPHENOL	ND	ND	ND	ND	ND
PHENANTHRENE	0.056 J	0.17 J	0.21	17	0.063 J
PYRENE	0.056 J	0.26	0.24	14	0.11 J

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

"-FD" denotes field duplicate sample

Table A-4d Analytical Results for Pesticides in Soil Samples Collected from the Former United Paperboard Company Property

Analyte	Sample ID: OU2-SS18-Z1 Date: 1/25/2016	OU2-SS19-Z1 1/25/2016	OU2-SS19-Z1-FD 1/25/2016	OU2-SS20-Z1 1/25/2016	OU2-SS21-Z1 1/25/2016
Pesticides, mg/kg					
ALDRIN	ND	ND	ND	ND	ND
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	ND	ND	ND	ND	ND
ALPHA ENDOSULFAN	ND	ND	ND	ND	ND
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	ND	ND	ND	ND	ND
BETA ENDOSULFAN	ND	ND	ND	ND	ND
CIS-CHLORDANE	ND	ND	ND	ND	ND
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	ND	ND	ND	ND	ND
DIELDRIN	ND	ND	ND	ND	ND
ENDOSULFAN SULFATE	ND	ND	ND	ND	ND
ENDRIN	ND	ND	ND	ND	ND
ENDRIN ALDEHYDE	ND	ND	ND	ND	ND
ENDRIN KETONE	ND	ND	ND	ND	ND
GAMMA BHC (LINDANE)	ND	ND	ND	ND	ND
HEPTACHLOR	ND	ND	ND	ND	ND
HEPTACHLOR EPOXIDE	ND	ND	ND	ND	ND
METHOXYCHLOR	ND	ND	ND	ND	ND
P,P'-DDD	ND	ND	ND	ND	ND
P,P'-DDE	ND	ND	ND	ND	ND
P,P'-DDT	ND	0.0012 J	ND	ND	ND
TOXAPHENE	ND	ND	ND	ND	ND
TRANS-CHLORDANE	ND	ND	ND	ND	ND

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

"-FD" denotes field duplicate sample

Table A-5a Analytical Results for PCB Aroclors in Soil Samples Collected from the Background Location

Analyte	Sample ID: BG1-SS01-Z1 Depth: 0 - 0.5 ft Date: 11/25/2014	BG1-SS01-Z2 0.5 - 2.0 ft 11/25/2014	BG1-SS02-Z1 0 - 0.5 ft 11/25/2014	BG1-SS02-Z1-FD 0 - 0.5 ft 11/25/2014	BG1-SS02-Z2 0.5 - 2.0 ft 11/25/2014	BG1-SS03-Z1 0 - 0.5 ft 11/25/2014	BG1-SS03-Z2 0.5 - 2.0 ft 11/25/2014	BG1-SS04-Z1 0 - 0.5 ft 11/25/2014
PCB Aroclors, mg/kg								
PCB-1016 (AROCLOR 1016)	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1221 (AROCLOR 1221)	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1232 (AROCLOR 1232)	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1242 (AROCLOR 1242)	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1248 (AROCLOR 1248)	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1254 (AROCLOR 1254)	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1260 (AROCLOR 1260)	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1262 (AROCLOR 1262)	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1268 (AROCLOR 1268)	ND	ND	ND	ND	ND	ND	ND	ND

Table A-5a Analytical Results for PCB Aroclors in Soil Samples Collected from the Background Location

Sample ID:	BG1-SS04-Z2	BG1-SS05-Z1	BG1-SS05-Z2	BG1-SS06-Z1	BG1-SS06-Z2	BG1-SS07-Z1	BG1-SS07-Z2
Depth:	0.5 - 2.0 ft	0 - 0.5 ft	0.5 - 2.0 ft	0 - 0.5 ft	0.5 - 2.0 ft	0 - 0.5 ft	0.5 - 2.0 ft
Date:	11/25/2014	11/25/2014	11/25/2014	11/25/2014	11/25/2014	11/25/2014	11/25/2014
Analyte							
PCB Aroclors, mg/kg							
PCB-1016 (AROCLOR 1016)	ND	ND	ND	ND	ND	ND	ND
PCB-1221 (AROCLOR 1221)	ND	ND	ND	ND	ND	ND	ND
PCB-1232 (AROCLOR 1232)	ND	ND	ND	ND	ND	ND	ND
PCB-1242 (AROCLOR 1242)	ND	ND	ND	ND	ND	ND	ND
PCB-1248 (AROCLOR 1248)	ND	ND	ND	ND	ND	ND	ND
PCB-1254 (AROCLOR 1254)	ND	ND	ND	ND	ND	ND	ND
PCB-1260 (AROCLOR 1260)	ND	ND	ND	ND	ND	ND	ND
PCB-1262 (AROCLOR 1262)	ND	ND	ND	ND	ND	ND	ND
PCB-1268 (AROCLOR 1268)	ND	ND	ND	ND	ND	ND	ND

Key:

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

"-FD" denotes field duplicate sample

Table A-5b Analytical Results for TAL Metals in Soil Samples Collected from the Background Location

Sample ID:	BG1-SS01-Z1	BG1-SS01-Z2	BG1-SS02-Z1	BG1-SS02-Z1-FD	BG1-SS02-Z2	BG1-SS03-Z1	BG1-SS03-Z2	BG1-SS04-Z1	BG1-SS04-Z2
Depth:	0 - 0.5 ft	0.5 - 2.0 ft	0 - 0.5 ft	0 - 0.5 ft	0.5 - 2.0 ft	0 - 0.5 ft	0.5 - 2.0 ft	0 - 0.5 ft	0.5 - 2.0 ft
Date:	11/25/2014	11/25/2014	11/25/2014	11/25/2014	11/25/2014	11/25/2014	11/25/2014	11/25/2014	11/25/2014
Analyte									
Metals, mg/kg									
ALUMINUM	6580	7620	7320	5890	6830	11200	13000	16900	21900
ANTIMONY	ND	ND	ND	ND	ND	ND	ND	ND	ND
ARSENIC	10.7	11.9	9.5	10.1	8.8	13.4	9.1	5.4	6.6
BARIUM	41.7	51.1	43.7	33.7	33.7	91.7	87.4	97.9	178
BERYLLIUM	ND	0.48	ND	ND	0.49	ND	0.53	0.80	1.0
CADMIUM	0.35 J	0.30 J	0.41 J	0.38 J	0.22 J	0.49 J	0.34 J	0.44 J	0.37 J
CALCIUM	116000	115000	118000	131000	156000	4030	2660	2220	3520
CHROMIUM, HEXAVALENT	0.26 J	--	--	--	--	--	--	--	--
CHROMIUM, TOTAL	27.4 J	20.3	13.3	12.3 J	10.0	14.2	15.1	22.1	28.5
COBALT	7.4	8.4	6.6	6.9	6.4	7.5	9.7	13.9	16.1
COPPER	21.8	24.5	20.6	19.5	15.1	14.5	11.5	15.0	25.5
IRON	13900	16100	15000	14500	13400	16800	20500	26300	34300
LEAD	102	109	82.0	83.0	61.1	53.9	32.5	23.8	14.1
MAGNESIUM	26300	25700	26300	24400	22900	2910	3300	4640	6290
MANGANESE	665	708	453	491	468	724	820	974	992
MERCURY	0.25	0.39	0.25	0.28	0.16	0.057 J	0.038 J	0.041 J	0.028 J
NICKEL	25.5	22.4	25.2	24.9	17.8	17.4	16.3	23.5	31.9
POTASSIUM	2180	2150	2190	2070	2140	999	790	1520	1700
SELENIUM	1.2 J	0.96 J	ND	0.92 J	ND	ND	0.98 J	1.2 J	ND
SILVER	ND	ND	ND	ND	ND	ND	ND	ND	ND
SODIUM	ND	ND	ND	ND	ND	ND	ND	ND	ND
THALLIUM	ND	ND	ND	ND	ND	ND	ND	ND	ND
VANADIUM	12.2	13.4	12.0	11.0	10.1	20.7	24.9	31.8	37.2
ZINC	65.2	59.6	67.6	65.6	42.1	62.2	53.4	68.9	65.1

Table A-5b Analytical Results for TAL Metals in Soil Samples Collected from the Background Location

Sample ID: / Depth: / Date: / Analyte	BG1-SS05-Z1 0 - 0.5 ft 11/25/2014	BG1-SS05-Z2 0.5 - 2.0 ft 11/25/2014	BG1-SS06-Z1 0 - 0.5 ft 11/25/2014	BG1-SS06-Z2 0.5 - 2.0 ft 11/25/2014	BG1-SS07-Z1 0 - 0.5 ft 11/25/2014	BG1-SS07-Z2 0.5 - 2.0 ft 11/25/2014
Metals, mg/kg						
ALUMINUM	13600	15400	12000	13600	8030	7250
ANTIMONY	ND	ND	ND	ND	ND	ND
ARSENIC	6.4	5.9	10.5	7.3	3.2	3.9
BARIUM	108	118	189	130	36.1	34.6
BERYLLIUM	0.65	0.72	0.52	ND	ND	ND
CADMIUM	0.42	0.26 J	0.50 J	0.34 J	0.30 J	0.20 J
CALCIUM	6250 J	49900	4430	3490	5090	4640
CHROMIUM, HEXAVALENT	--	--	ND	--	--	--
CHROMIUM, TOTAL	19.2	22.3	15.1	17.2	11.4	9.7
COBALT	8.9	12.2	7.5	6.3	5.4	5.2 J
COPPER	28.2	25.4	19.7	25.6	17.8	14.3
IRON	21900	26400	19200	22500	13400	13900
LEAD	23.3	11.9	30.6	19.4	40.0	21.8
MAGNESIUM	4760	9150	2900	3190	2680	2890
MANGANESE	717	936	1130	446	191	306 J
MERCURY	0.062 J	0.029 J	0.062 J	0.050 J	0.090 J	0.038 J
NICKEL	23.7	26.4	15.2	14.8	15.0	11.8
POTASSIUM	1630	1950	1010	1070	1060	869
SELENIUM	1.6 J	0.67 J	ND	0.96 J	1.7 J	ND
SILVER	ND	ND	ND	ND	ND	ND
SODIUM	ND	ND	ND	ND	ND	ND
THALLIUM	ND	ND	ND	ND	ND	ND
VANADIUM	26.7	30.2	24.0	27.5	16.2	15.6
ZINC	70.8	53.5	58.3	52.6	64.3	40.0

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

-- = Analyte not analyzed for

"-FD" denotes field duplicate sample

Table A-5c Analytical Results for Semi-volatiles in Soil Samples Collected from the Background Location

Analyte	Sample ID: BG1-SS01-Z1 Depth: 0 - 0.5 ft Date: 11/25/2014	BG1-SS01-Z2 0.5 - 2.0 ft 11/25/2014	BG1-SS02-Z1 0 - 0.5 ft 11/25/2014	BG1-SS02-Z1-FD 0 - 0.5 ft 11/25/2014	BG1-SS02-Z2 0.5 - 2.0 ft 11/25/2014	BG1-SS03-Z1 0 - 0.5 ft 11/25/2014	BG1-SS03-Z2 0.5 - 2.0 ft 11/25/2014	BG1-SS04-Z1 0 - 0.5 ft 11/25/2014
Semi-volatile Compounds, mg/kg								
1,2,4,5-TETRACHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
2,3,4,6-TETRACHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-TRICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-TRICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DIMETHYLPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DINITROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DINITROTOLUENE	ND	ND	ND	ND	ND	ND	ND	ND
2,6-DINITROTOLUENE	ND	ND	ND	ND	ND	ND	ND	ND
2-CHLORONAPHTHALENE	ND	ND	ND	ND	ND	ND	ND	ND
2-CHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
2-METHYLNAPHTHALENE	ND	ND	ND	ND	ND	ND	ND	ND
2-METHYLPHENOL (O-CRESOL)	ND	ND	ND	ND	ND	ND	ND	ND
2-NITROANILINE	ND	ND	ND	ND	ND	ND	ND	ND
2-NITROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
3,3'-DICHLOROBENZIDINE	ND	ND	ND	ND	ND	ND	ND	ND
3-NITROANILINE	ND	ND	ND	ND	ND	ND	ND	ND
4,6-DINITRO-2-METHYLPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
4-BROMOPHENYL PHENYL ETHER	ND	ND	ND	ND	ND	ND	ND	ND
4-CHLORO-3-METHYLPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
4-CHLOROANILINE	ND	ND	ND	ND	ND	ND	ND	ND
4-CHLOROPHENYL PHENYL ETHER	ND	ND	ND	ND	ND	ND	ND	ND
4-METHYLPHENOL (P-CRESOL)	ND	ND	ND	ND	ND	ND	ND	ND
4-NITROANILINE	ND	ND	ND	ND	ND	ND	ND	ND
4-NITROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
ACENAPHTHENE	ND	ND	ND	ND	ND	ND	ND	ND
ACENAPHTHYLENE	ND	ND	ND	0.038 J	ND	ND	ND	ND
ACETOPHENONE	ND	ND	ND	ND	ND	ND	ND	ND
ANTHRACENE	0.031 J	0.042 J	0.044 J	0.12 J	0.036 J	ND	ND	ND
ATRAZINE	ND	ND	ND	ND	ND	ND	ND	ND
BENZALDEHYDE	ND	0.025 J	ND	ND	ND	ND	ND	ND
BENZO(A)ANTHRACENE	0.16 J	0.19 J	0.22 J-	0.54	0.17 J	0.02 J	ND	ND
BENZO(A)PYRENE	0.15 J	0.19 J	0.19 J	0.49	0.17 J	0.024 J	ND	ND
BENZO(B)FLUORANTHENE	0.23 J	0.25	0.26	0.65	0.23	0.04 J	ND	ND
BENZO(G,H,I)PERYLENE	0.052 J	0.063 J	0.044 J	0.17 J	0.051 J	ND	ND	ND
BENZO(K)FLUORANTHENE	0.07 J	0.099 J	0.093 J	0.24	0.076 J	ND	ND	ND
BENZYL BUTYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND
BIPHENYL (DIPHENYL)	ND	ND	ND	ND	ND	ND	ND	ND
BIS(2-CHLOROETHOXY) METHANE	ND	ND	ND	ND	ND	ND	ND	ND
BIS(2-CHLOROETHYL) ETHER	ND	ND	ND	ND	ND	ND	ND	ND

Table A-5c Analytical Results for Semi-volatiles in Soil Samples Collected from the Background Location

Analyte	Sample ID: BG1-SS04-Z2 Depth: 0.5 - 2.0 ft Date: 11/25/2014	BG1-SS05-Z1 0 - 0.5 ft 11/25/2014	BG1-SS05-Z2 0.5 - 2.0 ft 11/25/2014	BG1-SS06-Z1 0 - 0.5 ft 11/25/2014	BG1-SS06-Z2 0.5 - 2.0 ft 11/25/2014	BG1-SS07-Z1 0 - 0.5 ft 11/25/2014	BG1-SS07-Z2 0.5 - 2.0 ft 11/25/2014
Semi-volatile Compounds, mg/kg							
1,2,4,5-TETRACHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND
2,3,4,6-TETRACHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND
2,4,5-TRICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND
2,4,6-TRICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND
2,4-DICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND
2,4-DIMETHYLPHENOL	ND	ND	ND	ND	ND	ND	ND
2,4-DINITROPHENOL	ND	ND	ND	ND	ND	ND	ND
2,4-DINITROTOLUENE	ND	ND	ND	ND	ND	ND	ND
2,6-DINITROTOLUENE	ND	ND	ND	ND	ND	ND	ND
2-CHLORONAPHTHALENE	ND	ND	ND	ND	ND	ND	ND
2-CHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND
2-METHYLNAPHTHALENE	ND	ND	ND	ND	ND	ND	ND
2-METHYLPHENOL (O-CRESOL)	ND	ND	ND	ND	ND	ND	ND
2-NITROANILINE	ND	ND	ND	ND	ND	ND	ND
2-NITROPHENOL	ND	ND	ND	ND	ND	ND	ND
3,3'-DICHLOROBENZIDINE	ND	ND	ND	ND	ND	ND	ND
3-NITROANILINE	ND	ND	ND	ND	ND	ND	ND
4,6-DINITRO-2-METHYLPHENOL	ND	ND	ND	ND	ND	ND	ND
4-BROMOPHENYL PHENYL ETHER	ND	ND	ND	ND	ND	ND	ND
4-CHLORO-3-METHYLPHENOL	ND	ND	ND	ND	ND	ND	ND
4-CHLOROANILINE	ND	ND	ND	ND	ND	ND	ND
4-CHLOROPHENYL PHENYL ETHER	ND	ND	ND	ND	ND	ND	ND
4-METHYLPHENOL (P-CRESOL)	ND	ND	ND	ND	ND	ND	ND
4-NITROANILINE	ND	ND	ND	ND	ND	ND	ND
4-NITROPHENOL	ND	ND	ND	ND	ND	ND	ND
ACENAPHTHENE	ND	ND	ND	ND	ND	ND	ND
ACENAPHTHYLENE	ND	ND	ND	ND	ND	ND	ND
ACETOPHENONE	ND	ND	ND	ND	ND	ND	ND
ANTHRACENE	ND	ND	ND	ND	ND	ND	ND
ATRAZINE	ND	ND	ND	ND	ND	ND	ND
BENZALDEHYDE	ND	ND	ND	ND	ND	ND	ND
BENZO(A)ANTHRACENE	ND	ND	ND	ND	ND	0.07 J	0.019 J
BENZO(A)PYRENE	ND	ND	ND	ND	ND	0.065 J	0.017 J
BENZO(B)FLUORANTHENE	ND	0.028 J	ND	ND	ND	0.096 J	0.023 J
BENZO(G,H,I)PERYLENE	ND	ND	ND	ND	ND	ND	ND
BENZO(K)FLUORANTHENE	ND	ND	ND	ND	ND	0.032 J	ND
BENZYL BUTYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND
BIPHENYL (DIPHENYL)	ND	ND	ND	ND	ND	ND	ND
BIS(2-CHLOROETHOXY) METHANE	ND	ND	ND	ND	ND	ND	ND
BIS(2-CHLOROETHYL) ETHER	ND	ND	ND	ND	ND	ND	ND

Table A-5c Analytical Results for Semi-volatiles in Soil Samples Collected from the Background Location

Analyte	Sample ID: BG1-SS01-Z1 Depth: 0 - 0.5 ft Date: 11/25/2014	BG1-SS01-Z2 0.5 - 2.0 ft 11/25/2014	BG1-SS02-Z1 0 - 0.5 ft 11/25/2014	BG1-SS02-Z1-FD 0 - 0.5 ft 11/25/2014	BG1-SS02-Z2 0.5 - 2.0 ft 11/25/2014	BG1-SS03-Z1 0 - 0.5 ft 11/25/2014	BG1-SS03-Z2 0.5 - 2.0 ft 11/25/2014	BG1-SS04-Z1 0 - 0.5 ft 11/25/2014
BIS(2-CHLOROISOPROPYL) ETHER	ND	ND	ND	ND	ND	ND	ND	ND
BIS(2-ETHYLHEXYL) PHTHALATE	0.028 J	ND	0.029 J	0.027 J	0.19 J	ND	0.04 J	ND
CAPROLACTAM	ND	ND	ND	ND	ND	ND	ND	ND
CARBAZOLE	ND	0.016 J	ND	ND	ND	ND	ND	ND
CHRYSENE	0.17 J	0.2 J	0.23 J-	0.55	0.17 J	0.028 J	ND	ND
DIBENZ(A,H)ANTHRACENE	0.02 J	0.026 J	0.022 J	0.063 J	0.021 J	ND	ND	ND
DIBENZOFURAN	ND	ND	ND	ND	ND	ND	ND	ND
DIETHYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND
DIMETHYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND
DI-N-BUTYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND
DI-N-OCTYLPHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND
FLUORANTHENE	0.29	0.35	0.37 J-	0.96	0.27	0.051 J	ND	0.018 J
FLUORENE	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROBUTADIENE	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROCYCLOPENTADIENE	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND
INDENO(1,2,3-C,D)PYRENE	0.094 J	0.12 J	0.086 J	0.27	0.097 J	ND	ND	ND
ISOPHORONE	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	ND	ND	ND	ND	ND	ND	ND	ND
NITROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
N-NITROSODI-N-PROPYLAMINE	ND	ND	ND	ND	ND	ND	ND	ND
N-NITROSODIPHENYLAMINE	ND	ND	ND	ND	ND	ND	ND	ND
PENTACHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
PHENANTHRENE	0.13 J	0.16 J	0.12 J	0.35	0.11 J	0.022 J	ND	ND
PHENOL	ND	ND	ND	ND	ND	ND	ND	ND
PYRENE	0.24	0.29	0.31 J-	0.77	0.23	0.04 J	ND	ND

Table A-5c Analytical Results for Semi-volatiles in Soil Samples Collected from the Background Location

Analyte	Sample ID: BG1-SS04-Z2 Depth: 0.5 - 2.0 ft Date: 11/25/2014	BG1-SS05-Z1 0 - 0.5 ft 11/25/2014	BG1-SS05-Z2 0.5 - 2.0 ft 11/25/2014	BG1-SS06-Z1 0 - 0.5 ft 11/25/2014	BG1-SS06-Z2 0.5 - 2.0 ft 11/25/2014	BG1-SS07-Z1 0 - 0.5 ft 11/25/2014	BG1-SS07-Z2 0.5 - 2.0 ft 11/25/2014
BIS(2-CHLOROISOPROPYL) ETHER	ND	ND	ND	ND	ND	ND	ND
BIS(2-ETHYLHEXYL) PHTHALATE	ND	0.021 J	ND	0.021 J	ND	0.026 J	ND
CAPROLACTAM	ND	ND	ND	ND	ND	ND	ND
CARBAZOLE	ND	ND	ND	ND	ND	ND	ND
CHRYSENE	ND	0.02 J	ND	ND	ND	0.079 J	0.021 J
DIBENZ(A,H)ANTHRACENE	ND	ND	ND	ND	ND	ND	ND
DIBENZOFURAN	ND	ND	ND	ND	ND	ND	ND
DIETHYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND
DIMETHYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND
DI-N-BUTYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND
DI-N-OCTYLPHTHALATE	ND	ND	ND	ND	ND	ND	ND
FLUORANTHENE	ND	0.034 J	ND	0.021 J	ND	0.18 J	0.038 J
FLUORENE	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROBUTADIENE	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROCYCLOPENTADIENE	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROETHANE	ND	ND	ND	ND	ND	ND	ND
INDENO(1,2,3-C,D)PYRENE	ND	ND	ND	ND	ND	0.038 J	ND
ISOPHORONE	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	ND	ND	ND	ND	ND	ND	ND
NITROBENZENE	ND	ND	ND	ND	ND	ND	ND
N-NITROSODI-N-PROPYLAMINE	ND	ND	ND	ND	ND	ND	ND
N-NITROSODIPHENYLAMINE	ND	ND	ND	ND	ND	ND	ND
PENTACHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND
PHENANTHRENE	ND	ND	ND	ND	ND	0.12 J	0.023 J
PHENOL	ND	ND	ND	ND	ND	ND	ND
PYRENE	ND	0.028 J	ND	ND	ND	0.13 J	0.03 J

Key:

Qualifiers

J = Estimated value

J- = Estimated value with low bias

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

"-FD" denotes field duplicate sample

Table A-5d Analytical Results for Pesticides in Soil Samples Collected from the Background Location

Analyte	Sample ID: BG1-SS01-Z1 Depth: 0 - 0.5 ft Date: 11/25/2014	BG1-SS01-Z2 0.5 - 2.0 ft 11/25/2014	BG1-SS02-Z1 0 - 0.5 ft 11/25/2014	BG1-SS02-Z1-FD 0 - 0.5 ft 11/25/2014	BG1-SS02-Z2 0.5 - 2.0 ft 11/25/2014	BG1-SS03-Z1 0 - 0.5 ft 11/25/2014	BG1-SS03-Z2 0.5 - 2.0 ft 11/25/2014	BG1-SS04-Z1 0 - 0.5 ft 11/25/2014
Pesticides, mg/kg								
ALDRIN	ND	ND	ND	ND	ND	ND	ND	ND
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	ND	ND	ND	ND	ND	ND	ND	ND
ALPHA ENDOSULFAN	ND	ND	ND	ND	ND	ND	ND	ND
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	ND	ND	ND	ND	ND	ND	ND	ND
BETA ENDOSULFAN	ND	ND	ND	ND	ND	0.0037 J	ND	ND
CIS-CHLORDANE	ND	ND	ND	ND	ND	ND	ND	ND
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	0.00098 J	ND	ND	ND	ND	ND	ND	ND
DIELDRIN	ND	ND	ND	ND	ND	ND	ND	ND
ENDOSULFAN SULFATE	ND	ND	ND	ND	ND	ND	ND	ND
ENDRIN	ND	ND	ND	ND	ND	ND	0.0019 J	ND
ENDRIN ALDEHYDE	ND	ND	ND	ND	ND	ND	ND	ND
ENDRIN KETONE	ND	ND	ND	ND	ND	ND	ND	ND
GAMMA BHC (LINDANE)	ND	ND	ND	ND	ND	ND	ND	ND
HEPTACHLOR	ND	ND	ND	ND	ND	ND	ND	ND
HEPTACHLOR EPOXIDE	ND	ND	0.00068 J	ND	ND	ND	ND	ND
METHOXYCHLOR	ND	ND	ND	ND	ND	ND	ND	ND
P,P'-DDD	ND	ND	ND	ND	ND	ND	ND	ND
P,P'-DDE	0.0068	0.0044	0.0085	0.0076	ND	ND	ND	ND
P,P'-DDT	0.0043 J	0.0033 J	0.0069	0.0068	0.0022 J	0.002 J	0.0014 J	0.0014 J
TOXAPHENE	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-CHLORDANE	0.0025	ND	ND	ND	ND	ND	ND	ND

Table A-5d Analytical Results for Pesticides in Soil Samples Collected from the Background Location

Analyte	Sample ID: BG1-SS04-Z2 Depth: 0.5 - 2.0 ft Date: 11/25/2014	BG1-SS05-Z1 0 - 0.5 ft 11/25/2014	BG1-SS05-Z2 0.5 - 2.0 ft 11/25/2014	BG1-SS06-Z1 0 - 0.5 ft 11/25/2014	BG1-SS06-Z2 0.5 - 2.0 ft 11/25/2014	BG1-SS07-Z1 0 - 0.5 ft 11/25/2014	BG1-SS07-Z2 0.5 - 2.0 ft 11/25/2014
Pesticides, mg/kg							
ALDRIN	ND	ND	ND	ND	ND	ND	ND
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	ND	ND	ND	ND	ND	ND	ND
ALPHA ENDOSULFAN	ND	ND	ND	ND	ND	ND	ND
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	ND	ND	ND	ND	ND	ND	ND
BETA ENDOSULFAN	ND	ND	ND	ND	ND	ND	ND
CIS-CHLORDANE	ND	ND	ND	ND	ND	ND	ND
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	ND	ND	ND	ND	ND	ND	ND
DIELDRIN	ND	ND	ND	ND	ND	ND	ND
ENDOSULFAN SULFATE	ND	ND	ND	ND	ND	ND	0.00022 J
ENDRIN	ND	0.002 J	ND	ND	ND	ND	ND
ENDRIN ALDEHYDE	ND	ND	ND	ND	ND	ND	ND
ENDRIN KETONE	ND	ND	ND	ND	ND	ND	ND
GAMMA BHC (LINDANE)	ND	ND	ND	ND	ND	ND	ND
HEPTACHLOR	ND	ND	ND	ND	ND	ND	0.00031 J
HEPTACHLOR EPOXIDE	ND	ND	ND	ND	ND	ND	ND
METHOXYCHLOR	ND	ND	ND	ND	ND	ND	ND
P,P'-DDD	ND	ND	ND	ND	ND	ND	ND
P,P'-DDE	ND	ND	ND	ND	ND	ND	ND
P,P'-DDT	ND	0.0016 J	ND	0.0012 J	0.001 J	ND	ND
TOXAPHENE	ND	ND	ND	ND	ND	ND	ND
TRANS-CHLORDANE	ND	ND	ND	ND	ND	ND	ND

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

"-FD" denotes field duplicate sample

Table A-5e Analytical Results for PCB Congeners in Soil Samples Collected from the Background Location

Analyte	Sample ID: BG1-SS01-Z1 Depth: 0 - 0.5 ft Date: 11/25/2014	Sample ID: BG1-SS06-Z1 Depth: 0 - 0.5 ft Date: 11/25/2014
PCB Congeners, ng/kg		
CHLOROBIPHENYL; 2- (PCB 1)	2.9	ND
CHLOROBIPHENYL; 3- (PCB 2)	2	ND
CHLOROBIPHENYL; 4- (PCB 3)	4.1	ND
COELUTE: OCTACHLOROBIPHENYL: 2,2',3,3',4,5,5',6/2,2',3,3',4,5,5',6'	189	14
COELUTE: TETRACHLOROBIPHENYL: 2,2',3,6/2,2',4,6'	ND	ND
COLUTE: HEPTACHLOROBIPHENYLS; 2,2',3,3',4,4',6-(PCB 171)/ 2,2',3,3',4,5,6-(PCB 173)	29	ND
COLUTE: HEPTACHLOROBIPHENYLS; 2,2',3,4,4',5,5'-(PCB 180)/ 2,3,3',4',5,5',6-(PCB 193)	273	22.6
COLUTE: HEXACHLOROBIPHENYLS; 2,2',3,3',4,4'-(PCB 128)/ 2,3,4,4',5,6-(PCB 166)	121	6.5
COLUTE: HEXACHLOROBIPHENYLS; 2,2',3,3',4,5-(PCB 129)/ 2,2',3,4,4',5'-(PCB 138)/ 2,3,3',4',5,6 (PCB 163)	725	46.2
COLUTE: HEXACHLOROBIPHENYLS; 2,2',3,3',5,6'-(PCB 135)/ 2,2',3,5,5',6-(PCB 151)	78.5	ND
COLUTE: HEXACHLOROBIPHENYLS; 2,2',3,4,4',6-(PCB 139)/ 2,2',3,4,4',6'-(PCB 140)	6.7	ND
COLUTE: HEXACHLOROBIPHENYLS; 2,2',3,4',5,6-(PCB 147)/ 2,2',3,4',5',6-(PCB 149)	213	9.1
COLUTE: HEXACHLOROBIPHENYLS; 2,2',4,4',5,5'-(PCB 153)/ 2,3',4,4',5',6-(PCB 168)	442	26.8 J
COLUTE: HEXACHLOROBIPHENYLS; 2,3,3',4,4',5-(PCB 156)/ 2,3,3',4,4',5'-(PCB 157)	104	5.5
COLUTE: PENTACHLOROBIPHENYLS; 2,2',3,4,4'-(PCB 85)/2,3,4,5,6-(PCB 116)/ 2,3,4',5,6-(PCB 117)	100	ND
COLUTE: PENTACHLOROBIPHENYLS; 2,2',3,4,5-(PCB 86)/ 2,2',3,4,5'-(PCB 87)/ 2,2',3,4',5'-(PCB 97) /2,3,3',4,6-(PCB109) / 2,3',4,4',6-(PCB 119)/ 2,3',4',5',6-(PCB 125)	142	ND
COLUTE: PENTACHLOROBIPHENYLS; 2,2',3,4',5-(PCB 90)/2,2',4,5,5'-(PCB 101)/ 2,3,3',5',6-(PCB 113)	186	6.2
COLUTE: PENTACHLOROBIPHENYLS; 2,2',3,4',6'-(PCB 98)/ 2,2',4,5,6'-(PCB 102)	ND	ND
COLUTE: PENTACHLOROBIPHENYLS; 2,2',3,5,6-(PCB 93)/2,2',4,4',6-(PCB 100)	ND	ND
COLUTE: PENTACHLOROBIPHENYLS; 2,3,3',4,5'-(PCB 108)/ 2,3',4',5,5'-(PCB 124)	25.2	ND
COLUTE: PENTACHLOROBIPHENYLS; 2,3,3',4',6-(PCB 110)/ 2,3,4,4',6-(PCB 115)	365	7.2
COLUTE: TETRACHLOROBIPHENYLS; 2,2',3,3'-(PCB 40)/ 2,3',4',6-(PCB 71)	11.5	ND
COLUTE: TETRACHLOROBIPHENYLS; 2,2',3,5'-(PCB 44)/ 2,2',4,4'-(PCB 47)/ 2,3,5,6-(PCB 65)	47.1	ND
COLUTE: TETRACHLOROBIPHENYLS; 2,2',4,5'-(PCB 49)/ 2,3',4,6-(PCB 69)	35.9	ND
COLUTE: TETRACHLOROBIPHENYLS; 2,2',4,6-(PCB 50)/ 2,2',5,6'-(PCB 53)	ND	ND
COLUTE: TETRACHLOROBIPHENYLS; 2,3,3',6-(PCB 59)/ 2,3,4,6-(PCB 62)/ 2,4,4',6-(PCB 75)	ND	ND
COLUTE: TETRACHLOROBIPHENYLS; 2,3,4,5-(PCB 61)/ 2,3',4',5-(PCB 70)/ 2,4,4',5-(PCB 74)/ 2,3',4',5'-(PCB 76)	213	ND
COLUTE: TRICHLOROBIPHENYLS; 2,2',5-(PCB 18)/ 2,4,6-(PCB 30)	11.9	ND
COLUTE: TRICHLOROBIPHENYLS; 2,3,3'-(PCB 20)/ 2,4,4'-(PCB 28)	34.6	ND
COLUTE: TRICHLOROBIPHENYLS; 2,3,4-(PCB 21)/ 2,3',4'-(PCB 33)	12.8	ND
COLUTE: TRICHLOROBIPHENYLS; 2,3',5-(PCB 26)/ 2,4,5-(PCB 29)	4.2	ND
DECACHLOROBIPHENYL (PCB 209)	141	7.8
DICHLOROBIPHENYL	24.3	2.3
DICHLOROBIPHENYL, 2,2'- (PCB 4)	ND	ND
DICHLOROBIPHENYL; 2,3- (PCB 5)	ND	ND
DICHLOROBIPHENYL; 2,3'- (PCB 6)	ND	ND

Table A-5e Analytical Results for PCB Congeners in Soil Samples Collected from the Background Location

Analyte	Sample ID: BG1-SS01-Z1 Depth: 0 - 0.5 ft Date: 11/25/2014	Sample ID: BG1-SS06-Z1 Depth: 0 - 0.5 ft Date: 11/25/2014
DICHLOROBIPHENYL; 2,4- (PCB 7)	ND	ND
DICHLOROBIPHENYL; 2,4'- (PCB 8)	6.7	ND
DICHLOROBIPHENYL; 2,5- (PCB 9)	ND	ND
DICHLOROBIPHENYL; 2,6- (PCB 10)	ND	ND
DICHLOROBIPHENYL; 3,3'- (PCB 11)	ND	ND
DICHLOROBIPHENYL; 3,4 -(PCB 12)/ 3,4'-(PCB 13)	ND	ND
DICHLOROBIPHENYL; 3,5- (PCB 14)	ND	ND
DICHLOROBIPHENYL; 4,4'- (PCB 15)	17.5	ND
HEPTACHLOROBIPHENYL; 2,2',3,3',4,4',5- (PCB 170)	123	9.7
HEPTACHLOROBIPHENYL; 2,2',3,3',4,5,5'- (PCB 172)	23	2.5
HEPTACHLOROBIPHENYL; 2,2',3,3',4,5,6'- (PCB 174)	112	6.9
HEPTACHLOROBIPHENYL; 2,2',3,3',4,5',6- (PCB 175)	3.5	ND
HEPTACHLOROBIPHENYL; 2,2',3,3',4',5,6- (PCB 177)	77.2	4.6
HEPTACHLOROBIPHENYL; 2,2',3,3',4,6,6'- (PCB 176)	6.8	ND
HEPTACHLOROBIPHENYL; 2,2',3,3',5,5',6- (PCB 178)	40.6	2.8
HEPTACHLOROBIPHENYL; 2,2',3,3',5,6,6'- (PCB 179)	40.2	2.1 J
HEPTACHLOROBIPHENYL; 2,2',3,4,4',5,6- (PCB 181)	ND	ND
HEPTACHLOROBIPHENYL; 2,2',3,4,4',5,6'- (PCB 182)	ND	ND
HEPTACHLOROBIPHENYL; 2,2',3,4,4',6,6'- (PCB 184)	ND	ND
HEPTACHLOROBIPHENYL; 2,2',3,4',5,5',6- (PCB 187)	201	13.7
HEPTACHLOROBIPHENYL; 2,2',3,4',5,5',6- (PCB 187)	201	13.7
HEPTACHLOROBIPHENYL; 2,2',3,4,5,6,6'- (PCB 186)	ND	ND
HEPTACHLOROBIPHENYL; 2,2',3,4',5,6,6'- (PCB 188)	ND	ND
HEPTACHLOROBIPHENYL; 2,3,3',4,4',5,5'- (PCB 189)	8.9	ND
HEPTACHLOROBIPHENYL; 2,3,3',4,4',5,6- (PCB 190)	37.3	2.3
HEPTACHLOROBIPHENYL; 2,3,3',4,4',5',6- (PCB 191)	3.8	ND
HEPTACHLOROBIPHENYL; 2,3,3',4,5,5',6- (PCB 192)	ND	ND
HEXACHLOROBIPHENYL; 2,2',3,3',4,5'- (PCB 130)	42	2.3
HEXACHLOROBIPHENYL; 2,2',3,3',4,6- (PCB 131)	3.2	ND
HEXACHLOROBIPHENYL; 2,2',3,3',4,6'- (PCB 132)	94.4	2.9
HEXACHLOROBIPHENYL; 2,2',3,3',5,5'- (PCB 133)	9.4	ND
HEXACHLOROBIPHENYL; 2,2',3,3',5,6- (PCB 134)	13.2	ND
HEXACHLOROBIPHENYL; 2,2',3,3',6,6'- (PCB 136)	18.4	ND
HEXACHLOROBIPHENYL; 2,2',3,4,4',5- (PCB 137)	27.8	2.2
HEXACHLOROBIPHENYL; 2,2',3,4,5,5'- (PCB 141)	61.8	3
HEXACHLOROBIPHENYL; 2,2',3,4',5,5'- (PCB 146)	75.4	4.9
HEXACHLOROBIPHENYL; 2,2',3,4,5,6- (PCB 142)	ND	ND
HEXACHLOROBIPHENYL; 2,2',3,4,5,6'- (PCB 143)	ND	ND
HEXACHLOROBIPHENYL; 2,2',3,4,5',6- (PCB 144)	8.2	ND
HEXACHLOROBIPHENYL; 2,2',3,4',5,6'- (PCB 148)	ND	ND
HEXACHLOROBIPHENYL; 2,2',3,4,6,6'- (PCB 145)	ND	ND

Table A-5e Analytical Results for PCB Congeners in Soil Samples Collected from the Background Location

Analyte	Sample ID: BG1-SS01-Z1 Depth: 0 - 0.5 ft Date: 11/25/2014	Sample ID: BG1-SS06-Z1 Depth: 0 - 0.5 ft Date: 11/25/2014
HEXACHLOROBIPHENYL; 2,2',3,4',6,6'- (PCB 150)	ND	ND
HEXACHLOROBIPHENYL; 2,2',3,5,6,6'- (PCB 152)	ND	ND
HEXACHLOROBIPHENYL; 2,2',4,4',5',6- (PCB 154)	3.1	ND
HEXACHLOROBIPHENYL; 2,2',4,4',6,6'- (PCB 155)	ND	ND
HEXACHLOROBIPHENYL; 2,3,3',4,4',6- (PCB 158)	49.9	3.2
HEXACHLOROBIPHENYL; 2,3,3',4,5,5'- (PCB 159)	3.7	ND
HEXACHLOROBIPHENYL; 2,3,3',4',5,5'- (PCB 162)	3.1	ND
HEXACHLOROBIPHENYL; 2,3,3',4,5,6- (PCB 160)	ND	ND
HEXACHLOROBIPHENYL; 2,3,3',4,5',6- (PCB 161)	ND	ND
HEXACHLOROBIPHENYL; 2,3,3',4',5',6- (PCB 164)	41	ND
HEXACHLOROBIPHENYL; 2,3,3',5,5',6- (PCB 165)	ND	ND
HEXACHLOROBIPHENYL; 2,3',4,4',5,5'- (PCB 167)	38.1	2.4
HEXACHLOROBIPHENYL; 3,3',4,4',5,5'- (PCB 169)	ND	ND
MONOCHLOROBIPHENYL	9	ND
NONACHLOROBIPHENYL	259	16.2
NONACHLOROBIPHENYL; 2,2',3,3',4,4',5,5',6- (PCB 206)	161	11.1
NONACHLOROBIPHENYL; 2,2',3,3',4,4',5,6,6'- (PCB 207)	17.3	ND
NONACHLOROBIPHENYL; 2,2',3,3',4,5,5',6,6'- (PCB 208)	81.5	5.1
OCTACHLOROBIPHENYL (MIXED ISOMERS)	543	36.7
OCTACHLOROBIPHENYL; 2,2',3,3',4,4',5,5'- (PCB 194)	80.1	6.1
OCTACHLOROBIPHENYL; 2,2',3,3',4,4',5,6- (PCB 195)	32.4	2
OCTACHLOROBIPHENYL; 2,2',3,3',4,4',5,6'- (PCB 196)	32.5	2.8
OCTACHLOROBIPHENYL; 2,2',3,3',4,5',6,6'- (PCB 201)	10.8	ND
OCTACHLOROBIPHENYL; 2,2',3,3',5,5',6,6'- (PCB 202)	59.8	4.2
OCTACHLOROBIPHENYL; 2,2',3,4,4',5,5',6- (PCB 203)	116	7.6
OCTACHLOROBIPHENYL; 2,2',3,4,4',5,6,6'- (PCB 204)	ND	ND
OCTACHLOROBIPHENYL; 2,3,3',4,4',5,5',6- (PCB 205)	6.1	ND
PCB, TOTAL	7110	310
PCB-183/185	66.2	4.9
PCB-197/200	15.8	ND
PENTACHLOROBIPHENYL:2,2',3,4,6/2,2'3,4',6	22.9	ND
PENTACHLOROBIPHENYL; 2,2',3,3',4- (PCB 82)	20.3	ND
PENTACHLOROBIPHENYL; 2,2',3,3',5- (PCB 83)	11.9	ND
PENTACHLOROBIPHENYL; 2,2',3,3',6- (PCB 84)	33	ND
PENTACHLOROBIPHENYL; 2,2',3,4,6'- (PCB 89)	ND	ND
PENTACHLOROBIPHENYL; 2,2',3,5,5'- (PCB 92)	34.3	ND
PENTACHLOROBIPHENYL; 2,2',3,5,6'- (PCB 94)	ND	ND
PENTACHLOROBIPHENYL; 2,2',3,5',6- (PCB 95)	107	2.9
PENTACHLOROBIPHENYL; 2,2',3,6,6'- (PCB 96)	ND	ND
PENTACHLOROBIPHENYL; 2,2',4,4',5- (PCB 99)	169	5.5

Table A-5e Analytical Results for PCB Congeners in Soil Samples Collected from the Background Location

Analyte	Sample ID: BG1-SS01-Z1 Depth: 0 - 0.5 ft Date: 11/25/2014	Sample ID: BG1-SS06-Z1 Depth: 0 - 0.5 ft Date: 11/25/2014
PENTACHLOROBIPHENYL; 2,2',4,5',6- (PCB 103)	ND	ND
PENTACHLOROBIPHENYL; 2,2',4,6,6'- (PCB 104)	ND	ND
PENTACHLOROBIPHENYL; 2,3,3',4,4'- (PCB 105)	295	14.3
PENTACHLOROBIPHENYL; 2,3,3',4,5- (PCB 106)	ND	ND
PENTACHLOROBIPHENYL; 2,3,3',4',5- (PCB 107)	45.7	2.5
PENTACHLOROBIPHENYL; 2',3,3',4,5- (PCB 122)	6.9	ND
PENTACHLOROBIPHENYL; 2,3,3',5,5'- (PCB 111)	ND	ND
PENTACHLOROBIPHENYL; 2,3,3',5,6- (PCB 112)	ND	ND
PENTACHLOROBIPHENYL; 2,3,4,4',5- (PCB 114)	12.2	ND
PENTACHLOROBIPHENYL; 2,3',4,4',5- (PCB 118)	463	18.1
PENTACHLOROBIPHENYL; 2',3,4,4',5- (PCB 123)	9.6	ND
PENTACHLOROBIPHENYL; 2,3',4,5,5'- (PCB 120)	2.2	ND
PENTACHLOROBIPHENYL; 2,3',4,5',6- (PCB 121)	ND	ND
PENTACHLOROBIPHENYL; 3,3',4,4',5- (PCB 126)	13.7	ND
PENTACHLOROBIPHENYL; 3,3',4,5,5'- (PCB 127)	ND	ND
TEQ PCB	1.4	0.0012
TETRACHLOROBIPHENYL	687	5.2
TETRACHLOROBIPHENYL; 2,2',3,4- (PCB 41)	2.5	ND
TETRACHLOROBIPHENYL; 2,2',3,4'- (PCB 42)	8.9	ND
TETRACHLOROBIPHENYL; 2,2',3,5- (PCB 43)	ND	ND
TETRACHLOROBIPHENYL; 2,2',3,6'- (PCB 46)	ND	ND
TETRACHLOROBIPHENYL; 2,2',4,5- (PCB 48)	6	ND
TETRACHLOROBIPHENYL; 2,2',5,5'- (PCB 52)	73.2	2.7
TETRACHLOROBIPHENYL; 2,2',6,6'- (PCB 54)	ND	ND
TETRACHLOROBIPHENYL; 2,3,3',4- (PCB 55)	ND	ND
TETRACHLOROBIPHENYL; 2,3,3',4'- (PCB 56)	49.7	ND
TETRACHLOROBIPHENYL; 2,3,3',5- (PCB 57)	ND	ND
TETRACHLOROBIPHENYL; 2,3,3',5'- (PCB 58)	ND	ND
TETRACHLOROBIPHENYL; 2,3,4,4'- (PCB 60)	33.3	ND
TETRACHLOROBIPHENYL; 2,3',4,4'- (PCB 66)	117	2.5
TETRACHLOROBIPHENYL; 2,3,4',5- (PCB 63)	5	ND
TETRACHLOROBIPHENYL; 2,3',4,5- (PCB 67)	ND	ND
TETRACHLOROBIPHENYL; 2,3',4,5'- (PCB 68)	ND	ND
TETRACHLOROBIPHENYL; 2,3,4',6- (PCB 64)	42.6	ND
TETRACHLOROBIPHENYL; 2,3',5,5'- (PCB 72)	ND	ND
TETRACHLOROBIPHENYL; 2,3',5',6- (PCB 73)	2 J	ND
TETRACHLOROBIPHENYL; 3,3',4,4'- (PCB 77)	31.6	ND
TETRACHLOROBIPHENYL; 3,3',4,5- (PCB 78)	ND	ND
TETRACHLOROBIPHENYL; 3,3',4,5'- (PCB 79)	6.4	ND
TETRACHLOROBIPHENYL; 3,3',5,5'- (PCB 80)	ND	ND

Table A-5e Analytical Results for PCB Congeners in Soil Samples Collected from the Background Location

Analyte	Sample ID: BG1-SS01-Z1 Depth: 0 - 0.5 ft Date: 11/25/2014	Sample ID: BG1-SS06-Z1 Depth: 0 - 0.5 ft Date: 11/25/2014
TETRACHLOROBIPHENYL; 3,4,4',5- (PCB 81)	2.5	ND
TRICHLOROBIPHENYL	153	ND
TRICHLOROBIPHENYL; 2,2',3- (PCB 16)	4.3	ND
TRICHLOROBIPHENYL; 2,2',4- (PCB 17)	5.2	ND
TRICHLOROBIPHENYL; 2,2',6- (PCB 19)	ND	ND
TRICHLOROBIPHENYL; 2,3,4'- (PCB 22)	12.2	ND
TRICHLOROBIPHENYL; 2,3',4- (PCB 25)	2.1	ND
TRICHLOROBIPHENYL; 2,3,5- (PCB 23)	ND	ND
TRICHLOROBIPHENYL; 2',3,5- (PCB 34)	ND	ND
TRICHLOROBIPHENYL; 2,3,6- (PCB 24)	ND	ND
TRICHLOROBIPHENYL; 2,3',6- (PCB 27)	ND	ND
TRICHLOROBIPHENYL; 2,4',5- (PCB 31)	34.3	ND
TRICHLOROBIPHENYL; 2,4',6- (PCB 32)	2.9	ND
TRICHLOROBIPHENYL; 3,3',4- (PCB 35)	ND	ND
TRICHLOROBIPHENYL; 3,3',5- (PCB 36)	ND	ND
TRICHLOROBIPHENYL; 3,4,4'- (PCB 37)	28.4	ND
TRICHLOROBIPHENYL; 3,4,5- (PCB 38)	ND	ND
TRICHLOROBIPHENYL; 3,4',5- (PCB 39)	ND	ND
TOTAL HEPTACHLOROBIPHENYLS	1050	72.1 J
TOTAL HEXACHLOROBIPHENYLS	2180	115 J
TOTAL PENTACHLOROBIPHENYLS	2060	56.7

Key:

Qualifiers

J = Estimated value

Other

ng/kg = Nanograms per kilogram

-- = Analyte not analyzed for

"-FD" denotes field duplicate sample

Table A-5f Analytical Results for Dioxins/Furans in Soil Samples Collected from the Background Location

Analyte	Sample ID: BG1-SS01-Z1 Depth: 0 - 0.5 ft Date: 11/25/2014	BG1-SS02-Z1 0 - 0.5 ft 11/25/2014	BG1-SS02-Z1-FD 0 - 0.5 ft 11/25/2014	BG1-SS03-Z1 0 - 0.5 ft 11/25/2014	BG1-SS04-Z1 0 - 0.5 ft 11/25/2014	BG1-SS05-Z1 0 - 0.5 ft 11/25/2014	BG1-SS06-Z1 0 - 0.5 ft 11/25/2014	BG1-SS07-Z1 0 - 0.5 ft 11/25/2014
Dioxins/Furans, ng/kg								
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	14.2	9.33	7.66	3.76 J	1.91 J	4.13 J	4.81 J	4.38 J
1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN	25.9	18.5	15.6	7.32	3.51 J	6.67	9.95	5.08
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	1.28 J	0.628 J	0.592 J	0.247 J	0.177 J	0.408 J	0.422 J	0.193 J
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	4.51 J	3 J	2.71 J	1.56 J	0.62 J	1.6 J	1.46 J	1.19 J
1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN	1.21 J	0.742 J	0.754 J	0.384 J	ND	ND	0.494 J	0.256 J
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	2.37 J	1.41 J	1.48 J	0.787 J	0.342 J	0.875 J	0.932 J	0.556 J
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	2.1 J	1.61 J	1.23 J	0.71 J	0.244 J	0.71 J	0.85 J	0.4 J
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	0.822 J	0.504 J	0.467 J	0.334 J	ND	0.338 J	0.294 J	0.223 J
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	1.98 J	1.01 J	ND	0.564 J	0.359 J	0.541 J	1.02 J	0.339 J
1,2,3,7,8-PENTACHLORODIBENZOFURAN	2.92 J	2.23 J	2.09 J	0.99 J	0.261 J	1.33 J	0.868 J	0.797 J
1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN	1.31 J	0.899 J	0.766 J	0.612 EMPCJ	0.231 J	0.525 J	0.531 J	0.323 J
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	2.55 J	1.6 J	1.58 J	0.778 J	0.347 J	0.837 J	0.93 J	0.566 J
2,3,4,7,8-PENTACHLORODIBENZOFURAN	2.9 J	1.94 J	2.02 J	1.09 J	0.319 J	1.24 J	0.918 J	0.657 J
2,3,7,8-TCDD TOXIC EQUIVALENT (TEQ), WHO TEF 2005 (ND=0)	5.16	3.61	3.14	1.32	0.787	2.01	1.67	1.41
2,3,7,8-TETRACHLORODIBENZOFURAN	2.16	2.13	1.62	0.818 EMPCJ	0.479 J	1.42	0.689 J	0.74 J
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	0.653 J	0.527 J	0.454 J	0.247 J	0.152 J	0.314 J	0.261 EMPCJ	0.327 J
HEPTACHLORODIBENZOFURANS	22.7	18.1	12.7	5.9	3.14 J	6.43	7.73	6.28
HEPTACHLORODIBENZO-P-DIOXINS	53.8	40.8	32.6	15.2	6.69	14.3	20.3	10.6
HEXACHLORODIBENZOFURAN	32.7	21	18.5	9.46	3.79 J	10.2	10.2	6.6
HEXACHLORODIBENZO-P-DIOXIN	32.1	21.6	19.9	10.3	3.98 J	9.61	11.4	6.68
OCTACHLORODIBENZOFURAN	19	20.1	10.2	4.43 J	2.24 J	5.28 J	6.18 J	3.91 J
OCTACHLORODIBENZO-P-DIOXIN	165	161	98.3	36.6	16.7	36.8	53.7	33.7
PENTACHLORO DIBENZOFURAN	42.6	28.7	28	13	4.01 J	16.4	12.2	9.74
PENTACHLORODIBENSO-P-DIOXIN	21.7	13.3	12.7	7.05	2.24 J	8.2	6.38	4.71 J
TETRACHLORODIBENZOFURAN	44.4	33.4	31.5	14.6	2.49	15.6	9.85	10.5
TETRACHLORODIBENZO-P-DIOXIN	17.2	9.29	11	4.92	1.41	5.8	4.07	4.44

Key:

Qualifiers

J = Estimated value

EMPC = Estimated Maximum Possible Concentration

Other

ng/kg = Nanograms per kilogram

Table A-6a Analytical Results for PCB Aroclors in Groundwater Samples Collected from Eighteenmile Creek Operable Unit 2

Analyte / Sample ID: / Date:	OU2-MW05 12/18/2014	OU2-MW05 5/19/2015	OU2-MW14 12/18/2014	OU2-MW14 5/19/2015	OU2-MW15 12/19/2014	OU2-MW15 5/19/2015	OU2-MW16 12/18/2014	OU2-MW16-FD 12/18/2014	OU2-MW16 5/18/2015	OU2-MW16-FD 5/18/215
PCB Aroclors, µg/L										
PCB-1016 (AROCLOR 1016)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1221 (AROCLOR 1221)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1232 (AROCLOR 1232)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1242 (AROCLOR 1242)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1248 (AROCLOR 1248)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1254 (AROCLOR 1254)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1260 (AROCLOR 1260)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1262 (AROCLOR 1262)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1268 (AROCLOR 1268)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table A-6a Analytical Results for PCB Aroclors in Groundwater Samples Collected from Eighteenmile Creek Operable Unit 2

Analyte / Sample ID: / Date:	OU2-MW18 12/19/2014	OU2-MW18 5/20/2015	OU2-WP01-TOT 1/26/2016	OU2-WP01-DIS 1/26/2016	OU2-WP02-TOT 1/25/2016	OU2-WP02-DIS 1/25/2016
PCB Aroclors, µg/L						
PCB-1016 (AROCLOR 1016)	ND	ND	ND	ND	ND	ND
PCB-1221 (AROCLOR 1221)	ND	ND	ND	ND	ND	ND
PCB-1232 (AROCLOR 1232)	ND	ND	ND	ND	ND	ND
PCB-1242 (AROCLOR 1242)	ND	ND	ND	ND	ND	ND
PCB-1248 (AROCLOR 1248)	ND	ND	ND	ND	ND	ND
PCB-1254 (AROCLOR 1254)	ND	ND	ND	ND	ND	ND
PCB-1260 (AROCLOR 1260)	ND	ND	ND	ND	ND	ND
PCB-1262 (AROCLOR 1262)	ND	ND	ND	ND	ND	ND
PCB-1268 (AROCLOR 1268)	ND	ND	ND	ND	ND	ND

Key:

Other

ND = Sample is "non-detect"

µg/L = Micrograms per liter

"-FD" denotes field duplicate sample

Table A-6b Analytical Results for TAL Metals in Groundwater Samples Collected from Eighteenmile Creek Operable Unit 2

Sample ID:	OU2-MW05	OU2-MW05	OU2-MW14	OU2-MW14	OU2-MW15	OU2-MW15	OU2-MW16	OU2-MW16-FD	OU2-MW16	OU2-MW16-FD
Date:	12/18/2014	5/19/2015	12/18/2014	5/19/2015	12/19/2014	5/19/2015	12/18/2014	12/18/2014	5/18/2015	5/18/215
Analyte										
Metals, µg/L										
ALUMINUM	1070	37	ND	3.0 J	81	7.3 J	105 J	ND	3.9 J	ND
ANTIMONY	ND	ND	ND	2.4	ND	ND	ND	ND	ND	ND
ARSENIC	5.3	2.3	ND	ND	ND	0.51 J	ND	ND	ND	ND
BARIUM	105	130	74	72	57.9	53	42	43	52	51
BERYLLIUM	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CADMIUM	ND	ND	ND	0.18 J	ND	ND	ND	ND	ND	ND
CALCIUM	280000	210000	121000	130000	145000	160000	120000	116000	160000	150000
CHROMIUM, HEXAVALENT	--	ND	--	ND	--	--	--	--	--	--
CHROMIUM, TOTAL	ND	ND	ND	ND	ND	0.59 J	ND	ND	ND	ND
COBALT	3.7	0.88	ND	0.21 J	ND	0.29 J	ND	ND	0.27 J	0.23 J
COPPER	2.2	0.88 J	ND	1.2 J	6.9	5.9	2.7	2.3	3.1	2.8
IRON	5470	2500	477	ND	585	18 J	577	475	73	ND
LEAD	12.1	2.4	ND	0.019 J	ND	0.11 J	ND	ND	0.33 J	0.25 J
MAGNESIUM	155000	68000	39100	36000	47200	45000	34700	34100	41000	40000
MANGANESE	886	510	1.5	0.61 J	12	1.7 J	25.3 J	1.6 J	17	4.6 J
MERCURY	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NICKEL	11.7	ND	2.9	0.28 J	5.3	2.6	3.1	2.7	0.56 J	0.36 J
POTASSIUM	5820	4500	4890	4600	8820	7900	8590	8590	8500	8400
SELENIUM	3.0 J	ND	0.95 J	ND	2.6 J	ND	0.92 J	0.74 J	ND	ND
SILVER	ND	ND	ND	ND	ND	0.045 J	ND	ND	ND	ND
SODIUM	74400	85000	203000	190000	350000	350000	297000	257000	370000	370000
THALLIUM	ND	ND	ND	ND	ND	ND	ND	ND	1.0 J	ND
VANADIUM	3.8 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
ZINC	1070	37	ND	4.0 J	82	7.3 J	106 J	ND	3.9 J	ND

Table A-6b Analytical Results for TAL Metals in Groundwater Samples Collected from Eighteenmile Creek Operable Unit 2

Sample ID: / Date: / Analyte	OU2-MW18 12/19/2014	OU2-MW18 5/20/2015
Metals, µg/L		
ALUMINUM	99.1	16 J
ANTIMONY	ND	5.2
ARSENIC	5.6	3.9
BARIUM	57	20
BERYLLIUM	ND	ND
CADMIUM	ND	ND
CALCIUM	164000	390000
CHROMIUM, HEXAVALENT	--	--
CHROMIUM, TOTAL	5.6	1.9 J
COBALT	ND	0.65
COPPER	3.0	7.8
IRON	883	2700
LEAD	ND	1.2
MAGNESIUM	16900	34000
MANGANESE	176	180
MERCURY	ND	ND
NICKEL	4.3	3.4
POTASSIUM	30300	42000
SELENIUM	16.8	16
SILVER	ND	ND
SODIUM	546000	790000
THALLIUM	ND	ND
VANADIUM	ND	0.31 J
ZINC	100.1	17 J

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

µg/L = Micrograms per liter

-- = Analyte not analyzed for

"-FD" denotes field duplicate sample

Table A-6c Analytical Results for Pesticides in Groundwater Samples Collected from Eighteenmile Creek Operable Unit 2

Analyte / Sample ID: / Date:	OU2-MW05 12/18/2014	OU2-MW05 5/19/2015	OU2-MW14 12/18/2014	OU2-MW14 5/19/2015	OU2-MW15 12/19/2014	OU2-MW15 5/19/2015	OU2-MW16 12/18/2014	OU2-MW16-FD 12/18/2014	OU2-MW16 5/18/2015
Pesticides, µg/L									
ALPHA ENDOSULFAN	ND	ND	ND	ND	ND	ND	ND	ND	ND
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	ND	ND	ND	ND	ND	ND	ND	ND	ND
BETA ENDOSULFAN	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-CHLORDANE	ND	ND	ND	ND	ND	ND	ND	ND	ND
DELTA BHC (DELTA	ND	ND	ND	ND	ND	ND	ND	ND	ND
DIELDRIN	0.0092 J	ND	ND	ND	ND	ND	ND	ND	ND
ENDOSULFAN SULFATE	ND	ND	ND	ND	ND	ND	ND	ND	ND
ENDRIN	ND	ND	ND	ND	ND	ND	ND	ND	ND
ENDRIN ALDEHYDE	ND	ND	ND	ND	ND	ND	ND	ND	ND
ENDRIN KETONE	ND	ND	ND	ND	ND	ND	ND	ND	ND
GAMMA BHC (LINDANE)	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEPTACHLOR	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEPTACHLOR EPOXIDE	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHOXYCHLOR	ND	0.00092 J	ND	ND	ND	ND	ND	ND	ND
P,P'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND
P,P'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND
P,P'-DDT	ND	ND	ND	ND	ND	ND	ND	0.029 J	ND
TOXAPHENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-CHLORDANE	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table A-6c Analytical Results for Pesticides in Groundwater Samples Collected from Eighteenmile Creek Operable Unit 2

Analyte / Sample ID: / Date:	OU2-MW16-FD 5/18/215	OU2-MW18 12/19/2014	OU2-MW18 5/20/2015
Pesticides, µg/L			
ALPHA ENDOSULFAN	ND	0.0093 J	ND
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	ND	ND	ND
BETA ENDOSULFAN	ND	ND	ND
CIS-CHLORDANE	ND	0.0043 J	ND
DELTA BHC (DELTA	ND	ND	0.00061 J
DIELDRIN	ND	0.0045 J	ND
ENDOSULFAN SULFATE	ND	ND	ND
ENDRIN	ND	ND	ND
ENDRIN ALDEHYDE	ND	ND	ND
ENDRIN KETONE	ND	ND	ND
GAMMA BHC (LINDANE)	ND	0.0013 J	ND
HEPTACHLOR	ND	ND	ND
HEPTACHLOR EPOXIDE	ND	ND	ND
METHOXYCHLOR	ND	ND	ND
P,P'-DDD	ND	0.0027 J	ND
P,P'-DDE	ND	ND	ND
P,P'-DDT	ND	ND	ND
TOXAPHENE	ND	ND	ND
TRANS-CHLORDANE	ND	ND	ND

Key:

Qualifiers

J = Estimated value

Other

ND = Standard is "non-detect"

µg/L = Micrograms per liter

"-FD" denotes field duplicate sample

Table A-6d Analytical Results for Semi-volatiles in Groundwater Samples Collected from Eighteenmile Creek Operable Unit 2

Analyte / Sample ID: / Date:	OU2-MW05 12/18/2014	OU2-MW05 5/19/2015	OU2-MW14 12/18/2014	OU2-MW14 5/19/2015	OU2-MW15 12/19/2014	OU2-MW15 5/19/2015	OU2-MW16 12/18/2014
Semi-volatile Compounds, µg/L							
1,2,4,5-TETRACHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND
2,3,4,6-TETRACHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND
2,4,5-TRICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND
2,4,6-TRICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND
2,4-DICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND
2,4-DIMETHYLPHENOL	ND	ND	ND	ND	ND	ND	ND
2,4-DINITROPHENOL	ND	ND	ND	ND	ND	ND	ND
2,4-DINITROTOLUENE	ND	ND	ND	ND	ND	ND	ND
2,6-DINITROTOLUENE	ND	ND	ND	ND	ND	ND	ND
2-CHLORONAPHTHALENE	ND	ND	ND	ND	ND	ND	ND
2-CHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND
2-METHYLNAPHTHALENE	ND	ND	ND	ND	ND	ND	ND
2-METHYLPHENOL (O-CRESOL)	ND	ND	ND	ND	ND	ND	ND
2-NITROANILINE	ND	ND	ND	ND	ND	ND	ND
2-NITROPHENOL	ND	ND	ND	ND	ND	ND	ND
3- AND 4- METHYLPHENOL (TOTAL)	--	ND	--	ND	--	ND	--
3,3'-DICHLOROBENZIDINE	ND	ND	ND	ND	ND	ND	ND
3-NITROANILINE	ND	ND	ND	ND	ND	ND	ND
4,6-DINITRO-2-METHYLPHENOL	ND	ND	ND	ND	ND	ND	ND
4-BROMOPHENYL PHENYL ETHER	ND	ND	ND	ND	ND	ND	ND
4-CHLORO-3-METHYLPHENOL	ND	ND	ND	ND	ND	ND	ND
4-CHLOROANILINE	ND	ND	ND	ND	ND	ND	ND
4-CHLOROPHENYL PHENYL ETHER	ND	ND	ND	ND	ND	ND	ND
4-METHYLPHENOL (P-CRESOL)	ND	--	ND	--	ND	--	ND
4-NITROANILINE	ND	ND	ND	ND	ND	ND	ND
4-NITROPHENOL	ND	ND	ND	ND	ND	ND	ND
ACENAPHTHENE	ND	ND	ND	ND	ND	ND	ND
ACENAPHTHYLENE	ND	ND	ND	ND	ND	ND	ND
ACETOPHENONE	ND	ND	ND	ND	ND	ND	ND
ANTHRACENE	ND	ND	ND	ND	ND	ND	ND
ATRAZINE	ND	ND	ND	ND	ND	ND	ND
BENZALDEHYDE	ND	ND	ND	ND	ND	ND	ND
BENZO(A)ANTHRACENE	ND	ND	ND	ND	ND	ND	ND
BENZO(A)PYRENE	ND	ND	ND	ND	ND	ND	ND
BENZO(B)FLUORANTHENE	ND	ND	ND	ND	ND	ND	ND
BENZO(G,H,I)PERYLENE	ND	ND	ND	ND	ND	ND	ND
BENZO(K)FLUORANTHENE	ND	ND	ND	ND	ND	ND	ND
BENZYL BUTYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND
BIPHENYL (DIPHENYL)	ND	ND	ND	ND	ND	ND	ND
BIS(2-CHLOROETHOXY) METHANE	ND	ND	ND	ND	ND	ND	ND
BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	ND	ND	ND	ND	ND	ND	ND
BIS(2-CHLOROISOPROPYL) ETHER	ND	ND	ND	ND	ND	ND	ND

Table A-6d Analytical Results for Semi-volatiles in Groundwater Samples Collected from Eighteenmile Creek Operable Unit 2

Analyte	Sample ID: OU2-MW16-FD Date: 12/18/2014	OU2-MW16 5/18/2015	OU2-MW16-FD 5/18/215	OU2-MW18 12/19/2014	OU2-MW18 5/20/2015
Semi-volatile Compounds, µg/L					
1,2,4,5-TETRACHLOROBENZENE	ND	ND	ND	ND	ND
2,3,4,6-TETRACHLOROPHENOL	ND	ND	ND	ND	ND
2,4,5-TRICHLOROPHENOL	ND	ND	ND	ND	ND
2,4,6-TRICHLOROPHENOL	ND	ND	ND	ND	ND
2,4-DICHLOROPHENOL	ND	ND	ND	ND	ND
2,4-DIMETHYLPHENOL	ND	ND	ND	ND	ND
2,4-DINITROPHENOL	ND	ND	ND	ND	ND
2,4-DINITROTOLUENE	ND	ND	ND	ND	ND
2,6-DINITROTOLUENE	ND	ND	ND	ND	ND
2-CHLORONAPHTHALENE	ND	ND	ND	ND	ND
2-CHLOROPHENOL	ND	ND	ND	ND	ND
2-METHYLNAPHTHALENE	ND	ND	ND	ND	ND
2-METHYLPHENOL (O-CRESOL)	ND	ND	ND	ND	ND
2-NITROANILINE	ND	ND	ND	ND	ND
2-NITROPHENOL	ND	ND	ND	ND	ND
3- AND 4- METHYLPHENOL (TOTAL)	--	ND	ND	--	ND
3,3'-DICHLOROBENZIDINE	ND	ND	ND	ND	ND
3-NITROANILINE	ND	ND	ND	ND	ND
4,6-DINITRO-2-METHYLPHENOL	ND	ND	ND	ND	ND
4-BROMOPHENYL PHENYL ETHER	ND	ND	ND	ND	ND
4-CHLORO-3-METHYLPHENOL	ND	ND	ND	ND	ND
4-CHLOROANILINE	ND	ND	ND	ND	ND
4-CHLOROPHENYL PHENYL ETHER	ND	ND	ND	ND	ND
4-METHYLPHENOL (P-CRESOL)	ND	--	--	ND	--
4-NITROANILINE	ND	ND	ND	ND	ND
4-NITROPHENOL	ND	ND	ND	ND	ND
ACENAPHTHENE	ND	ND	ND	ND	ND
ACENAPHTHYLENE	ND	ND	ND	ND	ND
ACETOPHENONE	ND	ND	ND	ND	ND
ANTHRACENE	ND	ND	ND	ND	ND
ATRAZINE	ND	ND	ND	ND	ND
BENZALDEHYDE	ND	ND	ND	ND	ND
BENZO(A)ANTHRACENE	ND	0.20	ND	ND	ND
BENZO(A)PYRENE	ND	0.15 J	ND	ND	ND
BENZO(B)FLUORANTHENE	ND	0.27	ND	ND	ND
BENZO(G,H,I)PERYLENE	ND	0.26	ND	ND	ND
BENZO(K)FLUORANTHENE	ND	0.3	ND	ND	ND
BENZYL BUTYL PHTHALATE	ND	ND	ND	ND	ND
BIPHENYL (DIPHENYL)	ND	ND	ND	ND	ND
BIS(2-CHLOROETHOXY) METHANE	ND	ND	ND	ND	ND
BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	ND	ND	ND	ND	ND
BIS(2-CHLOROISOPROPYL) ETHER	ND	ND	ND	ND	ND

Table A-6d Analytical Results for Semi-volatiles in Groundwater Samples Collected from Eighteenmile Creek Operable Unit 2

Analyte / Sample ID: / Date:	OU2-MW05 12/18/2014	OU2-MW05 5/19/2015	OU2-MW14 12/18/2014	OU2-MW14 5/19/2015	OU2-MW15 12/19/2014	OU2-MW15 5/19/2015	OU2-MW16 12/18/2014
BIS(2-ETHYLHEXYL) PHTHALATE	0.68 J	ND	ND	ND	0.43 J	ND	ND
CAPROLACTAM	1.2 J	ND	ND	ND	0.72 J	ND	ND
CARBAZOLE	ND	ND	ND	ND	ND	ND	ND
CHRYSENE	ND	ND	ND	ND	ND	ND	ND
DIBENZ(A,H)ANTHRACENE	ND	ND	ND	ND	ND	ND	ND
DIBENZOFURAN	ND	ND	ND	ND	ND	ND	ND
DIETHYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND
DIMETHYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND
DI-N-BUTYL PHTHALATE	ND	ND	0.49 J	ND	ND	ND	ND
DI-N-OCTYLPHTHALATE	ND	ND	ND	ND	ND	ND	ND
FLUORANTHENE	ND	ND	ND	ND	ND	ND	ND
FLUORENE	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROBUTADIENE	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROCYCLOPENTADIENE	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROETHANE	ND	ND	ND	ND	ND	ND	ND
INDENO(1,2,3-C,D)PYRENE	ND	ND	ND	ND	ND	ND	ND
ISOPHORONE	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	ND	ND	ND	ND	ND	ND	ND
NITROBENZENE	ND	ND	ND	ND	ND	ND	ND
N-NITROSODI-N-PROPYLAMINE	ND	ND	ND	ND	ND	ND	ND
N-NITROSODIPHENYLAMINE	ND	ND	ND	ND	ND	ND	ND
PENTACHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND
PHENANTHRENE	ND	ND	ND	ND	ND	ND	ND
PHENOL	ND	ND	ND	ND	ND	ND	ND
PYRENE	ND	ND	ND	ND	ND	ND	ND

Table A-6d Analytical Results for Semi-volatiles in Groundwater Samples Collected from Eighteenmile Creek Operable Unit 2

Analyte / Sample ID: / Date:	OU2-MW16-FD 12/18/2014	OU2-MW16 5/18/2015	OU2-MW16-FD 5/18/215	OU2-MW18 12/19/2014	OU2-MW18 5/20/2015
BIS(2-ETHYLHEXYL) PHTHALATE	ND	ND	ND	0.41 J	ND
CAPROLACTAM	0.46 J	ND	ND	ND	1.6 J
CARBAZOLE	ND	ND	ND	ND	ND
CHRYSENE	ND	0.27	ND	ND	ND
DIBENZ(A,H)ANTHRACENE	ND	0.31	ND	ND	ND
DIBENZOFURAN	ND	ND	ND	ND	ND
DIETHYL PHTHALATE	ND	ND	ND	ND	0.33 J
DIMETHYL PHTHALATE	ND	ND	ND	ND	ND
DI-N-BUTYL PHTHALATE	ND	ND	ND	0.43 J	ND
DI-N-OCTYLPHTHALATE	ND	ND	ND	ND	ND
FLUORANTHENE	ND	ND	ND	ND	ND
FLUORENE	ND	ND	ND	ND	ND
HEXACHLOROBENZENE	ND	ND	ND	ND	ND
HEXACHLOROBUTADIENE	ND	ND	ND	ND	ND
HEXACHLOROCYCLOPENTADIENE	ND	ND	ND	ND	ND
HEXACHLOROETHANE	ND	ND	ND	ND	ND
INDENO(1,2,3-C,D)PYRENE	ND	0.27	ND	ND	ND
ISOPHORONE	ND	ND	ND	ND	ND
NAPHTHALENE	ND	ND	ND	ND	ND
NITROBENZENE	ND	ND	ND	ND	ND
N-NITROSODI-N-PROPYLAMINE	ND	ND	ND	ND	ND
N-NITROSODIPHENYLAMINE	ND	ND	ND	ND	ND
PENTACHLOROPHENOL	ND	ND	ND	ND	ND
PHENANTHRENE	ND	ND	ND	ND	ND
PHENOL	ND	ND	ND	ND	ND
PYRENE	ND	ND	ND	ND	ND

Key:

Qualifiers

J = Estimated value

Other

ND = Standard is "non-detect"

µg/L = Micrograms per liter

-- = Analyte not analyzed for

"-FD" denotes field duplicate sample

Table A-6e Analytical Results for Volatiles in Groundwater Samples Collected from Eighteenmile Creek Operable Unit 2

Analyte / Sample ID: / Date:	OU2-MW05 12/18/2014	OU2-MW05 5/19/2015	OU2-MW09 12/18/2014	OU2-MW09 5/20/2015	OU2-MW14 12/18/2014	OU2-MW14 5/19/2015	OU2-MW15 12/19/2014	OU2-MW15 5/19/2015
Volatile Organic Compounds, µg/L								
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DIBROMO-3-CHLOROPROPANE	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DIOXANE (P-DIOXANE)	R	R	R	R	R	R	R	R
2-HEXANONE	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	ND	ND	ND	ND	ND	ND	ND	ND
BENZENE	ND	ND	ND	ND	ND	ND	ND	ND
BROMOCHLOROMETHANE	ND	ND	ND	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	ND	ND	ND	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHYLENE	5.2	16	ND	ND	11	17	0.23 J	ND
CIS-1,3-DICHLOROPROPENE	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	ND	ND	ND	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE (CUMENE)	ND	ND	ND	ND	ND	ND	ND	ND
M,P-XYLENE	ND	ND	ND	ND	ND	ND	ND	ND
METHYL ACETATE	ND	ND	ND	ND	ND	ND	ND	ND
METHYL ETHYL KETONE (2-BUTANONE)	ND	ND	ND	ND	ND	ND	ND	ND
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ND	ND	ND	ND	ND	ND	ND	ND
METHYLCYCLOHEXANE	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND	ND	ND	ND

Table A-6e Analytical Results for Volatiles in Groundwater Samples Collected from Eighteenmile Creek Operable Unit 2

Analyte / Sample ID: / Date:	OU2-MW16 12/18/2014	OU2-MW16-FD 12/18/2014	OU2-MW16 5/18/2015	OU2-MW16-FD 5/18/215	OU2-MW18 12/19/2014	OU2-MW18 5/20/2015	OU2-GW01-Z1 12/4/2014	OU2-GW01-Z1-FD 12/4/2014
Volatile Organic Compounds, µg/L								
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DIBROMO-3-CHLOROPROPANE	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DIOXANE (P-DIOXANE)	R	R	R	R	R	R	R	R
2-HEXANONE	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	ND	ND	ND	ND	ND	ND	ND	ND
BENZENE	ND	ND	ND	ND	ND	ND	ND	ND
BROMOCHLOROMETHANE	ND	ND	ND	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND	ND	ND	ND
CARBON DISULFIDE	ND	ND	ND	ND	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	3.3 J	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHYLENE	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,3-DICHLOROPROPENE	ND	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	ND	ND	ND	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE (CUMENE)	ND	ND	ND	ND	ND	ND	ND	ND
M,P-XYLENE	ND	ND	ND	ND	ND	ND	ND	ND
METHYL ACETATE	ND	ND	ND	ND	ND	ND	ND	ND
METHYL ETHYL KETONE (2-BUTANONE)	ND	ND	ND	ND	ND	ND	ND	ND
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ND	ND	ND	ND	ND	ND	ND	ND
METHYLCYCLOHEXANE	ND	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND	ND	ND	ND

Table A-6e Analytical Results for Volatiles in Groundwater Samples Collected from Eighteenmile Creek Operable Unit 2

Analyte / Sample ID: / Date:	OU2-MW05 12/18/2014	OU2-MW05 5/19/2015	OU2-MW09 12/18/2014	OU2-MW09 5/20/2015	OU2-MW14 12/18/2014	OU2-MW14 5/19/2015	OU2-MW15 12/19/2014	OU2-MW15 5/19/2015
O-XYLENE (1,2-DIMETHYLBENZENE)	ND	ND	ND	ND	ND	ND	ND	ND
STYRENE	ND	ND	ND	ND	ND	ND	ND	ND
TERT-BUTYL METHYL ETHER	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHYLENE(PCE)	ND	ND	ND	ND	1.5 J	2.8 J	ND	ND
TOLUENE	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,3-DICHLOROPROPENE	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHYLENE (TCE)	ND	ND	ND	ND	9.4	14	0.51 J	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND	ND	ND	ND

Table A-6e Analytical Results for Volatiles in Groundwater Samples Collected from Eighteenmile Creek Operable Unit 2

Analyte / Sample ID: / Date:	OU2-MW16 12/18/2014	OU2-MW16-FD 12/18/2014	OU2-MW16 5/18/2015	OU2-MW16-FD 5/18/215	OU2-MW18 12/19/2014	OU2-MW18 5/20/2015	OU2-GW01-Z1 12/4/2014	OU2-GW01-Z1-FD 12/4/2014
O-XYLENE (1,2-DIMETHYLBENZENE)	ND	ND	ND	ND	ND	ND	ND	ND
STYRENE	ND	ND	ND	ND	ND	ND	ND	ND
TERT-BUTYL METHYL ETHER	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHYLENE(PCE)	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,3-DICHLOROPROPENE	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHYLENE (TCE)	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND	ND	ND	ND

Key:

Qualifiers

J = Estimated value

Other

ND = Standard is "non-detect"

µg/L = Micrograms per liter

-- = Analyte not analyzed for

"-FD" denotes field duplicate sample

Table A-7a Analytical Results for PCB Aroclors in Sediment Samples Collected from the Creek Channel

Sample ID: / Date: / Analyte	OU2-SED01 5/26/2015	OU2-SED02 5/21/2015	OU2-SED03 5/26/2015	OU2-SED04 1/25/2016	OU2-SED04-FD 1/25/2016	OU2-SED05 1/26/2016	OU2-SED06 1/26/2016	OU2-SED07 1/26/2016	OU2-SED08 1/26/2016	OU2-SED09 1/26/2016
PCB Aroclors, mg/kg										
PCB-1016 (AROCLOR 1016)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1221 (AROCLOR 1221)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1232 (AROCLOR 1232)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1242 (AROCLOR 1242)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1248 (AROCLOR 1248)	5.5	0.46 J	56 J	ND	ND	ND	ND	0.096	0.83	0.063 J
PCB-1254 (AROCLOR 1254)	7.6	ND	25 J	ND	ND	ND	ND	ND	0.66	ND
PCB-1260 (AROCLOR 1260)	1.5 J	0.089	3.7 J	ND	ND	ND	ND	0.11	0.31	ND
PCB-1262 (AROCLOR 1262)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1268 (AROCLOR 1268)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Organic Carbon, mg/kg										
TOTAL ORGANIC CARBON	61000	96000	92000	76000	69000	110000	54000	65000	90000	61000

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

-- = Analyte not analyzed for

"-FD" denotes field duplicate sample

Table A-7b Analytical Results for TAL Metals in Sediment Samples Collected from the Creek Channel

Sample ID: / Date: / Analyte	OU2-SED01 5/26/2015	OU2-SED02 5/21/2015	OU2-SED03 5/26/2015	OU2-SED04 1/25/2016	OU2-SED04-FD 1/25/2016	OU2-SED05 1/26/2016	OU2-SED06 1/26/2016	OU2-SED07 1/26/2016	OU2-SED08 1/26/2016	OU2-SED09 1/26/2016
Metals, mg/kg										
ALUMINUM	8300 J	2700	8200 J	6470	6280	1690	9820	6990	10300	10600
ANTIMONY	1.4 J	0.69	3.5 J	ND	ND	ND	ND	18.9	5.6	15.3
ARSENIC	4.5 J	2.8	6 J	4.2	4.2	4.5	5.7	5.8	7	5.5
BARIUM	84 J	28	130 J	58.9	66.8	19.7	97	138	287	113
BERYLLIUM	0.45 J	0.17	0.41 J	0.38 J	0.38 J	0.15 J	0.47 J	0.39 J	0.52 J	0.56 J
CADMIUM	0.59 J	0.68	1.8 J	1	1.3	1.9	1.4	1.6	2.2	1.2
CALCIUM	31000 J	44000	27000 J	48100	50300	188000	40500	44100	29900	44100
CHROMIUM, HEXAVALENT	--	0.53 J	--	--	--	--	--	--	--	--
CHROMIUM, TOTAL	25 J	19	60 J	24.7	32.9	20	32.2	35.2	41	32.2
COBALT	7 J	3	8.1 J	6.6	6.5	2.5	9	6.7	8.8	9.9
COPPER	170 J	120	290 J	130	115	49.5	179	570	376	137
IRON	19000 J	9600	20000 J	15900	16500	17500	21900	24600	24700	26800
LEAD	310 J	370	560 J	194	256	58.7	333	792	399	715
MAGNESIUM	10000 J	14000	13000 J	15900	16200	82400	15600	13700	10500	15700
MANGANESE	490 J	290	410 J	362	428	789	393	407	384	691
MERCURY	0.74 J	0.32	1.1 J	0.48	0.37	0.062 J	0.91	6.2	1.9	1.3
NICKEL	22 J	12	38 J	19.1 J	34.1 J	8.9	33.8	25.7	32.7	32.6
POTASSIUM	1400 J	470	1300 J	909	899	368 J	1460	879	1350	1440
SELENIUM	0.9 J	0.37	1.1 J	ND	ND	ND	ND	ND	ND	ND
SILVER	0.65 J	0.8	2.4 J	1.1	1.1	ND	1.3	1.8	1.6	0.92
SODIUM	150 J	130	190 J	191 J	200 J	223 J	275 J	210 J	454 J	250 J
THALLIUM	0.18 J	ND	0.20 J	0.20 J	0.16 J	ND	0.17 J	0.15 J	0.18 J	0.18 J
VANADIUM	17 J	5.9	18 J	12.5	13.4	6.9	16.1	12.1	16.9	18.7
ZINC	250 J	170	730 J	262	281	434	410	586	766	333

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

-- = Analyte not analyzed for

"-FD" denotes field duplicate sample

Table A-7c Analytical Results for AVS/SEM in Sediment Samples Collected from the Creek Channel

Analyte	Sample ID: OU2-SED01 Date: 5/26/2015	OU2-SED02 5/21/2015	OU2-SED03 5/26/2015
AVS/SEM, µmol/g			
ACID VOLATILE SULFIDES	5.7	7.4	12
RATIO OF SEM/AVS	1.4	1.1	1.1 J
ARSENIC SEM	0.018 J	0.012	0.017 J
CADMIUM SEM	0.0063 J	0.014	0.011 J
CHROMIUM SEM	0.26 J	0.17	0.45 J
COPPER SEM	1.8 J	0.91	2.4 J
LEAD SEM	2.2 J	2.5	2.5 J
MERCURY SEM	0.000023 J	0.000012 J	ND
NICKEL SEM	0.22 J	0.16	0.37 J
SILVER SEM	0.0029 J	ND	0.0063 J
ZINC SEM	3.6 J	4.3	7.1 J

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

µmol/g = Micromole per gram

Table A-7d Analytical Results for Volatiles in Sediment Samples Collected from the Creek Channel

Analyte	Sample ID: OU2-SED01 Date: 5/26/2015	OU2-SED02 5/21/2015	OU2-SED03 5/26/2015
Volatile Organic Compounds, mg/kg			
1,1,1-TRICHLOROETHANE	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND
1,2,3-TRICHLOROBENZENE	ND	ND	ND
1,2,4-TRICHLOROBENZENE	ND	ND	ND
1,2-DIBROMO-3-CHLOROPROPANE	ND	ND	ND
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND
1,4-DIOXANE (P-DIOXANE)	ND	R	ND
2-HEXANONE	ND	ND	ND
ACETONE	ND	ND	ND
BENZENE	ND	ND	ND
BROMOCHLOROMETHANE	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND
BROMOFORM	ND	ND	ND
BROMOMETHANE	ND	ND	ND
CARBON DISULFIDE	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND
CHLOROBENZENE	ND	ND	ND
CHLOROETHANE	ND	ND	ND
CHLOROFORM	ND	ND	ND
CHLOROMETHANE	ND	ND	ND
CIS-1,2-DICHLOROETHYLENE	ND	ND	ND
CIS-1,3-DICHLOROPROPENE	ND	ND	ND
CYCLOHEXANE	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND
ETHYLBENZENE	ND	ND	ND
ISOPROPYLBENZENE (CUMENE)	ND	ND	ND
M,P-XYLENE	ND	ND	ND
METHYL ACETATE	ND	ND	ND
METHYL ETHYL KETONE (2-BUTANONE)	ND	ND	ND
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ND	ND	ND
METHYLCYCLOHEXANE	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND
O-XYLENE (1,2-DIMETHYLBENZENE)	ND	ND	ND
STYRENE	ND	ND	ND
TERT-BUTYL METHYL ETHER	ND	ND	ND
TETRACHLOROETHYLENE(PCE)	ND	ND	ND
TOLUENE	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	ND	ND	ND
TRANS-1,3-DICHLOROPROPENE	ND	ND	ND
TRICHLOROETHYLENE (TCE)	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND

Key:

Qualifiers

R = Rejected result

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

Table A-7e Analytical Results for Semi-volatiles in Sediment Samples Collected from the Creek Channel

Analyte / Sample ID: / Date:	OU2-SED01 5/26/2015	OU2-SED02 5/21/2015	OU2-SED03 5/26/2015	OU2-SED04 1/25/2016	OU2-SED04-FD 1/25/2016	OU2-SED05 1/26/2016	OU2-SED06 1/26/2016	OU2-SED07 1/26/2016
Semi-volatile Compounds, mg/kg								
1,2,4,5-TETRACHLOROBENZENE	ND	ND	ND	--	--	--	--	--
2,3,4,6-TETRACHLOROPHENOL	ND	ND	ND	--	--	--	--	--
2,4,5-TRICHLOROPHENOL	ND	ND	ND	--	--	--	--	--
2,4,6-TRICHLOROPHENOL	ND	ND	ND	--	--	--	--	--
2,4-DICHLOROPHENOL	ND	ND	ND	--	--	--	--	--
2,4-DIMETHYLPHENOL	ND	ND	ND	--	--	--	--	--
2,4-DINITROPHENOL	ND	ND	ND	--	--	--	--	--
2,4-DINITROTOLUENE	ND	ND	ND	--	--	--	--	--
2,6-DINITROTOLUENE	ND	ND	ND	--	--	--	--	--
2-CHLORONAPHTHALENE	ND	ND	ND	--	--	--	--	--
2-CHLOROPHENOL	ND	ND	ND	--	--	--	--	--
2-METHYLNAPHTHALENE	ND	0.47	0.098 J	ND	ND	ND	ND	ND
2-METHYLPHENOL (O-CRESOL)	ND	0.16 J	ND	--	--	--	--	--
2-NITROANILINE	ND	ND	ND	--	--	--	--	--
2-NITROPHENOL	ND	ND	ND	--	--	--	--	--
4-BROMOPHENYL PHENYL ETHER	ND	ND	ND	--	--	--	--	--
4-CHLOROPHENYL PHENYL ETHER	ND	ND	ND	--	--	--	--	--
ACENAPHTHENE	0.17 J	2.3	0.34 J	ND	ND	ND	ND	ND
ACENAPHTHYLENE	0.15 J	0.27	0.26 J	ND	ND	ND	ND	ND
ACETOPHENONE	ND	ND	ND	--	--	--	--	--
ANTHRACENE	0.65	4.1	0.68	0.079 J	ND	0.042 J	ND	ND
ATRAZINE	ND	ND	ND	--	--	--	--	--
BENZALDEHYDE	ND	ND	ND	--	--	--	--	--
BENZO(A)ANTHRACENE	2.6	9.1	3.2	0.33 J	0.12 J	0.16 J	0.15 J	0.17 J
BENZO(A)PYRENE	2.8	9.0	3.5	0.29 J	0.13 J	0.15 J	0.13 J	0.15 J
BENZO(B)FLUORANTHENE	3.7	12	4.6	0.41 J	0.18 J	0.22	0.15 J	0.20 J
BENZO(G,H,I)PERYLENE	2.6	4.6	3.3	0.18 J	0.097 J	0.12 J	ND	0.085 J
BENZO(K)FLUORANTHENE	1.3	5.2	1.7	0.13 J	ND	0.082 J	ND	0.066 J
BENZYL BUTYL PHTHALATE	0.40 J	ND	ND	--	--	--	--	--
BIPHENYL (DIPHENYL)	ND	ND	ND	--	--	--	--	--
BIS(2-CHLOROETHOXY) METHANE	ND	ND	ND	--	--	--	--	--
BIS(2-CHLOROETHYL) ETHER	ND	ND	ND	--	--	--	--	--
BIS(2-CHLOROISOPROPYL) ETHER	ND	ND	ND	--	--	--	--	--
BIS(2-ETHYLHEXYL) PHTHALATE	ND	1.1 J	1.9 J	--	--	--	--	--
CAPROLACTAM	ND	ND	ND	--	--	--	--	--
CARBAZOLE	0.39	2.3	0.69	--	--	--	--	--
CHRYSENE	3.2	9.0	3.7	0.35 J	0.15 J	0.19 J	0.13 J	0.15 J
DIBENZ(A,H)ANTHRACENE	0.66	1.3	0.57	ND	ND	ND	ND	ND
DIBENZOFURAN	ND	1.6	0.18 J	--	--	--	--	--
DIETHYL PHTHALATE	ND	ND	ND	--	--	--	--	--
DIMETHYL PHTHALATE	ND	ND	ND	--	--	--	--	--
DI-N-BUTYL PHTHALATE	ND	ND	ND	--	--	--	--	--

Table A-7e Analytical Results for Semi-volatiles in Sediment Samples Collected from the Creek Channel

Analyte	Sample ID: OU2-SED08 Date: 1/26/2016	OU2-SED09 1/26/2016
Semi-volatile Compounds, mg/kg		
1,2,4,5-TETRACHLOROBENZENE	--	--
2,3,4,6-TETRACHLOROPHENOL	--	--
2,4,5-TRICHLOROPHENOL	--	--
2,4,6-TRICHLOROPHENOL	--	--
2,4-DICHLOROPHENOL	--	--
2,4-DIMETHYLPHENOL	--	--
2,4-DINITROPHENOL	--	--
2,4-DINITROTOLUENE	--	--
2,6-DINITROTOLUENE	--	--
2-CHLORONAPHTHALENE	--	--
2-CHLOROPHENOL	--	--
2-METHYLNAPHTHALENE	ND	ND
2-METHYLPHENOL (O-CRESOL)	--	--
2-NITROANILINE	--	--
2-NITROPHENOL	--	--
4-BROMOPHENYL PHENYL ETHER	--	--
4-CHLOROPHENYL PHENYL ETHER	--	--
ACENAPHTHENE	ND	ND
ACENAPHTHYLENE	ND	ND
ACETOPHENONE	--	--
ANTHRACENE	ND	ND
ATRAZINE	--	--
BENZALDEHYDE	--	--
BENZO(A)ANTHRACENE	ND	ND
BENZO(A)PYRENE	ND	ND
BENZO(B)FLUORANTHENE	ND	ND
BENZO(G,H,I)PERYLENE	ND	ND
BENZO(K)FLUORANTHENE	ND	ND
BENZYL BUTYL PHTHALATE	--	--
BIPHENYL (DIPHENYL)	--	--
BIS(2-CHLOROETHOXY) METHANE	--	--
BIS(2-CHLOROETHYL) ETHER	--	--
BIS(2-CHLOROISOPROPYL) ETHER	--	--
BIS(2-ETHYLHEXYL) PHTHALATE	--	--
CAPROLACTAM	--	--
CARBAZOLE	--	--
CHRYSENE	ND	ND
DIBENZ(A,H)ANTHRACENE	ND	ND
DIBENZOFURAN	--	--
DIETHYL PHTHALATE	--	--
DIMETHYL PHTHALATE	--	--
DI-N-BUTYL PHTHALATE	--	--

Table A-7e Analytical Results for Semi-volatiles in Sediment Samples Collected from the Creek Channel

Analyte / Sample ID: / Date:	OU2-SED01 5/26/2015	OU2-SED02 5/21/2015	OU2-SED03 5/26/2015	OU2-SED04 1/25/2016	OU2-SED04-FD 1/25/2016	OU2-SED05 1/26/2016	OU2-SED06 1/26/2016	OU2-SED07 1/26/2016
DI-N-OCTYLPHTHALATE	ND	ND	ND	--	--	--	--	--
FLUORANTHENE	6.4	22	8.3	0.67	0.31 J	0.47	0.33 J	0.37
FLUORENE	0.23 J	3.2	0.41	ND	ND	ND	ND	ND
HEXACHLOROBENZENE	ND	ND	ND	--	--	--	--	--
HEXACHLOROBUTADIENE	ND	ND	ND	--	--	--	--	--
HEXACHLOROCYCLOPENTADIENE	ND	ND	ND	--	--	--	--	--
HEXACHLOROETHANE	ND	ND	ND	--	--	--	--	--
INDENO(1,2,3-C,D)PYRENE	2.2	4.6	2.7	0.16 J	0.081 J	0.096 J	ND	0.080 J
ISOPHORONE	ND	ND	ND	--	--	--	--	--
NAPHTHALENE	ND	0.65	ND	ND	ND	ND	ND	ND
NITROBENZENE	ND	ND	ND	--	--	--	--	--
N-NITROSODI-N-PROPYLAMINE	ND	ND	ND	--	--	--	--	--
N-NITROSODIPHENYLAMINE	ND	ND	ND	--	--	--	--	--
PENTACHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
PHENANTHRENE	2.9	17	3.8	0.32 J	0.12 J	0.26 J	0.11 J	0.25 J
PHENOL	0.27 J	0.55	ND	--	--	--	--	--
PYRENE	5.0	17	6.2	0.54	0.25 J	0.37	0.28 J	0.31 J

Table A-7e Analytical Results for Semi-volatiles in Sediment Samples Collected from the Creek Channel

Analyte	Sample ID: OU2-SED08 Date: 1/26/2016	OU2-SED09 1/26/2016
DI-N-OCTYLPHTHALATE	--	--
FLUORANTHENE	0.11 J	0.13 J
FLUORENE	ND	ND
HEXACHLOROBENZENE	--	--
HEXACHLOROBUTADIENE	--	--
HEXACHLOROCYCLOPENTADIENE	--	--
HEXACHLOROETHANE	--	--
INDENO(1,2,3-C,D)PYRENE	ND	ND
ISOPHORONE	--	--
NAPHTHALENE	ND	ND
NITROBENZENE	--	--
N-NITROSODI-N-PROPYLAMINE	--	--
N-NITROSODIPHENYLAMINE	--	--
PENTACHLOROPHENOL	ND	ND
PHENANTHRENE	0.088 J	ND
PHENOL	--	--
PYRENE	0.10 J	0.098 J

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

-- = Analyte not analyzed for

"-FD" denotes field duplicate sample

Table A-7f Analytical Results for Pesticides in Sediment Samples Collected from the Creek Channel

Analyte / Sample ID / Date	OU2-SED01 5/26/2015	OU2-SED02 5/21/2015	OU2-SED03 5/26/2015	OU2-SED04 1/25/2016	OU2-SED04-FD 1/25/2016	OU2-SED05 1/26/2016	OU2-SED06 1/26/2016	OU2-SED07 1/26/2016
Pesticides, mg/kg								
ALDRIN	ND	0.00012 J	ND	ND	ND	ND	ND	ND
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	0.00027 J+	ND	ND	ND	ND	ND	ND	ND
ALPHA ENDOSULFAN	0.0055 J+	0.0014	0.15	ND	ND	ND	ND	ND
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	0.068 J+	0.00049 J	2.0 J	ND	ND	ND	ND	ND
BETA ENDOSULFAN	0.0022 J+	0.00074 J	0.034 J	ND	ND	ND	ND	ND
CIS-CHLORDANE	0.0034 J+	ND	0.052 J	ND	ND	ND	ND	ND
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	0.021 J+	0.0031 J	0.64 J	ND	ND	ND	ND	ND
DIELDRIN	0.0036 J+	0.0013 J	0.11 J	ND	ND	ND	ND	ND
ENDOSULFAN SULFATE	0.0042 J+	0.00091 J	0.083 J	ND	ND	ND	ND	ND
ENDRIN	0.013 J+	0.0038 J	0.53 J	ND	ND	ND	ND	ND
ENDRIN ALDEHYDE	0.0022 J+	0.0005 J	0.091	ND	ND	ND	ND	ND
ENDRIN KETONE	0.012 J+	0.00057 J	0.065 J	ND	ND	ND	ND	ND
GAMMA BHC (LINDANE)	0.017 J+	0.0022 J	0.3 J	ND	ND	ND	ND	ND
HEPTACHLOR	0.014 J+	0.003 J	0.55 J	ND	ND	ND	ND	ND
HEPTACHLOR EPOXIDE	0.023 J+	0.0025 J	0.43 J	ND	ND	ND	ND	ND
METHOXYCHLOR	0.061 J+	0.0083 J	0.52 J	ND	ND	ND	ND	ND
P,P'-DDD	0.0042 J+	0.0033 J	0.085 J	ND	ND	ND	ND	ND
P,P'-DDE	0.0037 J+	0.0032 J	ND	ND	ND	ND	ND	ND
P,P'-DDT	0.028 J+	0.0089	1.3	ND	ND	ND	ND	ND
TOXAPHENE	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-CHLORDANE	0.021 J+	0.013 J	0.58	ND	ND	ND	ND	ND

Table A-7f Analytical Results for Pesticides in Sediment Samples Collected from the Creek Channel

Analyte	Sample ID: OU2-SED08 Date: 1/26/2016	OU2-SED09 1/26/2016
Pesticides, mg/kg		
ALDRIN	ND	ND
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	ND	ND
ALPHA ENDOSULFAN	ND	ND
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	ND	ND
BETA ENDOSULFAN	ND	ND
CIS-CHLORDANE	ND	ND
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	ND	ND
DIELDRIN	ND	ND
ENDOSULFAN SULFATE	ND	ND
ENDRIN	ND	ND
ENDRIN ALDEHYDE	ND	ND
ENDRIN KETONE	ND	ND
GAMMA BHC (LINDANE)	ND	ND
HEPTACHLOR	ND	ND
HEPTACHLOR EPOXIDE	ND	ND
METHOXYCHLOR	ND	ND
P,P'-DDD	ND	ND
P,P'-DDE	ND	ND
P,P'-DDT	ND	ND
TOXAPHENE	ND	ND
TRANS-CHLORDANE	ND	ND

Key:

Qualifiers

J = Estimated value

J+ = Estimated value with high bias

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

"-FD" denotes field duplicate sample

Table A-7g Analytical Results for PCB Congeners in Sediment Samples Collected from the Creek Channel

Analyte	Sample ID: OU2-SED02 Date: 5/21/2015
PCB Congeners, ng/kg	
DECACHLOROBIPHENYL (PCB 209)	870
DICHLOROBIPHENYL; 2,4'- (PCB 8)	19000
HEPTACHLOROBIPHENYL; 2,2',3,3',4,4',5- (PCB 170)	1500
HEPTACHLOROBIPHENYL; 2,2',3,4,4',5,5'- (PCB 180)	3100 J
HEPTACHLOROBIPHENYL; 2,2',3,4',5,5',6- (PCB 187)	2300
HEPTACHLOROBIPHENYL; 2,3,3',4,4',5,5'- (PCB 189)	44 EMPCJ
HEXACHLOROBIPHENYL; 2,2',3,3',4,4'- (PCB 128)	2100 J
HEXACHLOROBIPHENYL; 2,2',3,4,4',5'- (PCB 138)	13000 J
HEXACHLOROBIPHENYL; 2,2',4,4',5,5'- (PCB 153)	8300 J
HEXACHLOROBIPHENYL; 2,3,3',4,4',5- (PCB 156)	1300 J
HEXACHLOROBIPHENYL; 2,3,3',4,4',5'- (PCB 157)	1300 J
HEXACHLOROBIPHENYL; 2,3',4,4',5,5'- (PCB 167)	420
HEXACHLOROBIPHENYL; 3,3',4,4',5,5'- (PCB 169)	ND
NONACHLOROBIPHENYL; 2,2',3,3',4,4',5,5',6- (PCB 206)	1300
OCTACHLOROBIPHENYL; 2,2',3,3',4,4',5,6- (PCB 195)	200 J
PENTACHLOROBIPHENYL; 2,2',4,5,5'- (PCB 101)	16000 J
PENTACHLOROBIPHENYL; 2,3,3',4,4'- (PCB 105)	5300
PENTACHLOROBIPHENYL; 2,3,4,4',5- (PCB 114)	380 EMPCJ
PENTACHLOROBIPHENYL; 2,3',4,4',5- (PCB 118)	13000
PENTACHLOROBIPHENYL; 2',3,4,4',5- (PCB 123)	150 EMPCJ
PENTACHLOROBIPHENYL; 3,3',4,4',5- (PCB 126)	ND
TETRACHLOROBIPHENYL; 2,2',3,5'- (PCB 44)	51000 J
TETRACHLOROBIPHENYL; 2,2',5,5'- (PCB 52)	57000
TETRACHLOROBIPHENYL; 2,3',4,4'- (PCB 66)	15000
TETRACHLOROBIPHENYL; 3,3',4,4'- (PCB 77)	1200
TETRACHLOROBIPHENYL; 3,4,4',5- (PCB 81)	50 EMPCJ
TRICHLOROBIPHENYL; 2,2',5- (PCB 18)	25000 J
TRICHLOROBIPHENYL; 2,4,4'- (PCB 28)	35000 J

Key:

Qualifiers

J = Estimated value

EMPC = Estimated Maximum Possible Concentration

Other

ND = Sample is "non-detect"

ng/kg = Nanograms per kilogram

Table A-7h Analytical Results for Dioxins/Furans in Sediment Samples Collected from the Creek Channel

Analyte	Sample ID: OU2-SED02 Date: 5/21/2015
Dioxins/Furans, ng/kg	
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	180
1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN	340
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	6.9
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	41 EMPCJ
1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN	4.2 J
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	15
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	15
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	0.45 EMPCJ
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	9.3 J
1,2,3,7,8-PENTACHLORODIBENZOFURAN	4.2 J
1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN	2.4 EMPCJ
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	4.7 J
2,3,4,7,8-PENTACHLORODIBENZOFURAN	8
2,3,7,8-TETRACHLORODIBENZOFURAN	4.4
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	2.2 EMPCJ
OCTACHLORODIBENZOFURAN	220
OCTACHLORODIBENZO-P-DIOXIN	4100 J

Key:

Qualifiers

J = Estimated value

EMPC = Estimated Maximum Possible Concentration

Other

ND = Sample is "non-detect"

ng/kg = Nanograms per kilogram

Table A-8a Analytical Results for PCB Congeners in Surface Water Samples Collected from the Creek Channel and Background Location

Analyte	Sample ID: OU2-SW01 Date: 5/20/2015	OU2-SW02 5/21/2015	OU2-SW03 5/26/2015	BG1-SW01 5/21/2015
PCB Congeners, ng/L				
DECACHLOROBIPHENYL (PCB 209)	0.011 EMPCJ	0.013 J	0.013 EMPCJ	0.0063 EMPCJ
DICHLOROBIPHENYL; 2,4'- (PCB 8)	0.16	0.051 EMPCJ	0.063 EMPCJ	0.017 EMPCJ
HEPTACHLOROBIPHENYL; 2,2',3,3',4,4',5- (PCB 170)	0.009 EMPCJ	0.0098 J	0.01 EMPCJ	0.0049 J
HEPTACHLOROBIPHENYL; 2,2',3,4,4',5,5'- (PCB 180)	0.02 EMPCJ	0.023 J	0.025 EMPCJ	0.011 EMPCJ
HEPTACHLOROBIPHENYL; 2,2',3,4',5,5',6- (PCB 187)	0.018 J	0.013 J	0.016 J	0.0057 EMPCJ
HEPTACHLOROBIPHENYL; 2,3,3',4,4',5,5'- (PCB 189)	ND	ND	ND	ND
HEXACHLOROBIPHENYL; 2,2',3,3',4,4'- (PCB 128)	0.011 J	0.0081 J	0.01 EMPCJ	0.0038 EMPCJ
HEXACHLOROBIPHENYL; 2,2',3,4,4',5'- (PCB 138)	0.086 J	0.063 J	0.085 J	0.033 J
HEXACHLOROBIPHENYL; 2,2',4,4',5,5'- (PCB 153)	0.052 EMPCJ	0.044 J	0.052 EMPCJ	0.026 J
HEXACHLOROBIPHENYL; 2,3,3',4,4',5- (PCB 156)	0.0056 EMPCJ	0.005 EMPCJ	0.0077 J	0.0033 EMPCJ
HEXACHLOROBIPHENYL; 2,3,3',4,4',5'- (PCB 157)	0.0056 EMPCJ	0.005 EMPCJ	0.0077 J	0.0033 EMPCJ
HEXACHLOROBIPHENYL; 2,3',4,4',5,5'- (PCB 167)	0.0021 J	0.0021 J	0.002 EMPCJ	ND
HEXACHLOROBIPHENYL; 3,3',4,4',5,5'- (PCB 169)	ND	ND	ND	ND
NONACHLOROBIPHENYL; 2,2',3,3',4,4',5,5',6- (PCB 206)	0.016 J	0.014 J	0.019 J	0.0062 J
OCTACHLOROBIPHENYL; 2,2',3,3',4,4',5,6- (PCB 195)	0.002 EMPCJ	ND	0.0017 EMPCJ	ND
PENTACHLOROBIPHENYL; 2,2',4,5,5'- (PCB 101)	0.17 J	0.074 J	0.12 J	0.041 J
PENTACHLOROBIPHENYL; 2,3,3',4,4'- (PCB 105)	0.05	0.023 EMPCJ	0.048	0.014 EMPCJ
PENTACHLOROBIPHENYL; 2,3,4,4',5- (PCB 114)	0.0029 EMPCJ	ND	0.0037 J	ND
PENTACHLOROBIPHENYL; 2,3',4,4',5- (PCB 118)	0.13	0.066	0.11	0.037 J
PENTACHLOROBIPHENYL; 2',3,4,4',5- (PCB 123)	0.0019 EMPCJ	0.001 EMPCJ	0.0028 EMPCJ	0.0016 EMPCJ
PENTACHLOROBIPHENYL; 3,3',4,4',5- (PCB 126)	ND	ND	ND	ND
TETRACHLOROBIPHENYL; 2,2',3,5'- (PCB 44)	0.62 J	0.2 J	0.41 J	0.11 J
TETRACHLOROBIPHENYL; 2,2',5,5'- (PCB 52)	0.7	0.24	0.48	0.12
TETRACHLOROBIPHENYL; 2,3',4,4'- (PCB 66)	0.19	0.077	0.16	0.056
TETRACHLOROBIPHENYL; 3,3',4,4'- (PCB 77)	0.012 J	0.005 J	0.008 EMPCJ	0.0032 EMPCJ

Table A-8a Analytical Results for PCB Congeners in Surface Water Samples Collected from the Creek Channel and Background Location

Analyte	Sample ID: / Date:	OU2-SW01 5/20/2015	OU2-SW02 5/21/2015	OU2-SW03 5/26/2015	BG1-SW01 5/21/2015
TETRACHLOROBIPHENYL; 3,4,4',5- (PCB 81)		ND	ND	ND	ND
TRICHLOROBIPHENYL; 2,2',5- (PCB 18)		0.43 J	0.13 J	0.21 J	0.053 J
TRICHLOROBIPHENYL; 2,4,4'- (PCB 28)		0.35 J	0.14 J	0.23 J	0.072 J

Key:

Qualifiers

J = Estimated value

EMPC = Estimated Maximum Possible Concentration

Other

ND = Sample is "non-detect"

ng/L = Nanograms per liter

Table A-8b Analytical Results for TAL Metals in Surface Water Samples Collected from the Creek Channel and Background Location

Sample ID: / Date: / Analyte	OU2-SW01 5/20/2015	OU2-SW02 5/21/2015	OU2-SW03 5/26/2015	BG1-SW01 5/21/2015
Metals, µg/L				
ALUMINUM	150 J	120	110	120
ANTIMONY	ND	ND	ND	ND
ARSENIC	ND	ND	0.36 J	ND
BARIUM	27	34	29	33
BERYLLIUM	ND	ND	ND	ND
CADMIUM	ND	ND	ND	0.11 J
CALCIUM	54000	73000	65000	66000
CHROMIUM, TOTAL	1 J	1.1 J	1.5 J	0.91 J
COBALT	0.3 J	0.34 J	0.38 J	0.31 J
COPPER	2.1	2.5	2.2	1.9 J
IRON	290	340	340	280
LEAD	1.9	2.4	1.5	0.76 J
MAGNESIUM	10000	12000	10000	12000
MANGANESE	44	50	48	60
MERCURY	ND	ND	ND	ND
NICKEL	1.4	1.4	1.6	1.4
POTASSIUM	2100	2400	2100	2400
SELENIUM	ND	ND	ND	ND
SILVER	ND	ND	ND	ND
SODIUM	26000	35000	26000	32000
THALLIUM	0.22 J	ND	0.091 J	ND
VANADIUM	ND	1.3	0.41 J	ND
ZINC	7.9	7.1 J	8	6.3

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

µg/L = Micrograms per liter

Table A-8c Analytical Results for Volatiles in Surface Water Samples Collected from the Creek Channel and Background Location

Analyte	Sample ID: OU2-SW01 Date: 5/20/2015	OU2-SW02 5/21/2015	OU2-SW03 5/26/2015	BG1-SW01 5/21/2015
Volatile Organic Compounds, µg/L				
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	ND	ND	ND	ND
1,2-DIBROMO-3-CHLOROPROPANE	ND	ND	ND	ND
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND
1,4-DIOXANE (P-DIOXANE)	R	R	ND	R
2-HEXANONE	ND	ND	ND	ND
ACETONE	ND	ND	ND	ND
BENZENE	ND	ND	ND	ND
BROMOCHLOROMETHANE	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND
CARBON DISULFIDE	ND	ND	ND	ND
CARBON TETRACHLORIDE	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND
CHLOROETHANE	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND

Table A-8c Analytical Results for Volatiles in Surface Water Samples Collected from the Creek Channel and Background Location

Analyte	Sample ID: OU2-SW01 Date: 5/20/2015	OU2-SW02 5/21/2015	OU2-SW03 5/26/2015	BG1-SW01 5/21/2015
CHLOROMETHANE	ND	ND	ND	ND
CIS-1,2-DICHLOROETHYLENE	ND	ND	ND	ND
CIS-1,3-DICHLOROPROPENE	ND	ND	ND	ND
CYCLOHEXANE	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND
ISOPROPYLBENZENE (CUMENE)	ND	ND	ND	ND
M,P-XYLENE	ND	ND	ND	ND
METHYL ACETATE	ND	ND	ND	ND
METHYL ETHYL KETONE (2-BUTANONE)	ND	ND	ND	ND
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ND	ND	ND	ND
METHYLCYCLOHEXANE	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND
O-XYLENE (1,2-DIMETHYLBENZENE)	ND	ND	ND	ND
STYRENE	ND	ND	ND	ND
TERT-BUTYL METHYL ETHER	ND	ND	ND	ND
TETRACHLOROETHYLENE(PCE)	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	ND	ND	ND	ND
TRANS-1,3-DICHLOROPROPENE	ND	ND	ND	ND
TRICHLOROETHYLENE (TCE)	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND

Key:

Qualifiers

R = Rejected Result

Other

ND = Sample is "non-detect"

µg/L = Micrograms per liter

-- = Analyte not analyzed for

Table A-8d Analytical Results for Semi-volatiles in Surface Water Samples Collected from the Creek Channel and Background Location

Analyte / Sample ID: / Date:	OU2-SW01 5/20/2015	OU2-SW02 5/21/2015	OU2-SW03 5/26/2015	BG1-SW01 5/21/2015
Semi-volatile Compounds, µg/L				
1,2,4,5-TETRACHLOROBENZENE	ND	ND	ND	ND
2,3,4,6-TETRACHLOROPHENOL	ND	ND	ND	ND
2,4,5-TRICHLOROPHENOL	ND	ND	ND	ND
2,4,6-TRICHLOROPHENOL	ND	ND	ND	ND
2,4-DICHLOROPHENOL	ND	ND	ND	ND
2,4-DIMETHYLPHENOL	ND	ND	ND	ND
2,4-DINITROPHENOL	ND	ND	ND	ND
2,4-DINITROTOLUENE	ND	ND	ND	ND
2,6-DINITROTOLUENE	ND	ND	ND	ND
2-CHLORONAPHTHALENE	ND	ND	ND	ND
2-CHLOROPHENOL	ND	ND	ND	ND
2-METHYLNAPHTHALENE	ND	ND	ND	ND
2-METHYLPHENOL (O-CRESOL)	ND	ND	ND	ND
2-NITROANILINE	ND	ND	ND	ND
2-NITROPHENOL	ND	ND	ND	ND
4-BROMOPHENYL PHENYL ETHER	ND	ND	ND	ND
4-CHLOROPHENYL PHENYL ETHER	ND	ND	ND	ND
ACENAPHTHENE	ND	ND	ND	ND
ACENAPHTHYLENE	ND	ND	ND	ND
ACETOPHENONE	ND	ND	ND	ND
ANTHRACENE	ND	ND	ND	ND
ATRAZINE	ND	ND	ND	ND
BENZALDEHYDE	ND	ND	ND	ND
BENZO(A)ANTHRACENE	ND	ND	ND	ND
BENZO(A)PYRENE	ND	ND	ND	ND
BENZO(B)FLUORANTHENE	ND	ND	ND	ND
BENZO(G,H,I)PERYLENE	ND	ND	ND	ND

Table A-8d Analytical Results for Semi-volatiles in Surface Water Samples Collected from the Creek Channel and Background Location

Analyte / Sample ID: / Date:	OU2-SW01 5/20/2015	OU2-SW02 5/21/2015	OU2-SW03 5/26/2015	BG1-SW01 5/21/2015
BENZO(K)FLUORANTHENE	ND	ND	ND	ND
BENZYL BUTYL PHTHALATE	ND	0.52 J	0.14 J	0.49 J
BIPHENYL (DIPHENYL)	ND	ND	ND	ND
BIS(2-CHLOROETHOXY) METHANE	ND	ND	ND	ND
BIS(2-CHLOROETHYL) ETHER	ND	ND	ND	ND
BIS(2-CHLOROISOPROPYL) ETHER	ND	ND	ND	ND
BIS(2-ETHYLHEXYL) PHTHALATE	2.5	120	1.4 J	2.5
CAPROLACTAM	ND	ND	ND	ND
CARBAZOLE	ND	ND	ND	ND
CHRYSENE	ND	ND	ND	ND
DIBENZ(A,H)ANTHRACENE	ND	ND	ND	ND
DIBENZOFURAN	ND	ND	ND	ND
DIETHYL PHTHALATE	ND	ND	ND	ND
DIMETHYL PHTHALATE	ND	ND	ND	ND
DI-N-BUTYL PHTHALATE	ND	ND	ND	ND
DI-N-OCTYLPHTHALATE	ND	ND	ND	ND
FLUORANTHENE	ND	ND	ND	ND
FLUORENE	ND	ND	ND	ND
HEXACHLOROBENZENE	ND	ND	ND	ND
HEXACHLOROBUTADIENE	ND	ND	ND	ND
HEXACHLOROCYCLOPENTADIENE	ND	ND	ND	ND
HEXACHLOROETHANE	ND	ND	ND	ND
INDENO(1,2,3-C,D)PYRENE	ND	ND	ND	ND
ISOPHORONE	ND	ND	ND	ND
NAPHTHALENE	ND	ND	ND	ND
NITROBENZENE	ND	ND	ND	ND
N-NITROSODI-N-PROPYLAMINE	ND	ND	ND	ND
N-NITROSODIPHENYLAMINE	ND	ND	ND	ND

Table A-8d Analytical Results for Semi-volatiles in Surface Water Samples Collected from the Creek Channel and Background Location

Analyte	Sample ID: OU2-SW01 Date: 5/20/2015	OU2-SW02 5/21/2015	OU2-SW03 5/26/2015	BG1-SW01 5/21/2015
PENTACHLOROPHENOL	ND	ND	ND	ND
PHENANTHRENE	ND	ND	ND	ND
PHENOL	ND	ND	ND	ND
PYRENE	ND	ND	ND	ND

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

µg/L = Micrograms per liter

Table A-8e Analytical Results for Pesticides in Surface Water Samples Collected from the Creek Channel and Background Location

Sample ID: / Date: / Analyte	OU2-SW01 5/20/2015	OU2-SW02 5/21/2015	OU2-SW03 5/26/2015	BG1-SW01 5/21/2015
Pesticides, µg/L				
ALDRIN	ND	ND	ND	ND
ALPHA BHC (ALPHA	0.00099 J	ND	0.0012	ND
ALPHA ENDOSULFAN	ND	ND	ND	ND
BETA BHC (BETA	ND	ND	ND	ND
BETA ENDOSULFAN	0.0017 J	0.0012 J	0.0015	0.0012
CIS-CHLORDANE	ND	ND	ND	ND
DELTA BHC (DELTA	ND	0.00036 J	ND	ND
DIELDRIN	ND	ND	ND	ND
ENDOSULFAN SULFATE	ND	ND	ND	ND
ENDRIN	ND	ND	ND	ND
ENDRIN ALDEHYDE	ND	ND	ND	ND
ENDRIN KETONE	ND	ND	ND	ND
GAMMA BHC (LINDANE)	ND	ND	ND	ND
HEPTACHLOR	ND	ND	ND	ND
HEPTACHLOR EPOXIDE	ND	ND	ND	ND
METHOXYCHLOR	ND	ND	ND	ND
P,P'-DDD	ND	ND	ND	ND
P,P'-DDE	ND	ND	ND	ND
P,P'-DDT	ND	ND	ND	ND
TOXAPHENE	ND	ND	ND	ND
TRANS-CHLORDANE	0.0027	ND	0.0022	ND

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

µg/L = Micrograms per liter

Table A-9a Toxicity Results for *Chironomus dilutus* in Sediment Collected from the Creek Channel and Background Location

Sample	Location	Replicate[a]								Average
		1	2	3	4	5	6	7	8	
Growth (mg AFDW / surviving organism)[b]										
BG1-SED01	Reference Area[c]	1.6320	1.6150	1.4209	1.2217	1.3520	1.5727	1.3360	1.2318	1.4228
OU2-SED01	Site (OU2)	1.4873	1.5073	1.2475	1.4175	1.3527	1.1825	1.5022	1.3411	1.3798
OU2-SED02	Site (OU2)	2.0318	1.5600	1.8617	1.6683	1.9800	1.5964	2.1311	1.8989	1.8410
OU2-SED03	Site (OU2)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Survival (%)[b]										
BG1-SED01	Reference Area[c]	83%	83%	92%	100%	83%	92%	83%	92%	89%
OU2-SED01	Site (OU2)	92%	92%	100%	100%	92%	100%	75%	75%	91%
OU2-SED02	Site (OU2)	92%	100%	100%	100%	100%	100%	75%	83%	94%
OU2-SED03	Site (OU2)	0%	0%	0%	0%	0%	0%	0%	0%	0%

Key:
AFWD = Ash free dry weight
OU2 = Operable Unit 2

Notes:
a. Eight replicates with 12 test organisms per replicate at start of test.
b. Results from USEPA (2000) Method 100.5 (20-day growth and survival test with *Chironomus dilutus*).
c. East branch of Eighteenmile Creek at Gasport, NY (1500 feet north of New York State barge canal).
d. Growth could not be determined because survival was 0% in all replicates.

Table A-9b Toxicity Results for *Hyalella azteca* in Sediment Collected from the Creek Channel and Background Location

Sample	Location	Replicate[a]								Average
		1	2	3	4	5	6	7	8	
Growth (mg dry weight / surviving organism)[b]										
BG1-SED01	Reference Area[c]	0.3680	0.4350	0.3911	0.4311	0.4510	0.3730	0.2850	0.3660	0.3875
OU2-SED01	Site (OU2)	0.5400	0.3870	0.5714	0.4567	0.4856	0.5600	0.4490	0.4630	0.4891
OU2-SED02	Site (OU2)	0.4930	0.4780	0.5470	0.5700	0.4880	0.5100	0.7000	0.5400	0.5408
OU2-SED03	Site (OU2)	0.1820	0.2575	0.1683	0.2367	0.2433	0.2833	0.1967	0.1840	0.2190
Survival (%)[b]										
BG1-SED01	Reference Area[c]	100%	100%	90%	90%	100%	100%	100%	100%	98%
OU2-SED01	Site (OU2)	100%	100%	70%	90%	90%	100%	100%	100%	94%
OU2-SED02	Site (OU2)	100%	100%	100%	100%	100%	100%	100%	100%	100%
OU2-SED03	Site (OU2)	50%	80%	60%	60%	90%	60%	60%	50%	64%

Key:
OU2 = Operable Unit 2

Notes:
a. Eight replicates with 10 organisms per replicate at start of test.
b. Results from USEPA (2000) Method 100.4 (28-day growth and survival test with *Hyalella azteca*).
c. East branch of Eighteenmile Creek at Gasport, NY (1500 feet north of New York State barge canal).

Table A-9c Toxicity Results for Fathead Minnow in Surface Water Collected from the Creek Channel and Background Location

Sample	Location	Replicate[a]				Average
		1	2	3	4	
Growth (mg/fish dry weight)[b]						
BG1-SW01	Reference Area[c]	0.5140	0.5956	0.5060	0.5170	0.5332
OU2-SW01	Site (OU2)	0.5350	0.5590	0.5720	0.5989	0.5662
OU2-SW02	Site (OU2)	0.5380	0.6044	0.6550	0.6900	0.6219
OU2-SW03	Site (OU2)	0.5560	0.5130	0.5060	0.5230	0.5245
Survival (%)[b]						
BG1-SW01	Reference Area[c]	100%	90%	100%	100%	98%
OU2-SW01	Site (OU2)	100%	100%	90%	90%	95%
OU2-SW02	Site (OU2)	100%	90%	100%	90%	95%
OU2-SW03	Site (OU2)	100%	100%	100%	100%	100%

Key:
OU2 = Operable Unit 2

Notes:
a. Four replicates with 10 fish (fathead minnow larvae) per replicate.
b. Results from USEPA (2002) Method 1000.0 (Fathead Minnow Larval Survival and Growth Test).
c. East branch of Eighteenmile Creek at Gasport, NY (1500 feet north of New York State barge canal).

Table A-9d Toxicity Results for *Ceriodaphnia dubia* in Surface Water Collected from the Creek Channel and Background Location

Sample	Location	Replicate[a]										Average
		1	2	3	4	5	6	7	8	9	10	
Reproduction (young/female)[b]												
BG1-SW01	Reference Area[c]	24	21	21	22	16	19	24	19	19	18	20.3
OU2-SW01	Site (OU2)	18	20	31	24	23	--[d]	22	26	20	18	22.4
OU2-SW02	Site (OU2)	20	24	25	29	25	25	27	21	20	18	23.4
OU2-SW03	Site (OU2)	21	22	18	24	25	21	0[e]	25	24	24	22.7
Survival (%)[b]												
BG1-SW01	Reference Area[c]	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OU2-SW01	Site (OU2)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OU2-SW02	Site (OU2)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OU2-SW03	Site (OU2)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Key:

-- (dash) = not applicable

OU2 = Operable Unit 2

Notes:

a. Ten replicates with 1 neonate per replicate at start of test.

b. Results from USEPA (2002) Method 1002.0 (*Ceriodaphnia dubia* Survival and Reproduction test).

c. East branch of Eighteenmile Creek at Gasport, NY (1500 feet north of New York State barge canal).

d. Male

e. Outlier

Table A-10a Analytical Results for PCB Aroclors and TOC in Sediment Samples Collected from the Background Location

Analyte	Sample ID: BG1-SED01 Date: 5/21/2015	BG1-SED02 5/22/2015	BG1-SED03 5/22/2015	BG1-SED04 5/22/2015	BG1-SED05 5/22/2015	BG1-SED06 5/22/2015	BG1-SED07 5/22/2015
PCB Aroclors, mg/kg							
PCB-1016 (AROCLOR	ND	ND	ND	ND	ND	ND	ND
PCB-1221 (AROCLOR	ND	ND	ND	ND	ND	ND	ND
PCB-1232 (AROCLOR	ND	ND	ND	ND	ND	ND	ND
PCB-1242 (AROCLOR	ND	ND	ND	ND	ND	ND	ND
PCB-1248 (AROCLOR	0.027 J	0.026 J	0.029 J	0.23 J	0.044 J+	ND	0.010 J
PCB-1254 (AROCLOR	ND	0.021 J	0.020 J	0.11 J	0.036 J+	ND	0.0077 J
PCB-1260 (AROCLOR	0.0096	ND	ND	ND	ND	ND	ND
PCB-1262 (AROCLOR	ND	ND	ND	ND	ND	ND	ND
PCB-1268 (AROCLOR	ND	ND	0.0014 J	0.0049 J	0.0083 J+	ND	ND
Total Organic Carbon, mg/kg							
TOTAL ORGANIC	65000	90000	48000	59000	54000	44000	45000

Key:

Qualifiers

J = Estimated value

J+ = Estimated value with high bias

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

Table A-10b Analytical Results for TAL Metals in Sediment Samples Collected from the Background Location

Analyte	Sample ID: BG1-SED01 Date: 5/21/2015	BG1-SED02 5/22/2015	BG1-SED03 5/22/2015	BG1-SED04 5/22/2015	BG1-SED05 5/22/2015	BG1-SED06 5/22/2015	BG1-SED07 5/22/2015
Metals, mg/kg							
ALUMINUM	7300	5800 J	7100 J	7100 J	9500 J	9500	13000 J
ANTIMONY	ND	ND	ND	1.2 J	0.19 J	ND	ND
ARSENIC	4.3	4.1 J	3.9 J	6.3 J	6.7 J	3.1	5.1 J
BARIUM	61	51 J	54 J	62 J	72 J	70	110 J
BERYLLIUM	0.42	0.31 J	0.37 J	0.38 J	0.46 J	0.53	0.59 J
CADMIUM	1.5	1.2 J	0.77 J	1.6 J	1.9 J	0.84	0.53 J
CALCIUM	20000	16000 J	17000 J	23000 J	24000 J	17000	21000 J
CHROMIUM, HEXAVALENT	ND	--	--	--	--	--	--
CHROMIUM, TOTAL	17	14 J	16 J	42 J	41 J	13	20 J
COBALT	8.1	7.5 J	7.6 J	10 J	11 J	9.6	10 J
COPPER	41	40 J	43 J	86 J	140 J	24	33 J
IRON	16000	14000 J	16000 J	22000 J	19000 J	17000	23000 J
LEAD	30	27 J	25 J	54 J	92 J	27	28 J
MAGNESIUM	8000	6400 J	7200 J	10000 J	11000 J	8300	9500 J
MANGANESE	420	410 J	570 J	430 J	330 J	710	1300 J
MERCURY	0.14	1.6 J	0.12 J	0.33 J	0.31 J	0.058	0.086 J
NICKEL	19	16 J	18 J	35 J	32 J	17	25 J
POTASSIUM	1500	1200 J	1300 J	1200 J	1400 J	1300	2000 J
SELENIUM	1	0.95 J	0.97 J	1.2 J	1.3 J	0.96	1.3 J
SILVER	0.20	0.14 J	0.18 J	0.33 J	0.51 J	0.12	0.21 J
SODIUM	170	170 J	140 J	150 J	130 J	120	200 J
THALLIUM	0.24	0.20 J	0.18 J	0.31 J	0.47 J	0.13	0.20 J
VANADIUM	15	12 J	16 J	15 J	19 J	19	23 J
ZINC	210	200 J	180 J	440 J	740 J	110	210 J

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

-- = Analyte not analyzed for

Table A-10c Analytical Results for AVS/SEM in Sediment Samples Collected from the Background Location

Analyte	Sample ID: BG1-SED01 Date: 5/21/2015
AVS/SEM, µmol/g	
Acid Volatile Sulfides (AVS)	15
RATIO OF SEM/AVS	0.25
Arsenic SEM	0.011
Cadmium SEM	0.017
Chromium SEM	0.086
Copper SEM	0.25
Lead SEM	0.14
Mercury SEM	ND
Nickel SEM	0.13
Silver SEM	ND
Zinc SEM	3

Key:

Other

ND = Sample is "non-detect"

µmol/g = Micromole per gram

Table A-10d Analytical Results for Volatiles in Sediment Samples Collected from the Background Location

Analyte	Sample ID: BG1-SED01 Date: 5/21/2015	BG1-SED02 5/22/2015	BG1-SED03 5/22/2015	BG1-SED04 5/22/2015	BG1-SED05 5/22/2015	BG1-SED06 5/22/2015	BG1-SED07 5/22/2015
Volatile Organic Compounds, mg/kg							
1,1,1-TRICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ND	ND	ND	ND	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND
1,1-DICHLOROETHENE	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND
1,2-DIBROMO-3-CHLOROPROPANE	ND	ND	ND	ND	ND	ND	ND
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROPROPANE	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND
1,4-DIOXANE (P-DIOXANE)	R	ND	ND	ND	ND	ND	ND
2-HEXANONE	ND	ND	ND	ND	ND	ND	ND
ACETONE	ND	0.054 J	ND	ND	ND	0.013 J	ND
BENZENE	ND	ND	ND	ND	ND	ND	ND
BROMOCHLOROMETHANE	ND	ND	ND	ND	ND	ND	ND
BROMODICHLOROMETHANE	ND	ND	ND	ND	ND	ND	ND
BROMOFORM	ND	ND	ND	ND	ND	ND	ND
BROMOMETHANE	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND
CHLOROFORM	ND	ND	ND	ND	ND	ND	ND
CHLOROMETHANE	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHYLENE	ND	ND	ND	ND	ND	ND	ND
CIS-1,3-DICHLOROPROPENE	ND	ND	ND	ND	ND	ND	ND
CYCLOHEXANE	ND	ND	ND	ND	ND	ND	ND
DIBROMOCHLOROMETHANE	ND	ND	ND	ND	ND	ND	ND
DICHLORODIFLUOROMETHANE	ND	ND	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND	ND	ND
ISOPROPYLBENZENE (CUMENE)	ND	ND	ND	ND	ND	ND	ND
M,P-XYLENE	ND	ND	ND	ND	ND	ND	ND
METHYL ACETATE	ND	ND	ND	ND	ND	ND	ND
METHYL ETHYL KETONE (2-BUTANONE)	ND	ND	ND	ND	ND	ND	ND
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ND	ND	ND	ND	ND	ND	ND
METHYLCYCLOHEXANE	ND	ND	ND	ND	ND	ND	ND
METHYLENE CHLORIDE	ND	ND	ND	ND	ND	ND	ND
O-XYLENE (1,2-DIMETHYLBENZENE)	ND	ND	ND	ND	ND	ND	ND

Table A-10d Analytical Results for Volatiles in Sediment Samples Collected from the Background Location

Analyte / Sample ID: / Date:	BG1-SED01 5/21/2015	BG1-SED02 5/22/2015	BG1-SED03 5/22/2015	BG1-SED04 5/22/2015	BG1-SED05 5/22/2015	BG1-SED06 5/22/2015	BG1-SED07 5/22/2015
STYRENE	ND	ND	ND	ND	ND	ND	ND
TERT-BUTYL METHYL ETHER	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHYLENE(PCE)	ND	ND	ND	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	ND	ND	ND	ND	ND	ND	ND
TRANS-1,3-DICHLOROPROPENE	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHYLENE (TCE)	ND	ND	ND	ND	ND	ND	ND
TRICHLOROFLUOROMETHANE	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND	ND	ND	ND	ND

Key:

Qualifiers

J = Estimated value

R= Rejected result

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

Table A-10e Analytical Results for Semi-volatiles in Sediment Samples Collected from the Background Location

Analyte	Sample ID: BG1-SED01 Date: 5/21/2015	BG1-SED02 5/22/2015	BG1-SED03 5/22/2015	BG1-SED04 5/22/2015	BG1-SED05 5/22/2015	BG1-SED06 5/22/2015	BG1-SED07 5/22/2015
Semi-volatile Compounds, mg/kg							
1,2,4,5-TETRACHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND
2,3,4,6-TETRACHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND
2,4,5-TRICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND
2,4,6-TRICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND
2,4-DICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND
2,4-DIMETHYLPHENOL	ND	ND	ND	ND	ND	ND	ND
2,4-DINITROPHENOL	ND	ND	ND	ND	ND	ND	ND
2,4-DINITROTOLUENE	ND	ND	ND	ND	ND	ND	ND
2,6-DINITROTOLUENE	ND	ND	ND	ND	ND	ND	ND
2-CHLORONAPHTHALENE	ND	ND	ND	ND	ND	ND	ND
2-CHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND
2-METHYLNAPHTHALENE	0.014 J	ND	ND	ND	ND	ND	ND
2-METHYLPHENOL (O-CRESOL)	ND	ND	ND	ND	ND	ND	ND
2-NITROANILINE	ND	ND	ND	ND	ND	ND	ND
2-NITROPHENOL	ND	ND	ND	ND	ND	ND	ND
3- AND 4- METHYLPHENOL (TOTAL)	ND	ND	ND	ND	ND	ND	ND
3,3'-DICHLOROBENZIDINE	ND	ND	ND	ND	ND	ND	ND
3-NITROANILINE	ND	ND	ND	ND	ND	ND	ND
4,6-DINITRO-2-METHYLPHENOL	ND	ND	ND	ND	ND	ND	ND
4-BROMOPHENYL PHENYL ETHER	ND	ND	ND	ND	ND	ND	ND
4-CHLORO-3-METHYLPHENOL	ND	ND	ND	ND	ND	ND	ND
4-CHLOROANILINE	0.022 J	ND	ND	ND	ND	ND	ND
4-CHLOROPHENYL PHENYL ETHER	ND	ND	ND	ND	ND	ND	ND
4-NITROANILINE	ND	ND	ND	ND	ND	ND	ND
4-NITROPHENOL	ND	ND	ND	ND	ND	ND	ND
ACENAPHTHYLENE	0.078	0.14	ND	0.033 J	0.049	ND	ND
ACETOPHENONE	ND	ND	ND	ND	ND	ND	ND
ANTHRACENE	0.11	0.26	0.056 J	0.028 J	0.036 J	ND	ND
ATRAZINE	ND	ND	ND	ND	ND	ND	ND
BENZALDEHYDE	0.057 J	ND	ND	ND	ND	ND	ND
BENZO(A)ANTHRACENE	0.33	0.67	0.17	0.11	0.11	ND	0.069
BENZO(A)PYRENE	0.33	0.54	0.16	0.11	0.14	ND	0.093
BENZO(B)FLUORANTHENE	0.43	0.69	0.21	0.13	0.16	ND	0.14
BENZO(G,H,I)PERYLENE	0.2	0.45 J-	0.16 J-	0.12 J-	0.14 J-	ND	0.14
BENZO(K)FLUORANTHENE	0.18	0.21	0.075 J	0.064	0.049	ND	0.053
BENZYL BUTYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND
BIPHENYL (DIPHENYL)	ND	ND	ND	ND	ND	ND	ND
BIS(2-CHLOROETHOXY) METHANE	ND	ND	ND	ND	ND	ND	ND
BIS(2-CHLOROETHYL) ETHER	ND	ND	ND	ND	ND	ND	ND
BIS(2-CHLOROISOPROPYL) ETHER	ND	ND	ND	ND	ND	ND	ND

Table A-10e Analytical Results for Semi-volatiles in Sediment Samples Collected from the Background Location

Analyte	Sample ID: BG1-SED01 Date: 5/21/2015	BG1-SED02 5/22/2015	BG1-SED03 5/22/2015	BG1-SED04 5/22/2015	BG1-SED05 5/22/2015	BG1-SED06 5/22/2015	BG1-SED07 5/22/2015
BIS(2-ETHYLHEXYL) PHTHALATE	0.056 J	ND	0.44 J	0.18 J	0.96	ND	0.11 J
CAPROLACTAM	ND	ND	ND	ND	ND	ND	ND
CARBAZOLE	0.026 J	ND	ND	ND	ND	ND	ND
CHRYSENE	0.36	0.62	0.17	0.12	0.13	ND	0.11 J
DIBENZ(A,H)ANTHRACENE	0.062	0.13	ND	ND	0.044	ND	ND
DIBENZOFURAN	ND	ND	ND	ND	ND	ND	ND
DIETHYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND
DIMETHYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND
DI-N-BUTYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND
DI-N-OCTYLPHTHALATE	ND	ND	ND	ND	ND	ND	ND
FLUORANTHENE	0.77	1.2	0.31	0.17	0.17	ND	0.19
FLUORENE	0.042 J	0.086 J	ND	ND	ND	ND	ND
HEXACHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROBUTADIENE	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROCYCLOPENTADIENE	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROETHANE	ND	ND	ND	ND	ND	ND	ND
INDENO(1,2,3-C,D)PYRENE	0.19	0.41	0.15	0.1	0.11	ND	0.11
ISOPHORONE	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	ND	ND	ND	ND	ND	ND	ND
NITROBENZENE	ND	ND	ND	ND	ND	ND	ND
N-NITROSODI-N-PROPYLAMINE	ND	ND	ND	ND	ND	ND	ND
N-NITROSODIPHENYLAMINE	ND	ND	ND	ND	ND	ND	ND
PAH, HMW Total	3.282	5.69 J-	1.625	1.064	1.193 J-	ND	1.035
PAH, LMW Total	0.512	1.087	0.196	0.126	0.158	ND	0.057
PAH, Mixture	3.794	6.777	1.821	1.19	1.351	ND	1.092
PENTACHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND
PHENANTHRENE	0.25	0.57	0.14	0.065	0.073	ND	0.057
PHENOL	0.023 J	ND	ND	ND	ND	ND	ND
PYRENE	0.43	0.77	0.22	0.14	0.14	ND	0.13

Key:

Qualifiers

J = Estimated value

J- = Estimated value with low bias

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

Table A-10f Analytical Results for Pesticides in Sediment Samples Collected from the Background Location

Analyte	Sample ID: BG1-SED01 Date: 5/21/2015	BG1-SED02 5/22/2015	BG1-SED03 5/22/2015	BG1-SED04 5/22/2015	BG1-SED05 5/22/2015	BG1-SED06 5/22/2015	BG1-SED07 5/22/2015
Pesticides, mg/kg							
ALDRIN	ND	ND	ND	ND	ND	ND	0.00022 J
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	ND	ND	ND	ND	ND	ND	ND
ALPHA ENDOSULFAN	ND	ND	ND	ND	ND	ND	ND
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	ND	0.00039 J	ND	ND	ND	ND	ND
BETA ENDOSULFAN	0.00012 J	ND	ND	ND	0.00026 J+	ND	ND
CIS-CHLORDANE	ND	ND	ND	0.00037 J	ND	ND	ND
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	0.00015 J	0.0002 J	0.00016 J	0.0014 J	0.00021 J+	ND	0.00011 J
DIELDRIN	0.00012 J	ND	0.00011 J	0.00029 J	0.00021 J+	ND	0.00019 J
ENDOSULFAN SULFATE	0.00033 J	ND	0.00009 J	0.00073 J	0.0008 J+	ND	0.00012 J
ENDRIN	0.00092	0.0014	0.0011	0.002 J	0.00017 J+	ND	0.00042 J
ENDRIN ALDEHYDE	0.00013 J	ND	ND	0.00011 J	0.00046 J+	ND	0.00022 J
ENDRIN KETONE	0.0003 J	ND	ND	0.00063 J	0.0011 J+	ND	0.00013 J
GAMMA BHC (LINDANE)	ND	0.00021 J	ND	ND	ND	ND	ND
HEPTACHLOR	ND	ND	ND	0.00087 J	0.00032 J+	ND	ND
HEPTACHLOR EPOXIDE	0.00041 J	0.00045 J	0.0005 J	0.0021 J	0.0003 J+	ND	0.00037 J
METHOXYCHLOR	0.00054 J	ND	ND	ND	ND	ND	ND
P,P'-DDD	0.00082 J	0.0015	0.00082 J	0.0016 J	0.00067 J+	0.000075 J	0.00067
P,P'-DDE	0.0037	0.003	0.0022	0.0053 J	0.0021 J+	0.000099 J	0.0023
P,P'-DDT	0.0016	0.0001 J	0.00022 J	0.0044	0.00045 J+	ND	0.00022 J
TOXAPHENE	ND	ND	ND	ND	ND	ND	ND
TRANS-CHLORDANE	0.0015	0.00084 J	0.0011 J	0.0024 J	ND	0.00029 J	0.001

Key:

Qualifiers

J = Estimated value

J+ = Estimated value with high bias

Other

ND = Sample is "non-detect"

mg/kg= Milligrams per kilogram

Table A-10g Analytical Results for PCB Congeners in Sediment Samples Collected from the Background Location

Analyte	Sample ID: BG1-SED01 Date: 5/21/2015
PCB Congeners, ng/kg	
DECACHLOROBIPHENYL (PCB 209)	890
DICHLOROBIPHENYL; 2,4'- (PCB 8)	360
HEPTACHLOROBIPHENYL; 2,2',3,3',4,4',5- (PCB 170)	520
HEPTACHLOROBIPHENYL; 2,2',3,4,4',5,5'- (PCB 180)	1100 J
HEPTACHLOROBIPHENYL; 2,2',3,4',5,5',6- (PCB 187)	740
HEPTACHLOROBIPHENYL; 2,3,3',4,4',5,5'- (PCB 189)	24
HEXACHLOROBIPHENYL; 2,2',3,3',4,4'- (PCB 128)	480 J
HEXACHLOROBIPHENYL; 2,2',3,4,4',5'- (PCB 138)	2900 J
HEXACHLOROBIPHENYL; 2,2',4,4',5,5'- (PCB 153)	2300 J
HEXACHLOROBIPHENYL; 2,3,3',4,4',5- (PCB 156)	290 J
HEXACHLOROBIPHENYL; 2,3,3',4,4',5'- (PCB 157)	290 J
HEXACHLOROBIPHENYL; 2,3',4,4',5,5'- (PCB 167)	100
HEXACHLOROBIPHENYL; 3,3',4,4',5,5'- (PCB 169)	5.0 EMPCJ
NONACHLOROBIPHENYL; 2,2',3,3',4,4',5,5',6- (PCB 206)	720
OCTACHLOROBIPHENYL; 2,2',3,3',4,4',5,6- (PCB 195)	130
PENTACHLOROBIPHENYL; 2,2',4,5,5'- (PCB 101)	3200 J
PENTACHLOROBIPHENYL; 2,3,3',4,4'- (PCB 105)	1200
PENTACHLOROBIPHENYL; 2,3,4,4',5- (PCB 114)	71
PENTACHLOROBIPHENYL; 2,3',4,4',5- (PCB 118)	3000
PENTACHLOROBIPHENYL; 2',3,4,4',5- (PCB 123)	74
PENTACHLOROBIPHENYL; 3,3',4,4',5- (PCB 126)	14
TETRACHLOROBIPHENYL; 2,2',3,5'- (PCB 44)	3900 J
TETRACHLOROBIPHENYL; 2,2',5,5'- (PCB 52)	4200
TETRACHLOROBIPHENYL; 2,3',4,4'- (PCB 66)	3500
TETRACHLOROBIPHENYL; 3,3',4,4'- (PCB 77)	310
TETRACHLOROBIPHENYL; 3,4,4',5- (PCB 81)	11 EMPCJ
TRICHLOROBIPHENYL; 2,2',5- (PCB 18)	920 J
TRICHLOROBIPHENYL; 2,4,4'- (PCB 28)	2700 J

Key:

Qualifiers

J = Estimated value

EMPC = Estimated Maximum Possible Concentration

Other

ng/kg = Nanograms per kilogram

-- = Analyte not analyzed for

"-FD" denotes field duplicate sample

Table A-10h Analytical Results for PCB Congeners in Sediment Samples Collected from the Background Location

Analyte	Sample ID: BG1-SED01 Date: 5/21/2015
Dioxins/Furans, ng/kg	
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	130
1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN	140
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	5.5 J
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	17 J
1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN	2.0 J
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	11 EMPCJ
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	7.0
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	0.54 EMPCJ
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	4.4 J
1,2,3,7,8-PENTACHLORODIBENZOFURAN	2.7 J
1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN	1.6 J
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	1.9 EMPCJ
2,3,4,7,8-PENTACHLORODIBENZOFURAN	2.5 J
2,3,7,8-TETRACHLORODIBENZOFURAN	2.9 EMPCJ
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	0.65 J
OCTACHLORODIBENZOFURAN	170
OCTACHLORODIBENZO-P-DIOXIN	1500

Key:

Qualifiers

J = Estimated value

EMPC = Estimated Maximum Possible Concentration

Other

ng/kg = Nanograms per kilogram

Table A-11a Analytical Results for PCB Aroclors in Fish Tissue Samples Collected from the Creek Channel

Sample ID: / Date: / Analyte	OU2-RED-01 5/21/2015	OU2-RED-02 5/21/2015	OU2-RED-03 5/21/2015	OU2-SMB-01 5/21/2015	OU2-SMB-02 5/21/2015	OU2-SMB-03 5/21/2015	OU2-SMB-04 5/21/2015	OU2-WAL-01 5/21/2015	OU2-WAL-02 5/21/2015
PCB Aroclors, mg/kg									
PCB-1016 (AROCLOR 1016)	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1221 (AROCLOR 1221)	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1232 (AROCLOR 1232)	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1242 (AROCLOR 1242)	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1248 (AROCLOR 1248)	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1254 (AROCLOR 1254)	0.12 J	0.018 J	0.0044 J	0.11 J	0.058 J	0.46 J	0.084 J	0.060 J	0.080 J
PCB-1260 (AROCLOR 1260)	0.061 J	0.016	0.0023	0.05	0.024	0.15	0.028	0.044	0.056
PCB-1262 (AROCLOR 1262)	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1268 (AROCLOR 1268)	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table A-11a Analytical Results for PCB Aroclors in Fish Tissue Samples Collected from the Creek Channel

Sample ID: / Date: / Analyte	OU2-WAL-03 5/21/2015	OU2-ROC-C01 5/21/2015	OU2-ROC-C02 5/21/2015	OU2-ROC-C03 5/21/2015
PCB Aroclors, mg/kg				
PCB-1016 (AROCLOR 1016)	ND	ND	ND	ND
PCB-1221 (AROCLOR 1221)	ND	ND	ND	ND
PCB-1232 (AROCLOR 1232)	ND	ND	ND	ND
PCB-1242 (AROCLOR 1242)	ND	ND	ND	ND
PCB-1248 (AROCLOR 1248)	ND	ND	ND	ND
PCB-1254 (AROCLOR 1254)	0.060 J	0.34 J	0.11 J	0.62 J
PCB-1260 (AROCLOR 1260)	0.029	0.12	0.041	0.21
PCB-1262 (AROCLOR 1262)	ND	ND	ND	ND
PCB-1268 (AROCLOR 1268)	ND	ND	ND	ND

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

Table A-11b Analytical Results for TAL Metals in Fish Tissue Samples Collected from the Creek Channel

Sample ID: / Date: / Analyte	OU2-RED-01 5/21/2015	OU2-RED-02 5/21/2015	OU2-RED-03 5/21/2015	OU2-SMB-01 5/21/2015	OU2-SMB-02 5/21/2015	OU2-SMB-03 5/21/2015	OU2-SMB-04 5/21/2015	OU2-WAL-01 5/21/2015	OU2-WAL-02 5/21/2015
Metals, mg/kg									
ALUMINUM	2.9 J	1.1 J	2.6 J	--	2.0 J	1.3 J	1.5 J	1.4 J	0.98 J
ANTIMONY	ND	ND	ND	--	ND	ND	ND	ND	ND
ARSENIC	0.027 J	0.029 J	0.046 J	--	0.21	0.16	0.20	0.14	0.18
BARIUM	0.22 J	0.20 J	0.16 J	--	0.23 J	0.18 J	0.17 J	0.22 J	0.22 J
BERYLLIUM	ND	ND	ND	--	ND	ND	ND	ND	ND
CADMIUM	ND	ND	ND	--	ND	ND	ND	ND	ND
CALCIUM	830	2800	1400	--	8900	6000	4100	6200	6000
CHROMIUM, TOTAL	0.19 J	0.35	1.1	--	0.22	0.51	0.19 J	0.18 J	0.19 J
COBALT	0.010 J	0.011 J	0.021 J	--	0.014 J	0.011 J	0.0097 J	0.008 J	0.0086 J
COPPER	0.59	5.7	6.8	--	0.44	0.47	0.46	0.43	0.37
IRON	15	25	30	--	7.2	8.4	6.4	7.2	ND
LEAD	0.031 J	0.14	0.22	--	0.054 J	0.060 J	0.33	0.030 J	0.024 J
MAGNESIUM	240	190	300	--	500	440	380	360	410
MANGANESE	0.53	1.2	0.84	--	0.76	0.49	0.55	0.55	0.51 J
MERCURY	0.095 J	0.17	0.064 J	--	0.46	0.27	0.50	0.32	0.40
NICKEL	0.072 J	0.16	0.58	--	0.076 J	0.18	0.079 J	0.06 J	0.038 J
POTASSIUM	3200	1700	4000	--	4100	3900	4000	3800	4100
SELENIUM	0.34 J	0.20 J	0.32 J	--	0.56	0.47 J	0.56	0.39 J	0.52 J
SILVER	ND	ND	ND	--	ND	ND	ND	ND	ND
SODIUM	1100	400	800	--	940	820	830	700	600
THALLIUM	ND	ND	ND	--	ND	ND	ND	ND	ND
VANADIUM	0.43	0.20	0.44	--	0.36	0.33	0.34	0.40	0.39
ZINC	12	6.8	12	--	13	8.7	8.4	6.7	8.2

Table A-11b Analytical Results for TAL Metals in Fish Tissue Samples Collected from the Creek Channel

Sample ID: / Date: / Analyte	OU2-WAL-03 5/21/2015	OU2-ROC-C01 5/21/2015	OU2-ROC-C02 5/21/2015	OU2-ROC-C03 5/21/2015
Metals, mg/kg				
ALUMINUM	0.83 J	2.5 J	1.9 J	22
ANTIMONY	ND	ND	ND	ND
ARSENIC	0.078 J	0.14	0.24	0.35
BARIUM	0.092 J	0.50 J	1.2	2.8
BERYLLIUM	ND	ND	ND	ND
CADMIUM	ND	0.0088 J	ND	0.017 J
CALCIUM	1900	7600	17000	22000
CHROMIUM, TOTAL	0.16 J	0.16 J	0.25	0.79
COBALT	0.0054 J	0.016 J	0.019 J	0.067
COPPER	0.39	0.49	0.76	5.5
IRON	ND	16	18	79
LEAD	0.018 J	0.10	0.18	0.78
MAGNESIUM	300	380	530	690
MANGANESE	0.35 J	1.0	1.7	7.9
MERCURY	0.20	0.18	0.077 J	0.064 J
NICKEL	0.031 J	0.039 J	0.041 J	0.47
POTASSIUM	3800	2900	2700	2600
SELENIUM	0.26 J	0.43 J	0.42 J	0.53
SILVER	ND	ND	ND	ND
SODIUM	610	1200	1300	1500
THALLIUM	ND	ND	ND	ND
VANADIUM	0.34	0.33	0.42	0.46
ZINC	5.7	18	22	31

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

-- = Sample not analyzed for parameter due to inadequate tissue available.

Table A-11c Analytical Results for Semi-volatiles in Fish Tissue Samples Collected from the Creek Channel

Analyte / Sample ID: / Date:	OU2-RED-01 5/21/2015	OU2-RED-02 5/21/2015	OU2-RED-03 5/21/2015	OU2-SMB-01 5/21/2015	OU2-SMB-02 5/21/2015	OU2-SMB-03 5/21/2015	OU2-SMB-04 5/21/2015	OU2-WAL-01 5/21/2015
Semi-volatile Compounds, mg/kg								
1,2,4,5-TETRACHLOROBENZENE	ND	ND	ND	--	--	ND	ND	ND
2,3,4,6-TETRACHLOROPHENOL	ND	ND	ND	--	--	ND	ND	ND
2,4,5-TRICHLOROPHENOL	ND	ND	ND	--	--	ND	ND	ND
2,4,6-TRICHLOROPHENOL	ND	ND	ND	--	--	ND	ND	ND
2,4-DICHLOROPHENOL	ND	ND	ND	--	--	ND	ND	ND
2,4-DIMETHYLPHENOL	ND	ND	ND	--	--	ND	ND	ND
2,4-DINITROPHENOL	ND	ND	ND	--	--	ND	ND	ND
2,4-DINITROTOLUENE	ND	ND	ND	--	--	ND	ND	ND
2,6-DINITROTOLUENE	ND	ND	ND	--	--	ND	ND	ND
2-CHLORONAPHTHALENE	ND	ND	ND	--	--	ND	ND	ND
2-CHLOROPHENOL	ND	ND	ND	--	--	ND	ND	ND
2-METHYLNAPHTHALENE	ND	ND	ND	--	--	ND	ND	ND
2-METHYLPHENOL (O-CRESOL)	ND	ND	ND	--	--	ND	ND	0.028 J
2-NITROANILINE	ND	ND	ND	--	--	ND	ND	ND
2-NITROPHENOL	ND	ND	ND	--	--	ND	ND	ND
3- AND 4- METHYLPHENOL (TOTAL)	ND	ND	0.027 J	--	--	ND	ND	0.070 J
3,3'-DICHLOROBENZIDINE	ND	ND	ND	--	--	ND	ND	ND
3-NITROANILINE	ND	ND	ND	--	--	ND	ND	ND
4,6-DINITRO-2-METHYLPHENOL	ND	ND	ND	--	--	ND	ND	ND
4-BROMOPHENYL PHENYL ETHER	ND	ND	ND	--	--	ND	ND	ND
4-CHLORO-3-METHYLPHENOL	ND	ND	ND	--	--	ND	ND	ND
4-CHLOROANILINE	ND	ND	ND	--	--	ND	ND	ND
4-CHLOROPHENYL PHENYL ETHER	ND	ND	ND	--	--	ND	ND	ND
4-NITROANILINE	ND	ND	ND	--	--	ND	ND	ND
4-NITROPHENOL	ND	ND	ND	--	--	ND	ND	ND
ACENAPHTHENE	ND	ND	ND	--	--	ND	ND	0.022 J
ACENAPHTHYLENE	ND	ND	ND	--	--	ND	ND	ND
ACETOPHENONE	ND	ND	ND	--	--	ND	ND	ND
ANTHRACENE	ND	ND	ND	--	--	ND	ND	ND
ATRAZINE	ND	ND	ND	--	--	ND	ND	ND
BENZALDEHYDE	ND	ND	ND	--	--	ND	ND	ND
BENZO(A)ANTHRACENE	ND	ND	ND	--	--	ND	ND	ND
BENZO(A)PYRENE	ND	ND	ND	--	--	ND	ND	ND
BENZO(B)FLUORANTHENE	ND	ND	ND	--	--	ND	ND	ND
BENZO(G,H,I)PERYLENE	ND	ND	ND	--	--	ND	ND	ND
BENZO(K)FLUORANTHENE	ND	ND	ND	--	--	ND	ND	ND
BENZYL BUTYL PHTHALATE	ND	ND	ND	--	--	ND	ND	ND
BIPHENYL (DIPHENYL)	ND	ND	ND	--	--	ND	ND	ND
BIS(2-CHLOROETHOXY) METHANE	ND	ND	ND	--	--	ND	ND	ND
BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL	ND	ND	ND	--	--	ND	ND	ND
BIS(2-CHLOROISOPROPYL) ETHER	ND	ND	ND	--	--	ND	ND	ND
BIS(2-ETHYLHEXYL) PHTHALATE	ND	ND	ND	--	--	ND	ND	ND

Table A-11c Analytical Results for Semi-volatiles in Fish Tissue Samples Collected from the Creek Channel

Analyte	Sample ID: OU2-WAL-02 Date: 5/21/2015	OU2-WAL-03 5/21/2015	OU2-ROC-C01 5/21/2015	OU2-ROC-C02 5/21/2015	OU2-ROC-C03 5/21/2015
Semi-volatile Compounds, mg/kg					
1,2,4,5-TETRACHLOROBENZENE	ND	ND	ND	ND	ND
2,3,4,6-TETRACHLOROPHENOL	ND	ND	ND	ND	ND
2,4,5-TRICHLOROPHENOL	ND	ND	ND	ND	ND
2,4,6-TRICHLOROPHENOL	ND	ND	ND	ND	ND
2,4-DICHLOROPHENOL	ND	ND	ND	ND	ND
2,4-DIMETHYLPHENOL	ND	ND	ND	ND	ND
2,4-DINITROPHENOL	ND	ND	ND	ND	ND
2,4-DINITROTOLUENE	ND	ND	ND	ND	ND
2,6-DINITROTOLUENE	ND	ND	ND	ND	ND
2-CHLORONAPHTHALENE	ND	ND	ND	ND	ND
2-CHLOROPHENOL	ND	ND	ND	ND	ND
2-METHYLNAPHTHALENE	ND	ND	ND	ND	ND
2-METHYLPHENOL (O-CRESOL)	ND	0.033 J	ND	ND	ND
2-NITROANILINE	ND	ND	ND	ND	ND
2-NITROPHENOL	ND	ND	ND	ND	ND
3- AND 4- METHYLPHENOL (TOTAL)	0.072 J	0.080 J	ND	ND	0.66
3,3'-DICHLOROBENZIDINE	ND	ND	ND	ND	ND
3-NITROANILINE	ND	ND	ND	ND	ND
4,6-DINITRO-2-METHYLPHENOL	ND	ND	ND	ND	ND
4-BROMOPHENYL PHENYL ETHER	ND	ND	ND	ND	ND
4-CHLORO-3-METHYLPHENOL	ND	ND	ND	ND	ND
4-CHLOROANILINE	ND	ND	ND	ND	ND
4-CHLOROPHENYL PHENYL ETHER	ND	ND	ND	ND	ND
4-NITROANILINE	ND	ND	ND	ND	ND
4-NITROPHENOL	ND	ND	ND	ND	ND
ACENAPHTHENE	ND	0.019 J	ND	ND	ND
ACENAPHTHYLENE	ND	ND	ND	ND	ND
ACETOPHENONE	ND	ND	ND	ND	ND
ANTHRACENE	ND	ND	ND	ND	ND
ATRAZINE	ND	ND	ND	ND	ND
BENZALDEHYDE	ND	ND	ND	ND	0.069 J
BENZO(A)ANTHRACENE	ND	ND	ND	ND	ND
BENZO(A)PYRENE	ND	ND	ND	ND	ND
BENZO(B)FLUORANTHENE	ND	ND	ND	ND	ND
BENZO(G,H,I)PERYLENE	ND	ND	ND	ND	ND
BENZO(K)FLUORANTHENE	ND	ND	ND	ND	ND
BENZYL BUTYL PHTHALATE	ND	ND	ND	ND	ND
BIPHENYL (DIPHENYL)	ND	ND	ND	ND	ND
BIS(2-CHLOROETHOXY) METHANE	ND	ND	ND	ND	ND
BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL	ND	ND	ND	ND	ND
BIS(2-CHLOROISOPROPYL) ETHER	ND	ND	ND	ND	ND
BIS(2-ETHYLHEXYL) PHTHALATE	ND	ND	ND	ND	ND

Table A-11c Analytical Results for Semi-volatiles in Fish Tissue Samples Collected from the Creek Channel

Analyte / Sample ID: / Date:	OU2-RED-01 5/21/2015	OU2-RED-02 5/21/2015	OU2-RED-03 5/21/2015	OU2-SMB-01 5/21/2015	OU2-SMB-02 5/21/2015	OU2-SMB-03 5/21/2015	OU2-SMB-04 5/21/2015	OU2-WAL-01 5/21/2015
CAPROLACTAM	ND	ND	ND	--	--	ND	ND	ND
CARBAZOLE	ND	ND	ND	--	--	ND	ND	ND
CHRYSENE	ND	ND	ND	--	--	ND	ND	ND
DIBENZ(A,H)ANTHRACENE	ND	ND	ND	--	--	ND	ND	ND
DIBENZOFURAN	ND	ND	ND	--	--	ND	ND	ND
DIETHYL PHTHALATE	ND	ND	ND	--	--	ND	ND	ND
DIMETHYL PHTHALATE	ND	ND	ND	--	--	ND	ND	ND
DI-N-BUTYL PHTHALATE	ND	ND	ND	--	--	ND	ND	ND
DI-N-OCTYLPHTHALATE	ND	ND	ND	--	--	ND	ND	ND
FLUORANTHENE	ND	ND	ND	--	--	ND	ND	ND
FLUORENE	ND	ND	ND	--	--	ND	ND	ND
HEXACHLOROBENZENE	ND	ND	ND	--	--	ND	ND	ND
HEXACHLOROBUTADIENE	ND	ND	ND	--	--	ND	ND	ND
HEXACHLOROCYCLOPENTADIENE	ND	ND	ND	--	--	ND	ND	ND
HEXACHLOROETHANE	ND	ND	ND	--	--	ND	ND	ND
INDENO(1,2,3-C,D)PYRENE	ND	ND	ND	--	--	ND	ND	ND
ISOPHORONE	ND	ND	ND	--	--	ND	ND	ND
NAPHTHALENE	ND	ND	ND	--	--	ND	ND	0.058
NITROBENZENE	ND	ND	ND	--	--	ND	ND	ND
N-NITROSODI-N-PROPYLAMINE	ND	ND	ND	--	--	ND	ND	ND
N-NITROSODIPHENYLAMINE	ND	ND	ND	--	--	ND	ND	ND
PENTACHLOROPHENOL	ND	ND	ND	--	--	ND	ND	0.050 J
PHENANTHRENE	ND	ND	ND	--	--	ND	ND	ND
PHENOL	ND	ND	ND	--	--	ND	0.15	0.11
PYRENE	ND	ND	ND	--	--	ND	ND	ND

Table A-11c Analytical Results for Semi-volatiles in Fish Tissue Samples Collected from the Creek Channel

Analyte	Sample ID: / Date: OU2-WAL-02 5/21/2015	OU2-WAL-03 5/21/2015	OU2-ROC-C01 5/21/2015	OU2-ROC-C02 5/21/2015	OU2-ROC-C03 5/21/2015
CAPROLACTAM	ND	ND	ND	ND	ND
CARBAZOLE	ND	ND	ND	ND	ND
CHRYSENE	ND	ND	ND	ND	ND
DIBENZ(A,H)ANTHRACENE	ND	ND	ND	ND	ND
DIBENZOFURAN	ND	ND	ND	ND	ND
DIETHYL PHTHALATE	ND	ND	ND	ND	ND
DIMETHYL PHTHALATE	ND	ND	ND	ND	ND
DI-N-BUTYL PHTHALATE	ND	ND	ND	ND	ND
DI-N-OCTYLPHTHALATE	ND	ND	ND	ND	ND
FLUORANTHENE	ND	ND	ND	ND	ND
FLUORENE	ND	ND	ND	ND	ND
HEXACHLOROBENZENE	ND	ND	ND	ND	ND
HEXACHLOROBUTADIENE	ND	ND	ND	ND	ND
HEXACHLOROCYCLOPENTADIENE	ND	ND	ND	ND	ND
HEXACHLOROETHANE	ND	ND	ND	ND	ND
INDENO(1,2,3-C,D)PYRENE	ND	ND	ND	ND	ND
ISOPHORONE	ND	ND	ND	ND	ND
NAPHTHALENE	0.047 J	0.053	ND	ND	ND
NITROBENZENE	ND	ND	ND	ND	ND
N-NITROSODI-N-PROPYLAMINE	ND	ND	ND	ND	ND
N-NITROSODIPHENYLAMINE	ND	ND	ND	ND	ND
PENTACHLOROPHENOL	ND	ND	ND	ND	ND
PHENANTHRENE	ND	ND	ND	ND	ND
PHENOL	0.10	0.11	ND	ND	0.030 J
PYRENE	ND	ND	ND	ND	ND

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

-- = Sample not analyzed for parameter due to inadequate tissue available.

Table A-11d Analytical Results for Pesticides in Fish Tissue Samples Collected from the Creek Channel

Sample ID: / Date: / Analyte	OU2-RED-01 5/21/2015	OU2-RED-02 5/21/2015	OU2-RED-03 5/21/2015	OU2-SMB-01 5/21/2015	OU2-SMB-02 5/21/2015	OU2-SMB-03 5/21/2015	OU2-SMB-04 5/21/2015	OU2-WAL-01 5/21/2015	OU2-WAL-02 5/21/2015
Pesticides, mg/kg									
ALDRIN	0.000068 J	0.000024 J	0.000037 J	0.00039 J	ND	0.00031 J	0.00026 J	0.000074 J	0.000099 J
ALPHA BHC (ALPHA	ND	0.000062 J	0.000028 J	ND	ND	ND	ND	ND	0.00003 J
ALPHA ENDOSULFAN	0.00027 J	0.000018 J	0.000057 J	0.0003 J	0.00017 J	0.0033	0.00033 J	0.000087 J	0.00044 J
BETA BHC (BETA	0.00054 J	ND	0.000047 J	ND	0.00015 J	0.00018 J	ND	ND	0.000059 J
BETA ENDOSULFAN	0.00018 J	0.000025 J	0.000031 J	0.0003 J	0.000082 J	0.002 J	0.00017 J	0.00018 J	0.00033 J
CIS-CHLORDANE	0.0014 J	0.00016 J	0.00027	0.0011 J	0.00013 J	0.0037 J	0.00053 J	0.001	0.0024 J
DELTA BHC (DELTA	0.00025 J	0.000022 J	0.000067 J	0.00016 J	ND	0.0013	0.00013 J	ND	0.00032 J
DIELDRIN	0.00081 J	0.00012 J	0.00015 J	0.00088 J	0.00041 J	0.0074 J	0.00075 J	0.00055 J	0.0012 J
ENDOSULFAN SULFATE	0.00064 J	0.00015 J	0.00026	0.0016	0.00042 J	0.009	0.00082	0.00079	0.0018 J
ENDRIN	0.005 J	0.0014	0.0012	0.0067	0.0034	0.066	0.0077 J	0.0028 J	0.0073 J
ENDRIN ALDEHYDE	0.0003 J	0.00011 J	0.000066 J	0.00056 J	0.00041 J	0.0087	0.00085	0.00022 J	0.00064 J
ENDRIN KETONE	0.00098 J	0.00032 J	0.00026 J	0.0017 J	0.00055 J	0.011 J	0.0008 J	0.00097 J	0.0017 J
GAMMA BHC (LINDANE)	0.000074 J	0.00016	0.00014 J	0.00084	0.00043 J	0.00081 J	0.0005 J	0.00019 J	0.00027 J
HEPTACHLOR	0.00032 J	ND	ND	ND	ND	0.0016 J	ND	ND	0.00028 J
HEPTACHLOR EPOXIDE	0.0015 J	0.00026 J	0.00031 J	0.0033 J	0.00066 J	0.016 J	0.002 J	0.00067 J	0.0024 J
METHOXYCHLOR	0.0027 J	0.00092 J	0.0007 J	0.0028 J	0.0013 J	0.019 J	0.0019 J	0.0021 J	0.0052 J
P,P'-DDD	0.0017 J	0.00013 J	0.00048 J	0.00045 J	ND	0.0011 J	ND	0.0009 J	0.0013 J
P,P'-DDE	0.0095 J	0.0016	0.0023	0.0061 J	0.00069 J	0.009 J	0.0012 J	0.0076	0.013 J
P,P'-DDT	0.0071 J	0.0024	0.002	0.014	0.0067	0.12	0.016	0.0045	0.012 J
TOXAPHENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-CHLORDANE	0.0039 J	0.0024	0.00099	0.0048	0.0019	0.039	0.0044	0.0019	0.0056 J

Table A-11d Analytical Results for Pesticides in Fish Tissue Samples Collected from the Creek Channel

Sample ID: / Date: / Analyte	OU2-WAL-03 5/21/2015	OU2-ROC-C01 5/21/2015	OU2-ROC-C02 5/21/2015	OU2-ROC-C03 5/21/2015
Pesticides, mg/kg				
ALDRIN	0.00024 J	0.00035 J	0.00068 J	0.00043 J
ALPHA BHC (ALPHA	ND	0.000093 J	0.00011 J	ND
ALPHA ENDOSULFAN	0.00041	0.00094 J	0.00054 J	0.0022
BETA BHC (BETA	0.00005 J	0.00052	0.00037 J	0.00057 J
BETA ENDOSULFAN	0.00042 J	0.00048 J	0.0006 J	0.00083 J
CIS-CHLORDANE	0.0029	0.003 J	0.0027	0.0022 J
DELTA BHC (DELTA	0.0003 J	0.00038 J	0.00031 J	0.00052 J
DIELDRIN	0.0015 J	0.0025 J	0.002 J	0.0036 J
ENDOSULFAN SULFATE	0.0018	0.0037 J	0.0022	0.004
ENDRIN	0.0061 J	0.03	0.011	0.03
ENDRIN ALDEHYDE	0.00065 J	0.0036	0.0012 J	0.0037
ENDRIN KETONE	0.0014 J	0.0026 J	0.002 J	0.0028 J
GAMMA BHC (LINDANE)	0.00022 J	0.0011 J	0.0008 J	0.00079 J
HEPTACHLOR	0.00036 J	0.00042 J	0.0006 J	0.00044 J
HEPTACHLOR EPOXIDE	0.0018 J	0.01 J	0.0038 J	0.0067 J
METHOXYCHLOR	ND	0.01 J	0.0043 J	0.011 J
P,P'-DDD	0.0027 J	0.0018 J	0.0019 J	0.00074 J
P,P'-DDE	0.018	0.0097 J	0.02	0.0064 J
P,P'-DDT	0.0014 J	0.055 J	0.021	0.099
TOXAPHENE	ND	ND	ND	ND
TRANS-CHLORDANE	0.005	0.017	0.011 J	0.02

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

Table A-11e Analytical Results for PCB Congeners in Fish Tissue Samples Collected from the Creek Channel

Analyte	Sample ID: OU2-SMB-01 Date: 5/21/2015	OU2-ROC-C01 5/21/2015
PCB Congeners, ng/kg		
DECACHLOROBIPHENYL (PCB 209)	1600	1400
DICHLOROBIPHENYL; 2,4'- (PCB 8)	400	1600 EMPCJ
HEPTACHLOROBIPHENYL; 2,2',3,3',4,4',5- (PCB 170)	6400	17000
HEPTACHLOROBIPHENYL; 2,2',3,4,4',5,5'- (PCB 180)	22000 J	47000 J
HEPTACHLOROBIPHENYL; 2,2',3,4',5,5',6- (PCB 187)	16000	32000
HEPTACHLOROBIPHENYL; 2,3,3',4,4',5,5'- (PCB 189)	270	880
HEXACHLOROBIPHENYL; 2,2',3,3',4,4'- (PCB 128)	5100 J	25000 J
HEXACHLOROBIPHENYL; 2,2',3,4,4',5'- (PCB 138)	39000 J	170000 J
HEXACHLOROBIPHENYL; 2,2',4,4',5,5'- (PCB 153)	35000 J	130000 J
HEXACHLOROBIPHENYL; 2,3,3',4,4',5- (PCB 156)	4000 J	23000 J
HEXACHLOROBIPHENYL; 2,3,3',4,4',5'- (PCB 157)	4000 J	23000 J
HEXACHLOROBIPHENYL; 2,3',4,4',5,5'- (PCB 167)	1200	7000
HEXACHLOROBIPHENYL; 3,3',4,4',5,5'- (PCB 169)	64 EMPCJ	ND
NONACHLOROBIPHENYL; 2,2',3,3',4,4',5,5',6- (PCB 206)	3000	2600
OCTACHLOROBIPHENYL; 2,2',3,3',4,4',5,6- (PCB 195)	1400	2200
PENTACHLOROBIPHENYL; 2,2',4,5,5'- (PCB 101)	37000 J	140000 J
PENTACHLOROBIPHENYL; 2,3,3',4,4'- (PCB 105)	18000	62000
PENTACHLOROBIPHENYL; 2,3,4,4',5- (PCB 114)	1700	6100
PENTACHLOROBIPHENYL; 2,3',4,4',5- (PCB 118)	41000	190000
PENTACHLOROBIPHENYL; 2',3,4,4',5- (PCB 123)	1000	3900
PENTACHLOROBIPHENYL; 3,3',4,4',5- (PCB 126)	91 EMPCJ	1800
TETRACHLOROBIPHENYL; 2,2',3,5'- (PCB 44)	28000 J	100000 J
TETRACHLOROBIPHENYL; 2,2',5,5'- (PCB 52)	33000	98000
TETRACHLOROBIPHENYL; 2,3',4,4'- (PCB 66)	34000	67000
TETRACHLOROBIPHENYL; 3,3',4,4'- (PCB 77)	960	1800
TETRACHLOROBIPHENYL; 3,4,4',5- (PCB 81)	85	120 EMPCJ
TRICHLOROBIPHENYL; 2,2',5- (PCB 18)	1800 J	2800 J
TRICHLOROBIPHENYL; 2,4,4'- (PCB 28)	11000 J	17000 J

Key:

Qualifiers

J = Estimated value

EMPC = Estimated Maximum Possible Concentration

Other

ND = Sample is "non-detect"

ng/kg = nanograms per kilogram

Table A-11f Analytical Results for Dioxins/Furans in Fish Tissue Samples Collected from the Creek Channel

Analyte	Sample ID: OU2-SMB-01 Date: 5/21/2015	OU2-ROC-C01 5/21/2015
Dioxins/Furans, ng/kg		
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	ND	ND
1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN	0.057 EMPCJ	0.047 EMPCJ
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	ND	ND
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	0.87 EMPCJ	0.79 EMPCJ
1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN	0.081 EMPCJ	0.077 J
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	13 EMPCJ	11 EMPCJ
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	0.054 J	0.37 J
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	ND	ND
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	ND	0.067 EMPCJ
1,2,3,7,8-PENTACHLORODIBENZOFURAN	ND	ND
1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN	0.37 EMPCJ	ND
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	ND	ND
2,3,4,7,8-PENTACHLORODIBENZOFURAN	0.50 J	0.48 EMPCJ
2,3,7,8-TETRACHLORODIBENZOFURAN	ND	0.76 J
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	ND	1.3 EMPCJ
OCTACHLORODIBENZOFURAN	0.026 EMPCJ	0.035 EMPCJ
OCTACHLORODIBENZO-P-DIOXIN	1.2 EMPCJ	1.9 EMPCJ

Key:

Qualifiers

J = Estimated value

EMPC = Estimated Maximum Possible Concentration

Other

ND = Sample is "non-detect"

ng/kg = nanograms per kilogram

Table A-12a Analytical Results for PCB Aroclors in Fish Tissue Samples Collected from the Background Location

Sample ID:	BG1-CAR-01	BG1-CAR-02	BG1-CAR-03	BG1-CAR-04	BG1-CAR-05	BG1-CAR-06	BG1-CAR-07	BG1-CAR-08	BG1-CAR-09
Date:	5/21/2015	5/21/2015	5/21/2015	5/21/2015	5/21/2015	5/21/2015	5/21/2015	5/21/2015	5/21/2015
Analyte									
PCB Aroclors, mg/kg									
PCB-1016 (AROCLOR 1016)	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1221 (AROCLOR 1221)	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1232 (AROCLOR 1232)	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1242 (AROCLOR 1242)	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1248 (AROCLOR 1248)	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1254 (AROCLOR 1254)	0.017 J	0.0092 J	0.10 J	0.077 J	0.034 J	0.045 J	0.034 J	0.13 J	0.064 J
PCB-1260 (AROCLOR 1260)	0.0082 J	0.0092	0.056	0.038	0.030	0.028	0.020 J	0.069	0.039
PCB-1262 (AROCLOR 1262)	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1268 (AROCLOR 1268)	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table A-12a Analytical Results for PCB Aroclors in Fish Tissue Samples Collected from the Background Location

Sample ID: / Date: / Analyte	BG1-LMB-01 5/21/2015	BG1-BLU-C01 5/21/2015	BG1-CRA-C01 5/21/2015	BG1-PUM-C01 5/21/2015	BG1-ROC-C01 5/21/2015
PCB Aroclors, mg/kg					
PCB-1016 (AROCLOR 1016)	ND	ND	ND	ND	ND
PCB-1221 (AROCLOR 1221)	ND	ND	ND	ND	ND
PCB-1232 (AROCLOR 1232)	ND	ND	ND	ND	ND
PCB-1242 (AROCLOR 1242)	ND	ND	ND	ND	ND
PCB-1248 (AROCLOR 1248)	ND	ND	ND	ND	ND
PCB-1254 (AROCLOR 1254)	0.0041 J	0.050 J	0.11 J	0.078 J	0.068 J
PCB-1260 (AROCLOR 1260)	0.0021	0.020	0.045	0.032 J	0.045
PCB-1262 (AROCLOR 1262)	ND	ND	ND	ND	ND
PCB-1268 (AROCLOR 1268)	ND	ND	ND	ND	ND

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

Table A-12b Analytical Results for TAL Metals in Fish Tissue Samples Collected from the Background Location

Sample ID:	BG1-CAR-01	BG1-CAR-02	BG1-CAR-03	BG1-CAR-04	BG1-CAR-05	BG1-CAR-06	BG1-CAR-07	BG1-CAR-08	BG1-CAR-09
Date:	5/21/2015	5/21/2015	5/21/2015	5/21/2015	5/21/2015	5/21/2015	5/21/2015	5/21/2015	5/21/2015
Analyte									
Metals, mg/kg									
ALUMINUM	1.7 J	3.3	2.2 J	1.3 J	1.9 J	1.4 J	360	2.3 J	3.5
ANTIMONY	ND	ND	ND	ND	ND	ND	ND	ND	ND
ARSENIC	0.030 J	0.061 J	0.042 J	0.026 J	0.081 J	0.045 J	1.9 J	0.11	0.046 J
BARIUM	0.23 J	0.65 J	0.20 J	0.22 J	0.32 J	0.12 J	9.7 J	0.90 J	0.26 J
BERYLLIUM	ND	ND	ND	ND	ND	ND	ND	ND	ND
CADMIUM	ND	ND	ND	ND	ND	ND	ND	ND	ND
CALCIUM	1200	4100	2300	950	3800	480	40000	7900	1100
CHROMIUM, TOTAL	1.6	0.22	0.17 J	0.17 J	0.17 J	0.17 J	19 J	0.16 J	0.21
COBALT	0.052	0.099	0.013 J	0.0057 J	0.014 J	0.013 J	0.88 J	0.010 J	0.013 J
COPPER	0.38	0.37	0.94	0.57	1.1	0.94	50	0.59	1.7
IRON	23	16	20	13	19	18	1500	13	25
LEAD	0.034 J	0.077 J	0.05 J	0.024 J	0.052 J	0.020 J	2.7 J	0.12	0.065 J
MAGNESIUM	270	280	280	240	330	260	24000	390	310
MANGANESE	1.2	2.3	1.3	0.54	1.9	0.59	50	4.1	1.0
MERCURY	ND	0.057 J	0.048 J	ND	0.085 J	0.093 J	0.065 J	0.10 J	0.073 J
NICKEL	0.11	0.064 J	0.045 J	0.024 J	0.034 J	0.036 J	3.9 J	0.048 J	0.035 J
POTASSIUM	3300	3000	3300	2900	3400	3300	340000	3200	3700
SELENIUM	0.24 J	0.29 J	0.30 J	0.28 J	0.26 J	0.25 J	26 J	0.35 J	0.38 J
SILVER	ND	ND	ND	ND	ND	ND	ND	ND	ND
SODIUM	670	680	580	550	600	480	63000	580	580
THALLIUM	ND	ND	ND	ND	ND	ND	ND	ND	ND
VANADIUM	0.40	0.35	0.32	0.39	0.38	0.37	41	0.35	0.36
ZINC	16	21	17	12	16	19	1400	20	22

Table A-12b Analytical Results for TAL Metals in Fish Tissue Samples Collected from the Background Location

Sample ID: / Date: / Analyte	BG1-LMB-01 5/21/2015	BG1-BLU-C01 5/21/2015	BG1-CRA-C01 5/21/2015	BG1-PUM-C01 5/21/2015	BG1-ROC-C01 5/21/2015
Metals, mg/kg					
ALUMINUM	1.8 J	15	4.5	23	7.9
ANTIMONY	ND	ND	ND	ND	ND
ARSENIC	0.058 J	0.16	0.20	0.19	0.27
BARIUM	0.18 J	1.1	1.8	0.85 J	2.5
BERYLLIUM	ND	ND	ND	ND	ND
CADMIUM	ND	ND	ND	ND	0.0076 J
CALCIUM	3000	13000	15000	12000	20000
CHROMIUM, TOTAL	0.31	0.20	1.3	0.37	0.19 J
COBALT	0.0071 J	0.029 J	0.031 J	0.034 J	0.023 J
COPPER	1.1	0.75	2.1	1.3	1.7
IRON	9.9	40	48	63	26
LEAD	0.031 J	0.071 J	0.073 J	0.14	0.091 J
MAGNESIUM	300	450	490	450	580
MANGANESE	0.60	10	6.2	7.6	4.6
MERCURY	0.16	ND	ND	ND	0.052 J
NICKEL	0.088 J	0.089 J	0.51	0.12	0.077 J
POTASSIUM	3300	2600	2800	2800	2600
SELENIUM	0.26 J	0.37 J	0.23 J	0.4 J	0.44 J
SILVER	ND	ND	ND	ND	ND
SODIUM	650	1000	1200	1100	1400
THALLIUM	ND	ND	ND	ND	ND
VANADIUM	0.43	0.43	0.40	0.43	0.40
ZINC	9.0	22	26	22	24

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

Table A-12c Analytical Results for Semi-volatiles in Fish Tissue Samples Collected from the Background Location

Analyte / Sample ID: / Date:	BG1-CAR-01 5/21/2015	BG1-CAR-02 5/21/2015	BG1-CAR-03 5/21/2015	BG1-CAR-04 5/21/2015	BG1-CAR-05 5/21/2015	BG1-CAR-06 5/21/2015	BG1-CAR-07 5/21/2015	BG1-CAR-08 5/21/2015
Semi-volatile Compounds, mg/kg								
1,2,4,5-TETRACHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
2,3,4,6-TETRACHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-TRICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-TRICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DICHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DIMETHYLPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DINITROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DINITROTOLUENE	ND	ND	ND	ND	ND	ND	ND	ND
2,6-DINITROTOLUENE	ND	ND	ND	ND	ND	ND	ND	ND
2-CHLORONAPHTHALENE	ND	ND	ND	ND	ND	ND	ND	ND
2-CHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
2-METHYLNAPHTHALENE	ND	ND	ND	ND	ND	ND	ND	ND
2-METHYLPHENOL (O-CRESOL)	ND	ND	ND	ND	ND	ND	ND	ND
2-NITROANILINE	ND	ND	ND	ND	ND	ND	ND	ND
2-NITROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
3- AND 4- METHYLPHENOL (TOTAL)	0.047 J	ND	ND	0.03 J	ND	ND	ND	0.052 J
3,3'-DICHLOROBENZIDINE	ND	ND	ND	ND	ND	ND	ND	ND
3-NITROANILINE	ND	ND	ND	ND	ND	ND	ND	ND
4,6-DINITRO-2-METHYLPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
4-BROMOPHENYL PHENYL ETHER	ND	ND	ND	ND	ND	ND	ND	ND
4-CHLORO-3-METHYLPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
4-CHLOROANILINE	ND	ND	ND	ND	ND	ND	ND	ND
4-CHLOROPHENYL PHENYL ETHER	ND	ND	ND	ND	ND	ND	ND	ND
4-NITROANILINE	ND	ND	ND	ND	ND	ND	ND	ND
4-NITROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
ACENAPHTHENE	ND	ND	ND	ND	ND	ND	ND	ND
ACENAPHTHYLENE	ND	ND	ND	ND	ND	ND	ND	ND
ACETOPHENONE	ND	ND	ND	ND	ND	ND	ND	ND
ANTHRACENE	ND	ND	ND	ND	ND	ND	ND	ND
ATRAZINE	ND	ND	ND	ND	ND	ND	ND	ND
BENZALDEHYDE	ND	ND	0.043 J	ND	0.061 J	0.06 J	ND	ND
BENZO(A)ANTHRACENE	ND	ND	ND	ND	ND	ND	ND	ND
BENZO(A)PYRENE	ND	ND	ND	ND	ND	ND	ND	ND
BENZO(B)FLUORANTHENE	ND	ND	ND	ND	ND	ND	ND	ND
BENZO(G,H,I)PERYLENE	ND	ND	ND	ND	ND	ND	ND	ND
BENZO(K)FLUORANTHENE	ND	ND	ND	ND	ND	ND	ND	ND
BENZYL BUTYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND
BIPHENYL (DIPHENYL)	ND	ND	ND	ND	ND	ND	ND	ND
BIS(2-CHLOROETHOXY) METHANE	ND	ND	ND	ND	ND	ND	ND	ND
BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL	ND	ND	ND	ND	ND	ND	ND	ND
BIS(2-CHLOROISOPROPYL) ETHER	ND	ND	ND	ND	ND	ND	ND	ND
BIS(2-ETHYLHEXYL) PHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND

Table A-12c Analytical Results for Semi-volatiles in Fish Tissue Samples Collected from the Background Location

Analyte	Sample ID: BG1-CAR-09 Date: 5/21/2015	BG1-LMB-01 5/21/2015	BG1-BLU-C01 5/21/2015	BG1-CRA-C01 5/21/2015	BG1-PUM-C01 5/21/2015	BG1-ROC-C01 5/21/2015
Semi-volatile Compounds, mg/kg						
1,2,4,5-TETRACHLOROBENZENE	ND	ND	ND	ND	ND	ND
2,3,4,6-TETRACHLOROPHENOL	ND	ND	ND	ND	ND	ND
2,4,5-TRICHLOROPHENOL	ND	ND	ND	ND	ND	ND
2,4,6-TRICHLOROPHENOL	ND	ND	ND	ND	ND	ND
2,4-DICHLOROPHENOL	ND	ND	ND	ND	ND	ND
2,4-DIMETHYLPHENOL	ND	ND	ND	ND	ND	ND
2,4-DINITROPHENOL	ND	ND	ND	ND	ND	ND
2,4-DINITROTOLUENE	ND	ND	ND	ND	ND	ND
2,6-DINITROTOLUENE	ND	ND	ND	ND	ND	ND
2-CHLORONAPHTHALENE	ND	ND	ND	ND	ND	ND
2-CHLOROPHENOL	ND	ND	ND	ND	ND	ND
2-METHYLNAPHTHALENE	ND	ND	ND	ND	ND	ND
2-METHYLPHENOL (O-CRESOL)	ND	ND	ND	ND	ND	ND
2-NITROANILINE	ND	ND	ND	ND	ND	ND
2-NITROPHENOL	ND	ND	ND	ND	ND	ND
3- AND 4- METHYLPHENOL (TOTAL)	ND	ND	0.047 J	0.23 J	ND	ND
3,3'-DICHLOROBENZIDINE	ND	ND	ND	ND	ND	ND
3-NITROANILINE	ND	ND	ND	ND	ND	ND
4,6-DINITRO-2-METHYLPHENOL	ND	ND	ND	ND	ND	ND
4-BROMOPHENYL PHENYL ETHER	ND	ND	ND	ND	ND	ND
4-CHLORO-3-METHYLPHENOL	ND	ND	ND	ND	ND	ND
4-CHLOROANILINE	ND	ND	ND	ND	ND	ND
4-CHLOROPHENYL PHENYL ETHER	ND	ND	ND	ND	ND	ND
4-NITROANILINE	ND	ND	ND	ND	ND	ND
4-NITROPHENOL	ND	ND	ND	ND	ND	ND
ACENAPHTHENE	ND	ND	ND	ND	ND	ND
ACENAPHTHYLENE	ND	ND	ND	ND	ND	ND
ACETOPHENONE	ND	ND	0.045 J	0.041 J	0.042 J	ND
ANTHRACENE	ND	ND	ND	ND	ND	ND
ATRAZINE	ND	ND	ND	ND	ND	ND
BENZALDEHYDE	ND	ND	0.041 J	ND	0.064 J	ND
BENZO(A)ANTHRACENE	ND	ND	ND	ND	ND	ND
BENZO(A)PYRENE	ND	ND	ND	ND	ND	ND
BENZO(B)FLUORANTHENE	ND	ND	ND	ND	ND	ND
BENZO(G,H,I)PERYLENE	ND	ND	ND	ND	ND	ND
BENZO(K)FLUORANTHENE	ND	ND	ND	ND	ND	ND
BENZYL BUTYL PHTHALATE	ND	ND	ND	ND	ND	ND
BIPHENYL (DIPHENYL)	ND	ND	ND	ND	ND	ND
BIS(2-CHLOROETHOXY) METHANE	ND	ND	ND	ND	ND	ND
BIS(2-CHLOROETHYL) ETHER (2-CHLOROETHYL	ND	ND	ND	ND	ND	ND
BIS(2-CHLOROISOPROPYL) ETHER	ND	ND	ND	ND	ND	ND
BIS(2-ETHYLHEXYL) PHTHALATE	ND	ND	ND	ND	ND	ND

Table A-12c Analytical Results for Semi-volatiles in Fish Tissue Samples Collected from the Background Location

Analyte	Sample ID: BG1-CAR-01 Date: 5/21/2015	BG1-CAR-02 5/21/2015	BG1-CAR-03 5/21/2015	BG1-CAR-04 5/21/2015	BG1-CAR-05 5/21/2015	BG1-CAR-06 5/21/2015	BG1-CAR-07 5/21/2015	BG1-CAR-08 5/21/2015
CAPROLACTAM	ND	ND	ND	ND	ND	ND	ND	ND
CARBAZOLE	ND	ND	ND	ND	ND	ND	ND	ND
CHRYSENE	ND	ND	ND	ND	ND	ND	ND	ND
DIBENZ(A,H)ANTHRACENE	ND	ND	ND	ND	ND	ND	ND	ND
DIBENZOFURAN	ND	ND	ND	ND	ND	ND	ND	ND
DIETHYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND
DIMETHYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND
DI-N-BUTYL PHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND
DI-N-OCTYLPHTHALATE	ND	ND	ND	ND	ND	ND	ND	ND
FLUORANTHENE	ND	ND	ND	ND	ND	ND	ND	ND
FLUORENE	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROBUTADIENE	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROCYCLOPENTADIENE	ND	ND	ND	ND	ND	ND	ND	ND
HEXACHLOROETHANE	ND	ND	ND	ND	ND	ND	ND	ND
INDENO(1,2,3-C,D)PYRENE	ND	ND	ND	ND	ND	ND	ND	ND
ISOPHORONE	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	ND	ND	ND	ND	ND	ND	ND	ND
NITROBENZENE	ND	ND	ND	ND	ND	ND	ND	ND
N-NITROSODI-N-PROPYLAMINE	ND	ND	ND	ND	ND	ND	ND	ND
N-NITROSODIPHENYLAMINE	ND	ND	ND	ND	ND	ND	ND	ND
PENTACHLOROPHENOL	ND	ND	ND	ND	ND	ND	ND	ND
PHENANTHRENE	ND	ND	ND	ND	ND	ND	ND	ND
PHENOL	ND	ND	ND	ND	ND	ND	0.055	0.038 J
PYRENE	ND	ND	ND	ND	ND	ND	ND	ND

Table A-12c Analytical Results for Semi-volatiles in Fish Tissue Samples Collected from the Background Location

Analyte	Sample ID: BG1-CAR-09 Date: 5/21/2015	BG1-LMB-01 5/21/2015	BG1-BLU-C01 5/21/2015	BG1-CRA-C01 5/21/2015	BG1-PUM-C01 5/21/2015	BG1-ROC-C01 5/21/2015
CAPROLACTAM	ND	ND	ND	ND	ND	ND
CARBAZOLE	ND	ND	ND	ND	ND	ND
CHRYSENE	ND	ND	ND	ND	ND	ND
DIBENZ(A,H)ANTHRACENE	ND	ND	ND	ND	ND	ND
DIBENZOFURAN	ND	ND	ND	ND	ND	ND
DIETHYL PHTHALATE	ND	ND	ND	ND	ND	ND
DIMETHYL PHTHALATE	ND	ND	ND	ND	ND	ND
DI-N-BUTYL PHTHALATE	ND	ND	ND	ND	ND	ND
DI-N-OCTYLPHTHALATE	ND	ND	ND	ND	ND	ND
FLUORANTHENE	ND	ND	ND	ND	ND	ND
FLUORENE	ND	ND	ND	ND	ND	ND
HEXACHLOROBENZENE	ND	ND	ND	ND	ND	ND
HEXACHLOROBUTADIENE	ND	ND	ND	ND	ND	ND
HEXACHLOROCYCLOPENTADIENE	ND	ND	ND	ND	ND	ND
HEXACHLOROETHANE	ND	ND	ND	ND	ND	ND
INDENO(1,2,3-C,D)PYRENE	ND	ND	ND	ND	ND	ND
ISOPHORONE	ND	ND	ND	ND	ND	ND
NAPHTHALENE	ND	ND	ND	ND	ND	ND
NITROBENZENE	ND	ND	ND	ND	ND	ND
N-NITROSODI-N-PROPYLAMINE	ND	ND	ND	ND	ND	ND
N-NITROSODIPHENYLAMINE	ND	ND	ND	ND	ND	ND
PENTACHLOROPHENOL	ND	ND	ND	ND	ND	ND
PHENANTHRENE	ND	ND	ND	ND	ND	ND
PHENOL	ND	0.33	0.043 J	0.097	0.054	0.07
PYRENE	ND	ND	ND	ND	ND	ND

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

Table A-12d Analytical Results for Pesticides in Fish Tissue Samples Collected from the Background Location

Sample ID: / Date: / Analyte	BG1-CAR-01 5/21/2015	BG1-CAR-02 5/21/2015	BG1-CAR-03 5/21/2015	BG1-CAR-04 5/21/2015	BG1-CAR-05 5/21/2015	BG1-CAR-06 5/21/2015	BG1-CAR-07 5/21/2015	BG1-CAR-08 5/21/2015	BG1-CAR-09 5/21/2015
Pesticides, mg/kg									
ALDRIN	0.000044 J	0.000087 J	0.000045 J	0.000037 J	ND	0.000066 J	0.000036 J	0.00007 J	0.000058 J
ALPHA BHC (ALPHA	0.00011	0.000014 J	0.000013 J	0.000024 J	0.000024 J	0.000028 J	0.000014 J	0.0002 J	0.000043 J
ALPHA ENDOSULFAN	0.00013 J	0.000036 J	0.00028 J	0.00018	0.000054 J	0.0001	0.00012	0.00036	0.00013 J
BETA BHC (BETA	0.00051 J	0.00017 J	0.000052 J	0.00034 J	ND	ND	ND	0.000061 J	0.000063 J
BETA ENDOSULFAN	0.00011 J	0.00002 J	0.00016 J	0.0001 J	0.00007 J	0.00011 J	0.000084 J	0.00031 J	0.000085 J
CIS-CHLORDANE	0.001	0.0002 J	0.0014	0.00075	0.00058	0.00053	0.00055	0.002	0.00062
DELTA BHC (DELTA	0.00032	0.000025 J	0.00023 J	ND	0.00017 J	ND	0.000061 J	0.00036 J	ND
DIELDRIN	0.00054 J	0.000093 J	0.0007 J	0.00043 J	0.00029 J	0.00038 J	0.00032 J	0.0012 J	0.0004 J
ENDOSULFAN SULFATE	0.00056	0.000098 J	0.00087	0.00059	0.00049	0.00051	0.00047	0.0013	0.00061
ENDRIN	0.0026 J	0.00074	0.0044	0.0031	0.0026 J	0.0026	0.0025	0.0069	0.0032 J
ENDRIN ALDEHYDE	0.00023 J	0.000055 J	0.00036 J	0.00028 J	0.00016 J	0.00017 J	0.00022 J	0.00073 J	0.00023 J
ENDRIN KETONE	0.00063 J	0.0002 J	0.001 J	0.0008 J	0.00055 J	0.00052 J	0.00052 J	0.0015 J	0.00076 J
GAMMA BHC (LINDANE)	0.00022 J	0.00015	0.00005 J	0.00016 J	0.00013 J	ND	ND	0.00019 J	ND
HEPTACHLOR	ND	0.000054 J	ND	ND	ND	0.000043 J	0.000039 J	0.000069 J	ND
HEPTACHLOR EPOXIDE	0.00082 J	0.00018 J	0.0016 J	0.00098 J	0.00064 J	0.00045 J	0.00055 J	0.0018 J	0.00072 J
METHOXYCHLOR	0.00024 J	0.000051 J	0.00057 J	0.00036 J	0.00019 J	0.00022 J	0.00023 J	0.00071 J	0.0002 J
P,P'-DDD	0.0032 J	0.00043 J	0.0057 J	0.0032 J	0.0024 J	0.002 J	0.0021 J	0.0071 J	0.0024 J
P,P'-DDE	0.026	0.0037	0.047	0.023	0.064	0.045	0.019	0.085	0.064
P,P'-DDT	0.0045	0.0011	0.00027 J	0.0052	0.0037	0.004	0.0039	0.011	0.0047
TOXAPHENE	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-CHLORDANE	0.0023 J	0.00062 J	0.0043	0.0027 J	0.0019 J	0.0018 J	0.0019 J	0.0057	0.0022 J

Table A-12d Analytical Results for Pesticides in Fish Tissue Samples Collected from the Background Location

Sample ID: / Date: / Analyte	BG1-LMB-01 5/21/2015	BG1-BLU-C01 5/21/2015	BG1-CRA-C01 5/21/2015	BG1-PUM-C01 5/21/2015	BG1-ROC-C01 5/21/2015
Pesticides, mg/kg					
ALDRIN	0.000049 J	0.000028 J	0.000046 J	0.00029 J	0.00015 J
ALPHA BHC (ALPHA	ND	0.00016 J	0.000055 J	0.00011 J	0.00015 J
ALPHA ENDOSULFAN	ND	0.000058 J	ND	0.00015 J	0.00023 J
BETA BHC (BETA	0.000047 J	0.00022 J	0.000023 J	0.00041 J	0.00033 J
BETA ENDOSULFAN	ND	0.000035 J	ND	0.00027 J	0.00014 J
CIS-CHLORDANE	0.000041 J	0.00057 J	ND	0.00068 J	0.0011 J
DELTA BHC (DELTA	ND	0.00021 J	0.000041 J	0.00014 J	0.00016 J
DIELDRIN	0.000033 J	0.00049 J	0.000044 J	0.00065 J	0.00075 J
ENDOSULFAN SULFATE	0.000064 J	0.00047 J	0.00003 J	0.00062 J	0.00089 J
ENDRIN	0.00035 J	0.0025 J	0.00032	0.0026 J	0.0045 J
ENDRIN ALDEHYDE	0.000017 J	0.0002 J	0.000037 J	0.0004 J	0.00039 J
ENDRIN KETONE	0.000084 J	0.00048 J	0.000066 J	0.0006 J	0.00083 J
GAMMA BHC (LINDANE)	0.00019 J	0.00012 J	ND	0.00023 J	0.0002 J
HEPTACHLOR	ND	ND	0.000029 J	0.00026 J	0.000062 J
HEPTACHLOR EPOXIDE	0.0001 J	0.0013 J	0.000064 J	0.00099 J	0.0013 J
METHOXYCHLOR	ND	0.00019 J	ND	0.00055 J	0.0002 J
P,P'-DDD	0.00015 J	0.0018 J	0.0015	0.0022 J	0.0021 J
P,P'-DDE	0.0013 J	0.031	0.013	0.018	0.021
P,P'-DDT	0.00037 J	0.0038 J	0.00047	0.0042 J	0.0072 J
TOXAPHENE	ND	ND	ND	ND	ND
TRANS-CHLORDANE	ND	0.002 J	ND	0.0023 J	0.0037 J

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

Table A-12e Analytical Results for PCB Congeners in Fish Tissue Samples Collected from the Background Location

Analyte	Sample ID: BG1-LMB-01 Date: 5/21/2015	Sample ID: BG1-PUM-C01 Date: 5/21/2015
PCB Congeners, ng/kg		
DECACHLOROBIPHENYL (PCB 209)	550	1100
DICHLOROBIPHENYL; 2,4'- (PCB 8)	27 EMPCJ	190 EMPCJ
HEPTACHLOROBIPHENYL; 2,2',3,3',4,4',5- (PCB 170)	540	1400
HEPTACHLOROBIPHENYL; 2,2',3,4,4',5,5'- (PCB 180)	1700 J	3600 J
HEPTACHLOROBIPHENYL; 2,2',3,4',5,5',6- (PCB 187)	1200	3900
HEPTACHLOROBIPHENYL; 2,3,3',4,4',5,5'- (PCB 189)	17 EMPCJ	61 J
HEXACHLOROBIPHENYL; 2,2',3,3',4,4'- (PCB 128)	390 J	1400 J
HEXACHLOROBIPHENYL; 2,2',3,4,4',5'- (PCB 138)	3100 J	10000 J
HEXACHLOROBIPHENYL; 2,2',4,4',5,5'- (PCB 153)	3300 J	9600 J
HEXACHLOROBIPHENYL; 2,3,3',4,4',5- (PCB 156)	270 J	840 J
HEXACHLOROBIPHENYL; 2,3,3',4,4',5'- (PCB 157)	270 J	840 J
HEXACHLOROBIPHENYL; 2,3',4,4',5,5'- (PCB 167)	110	290
HEXACHLOROBIPHENYL; 3,3',4,4',5,5'- (PCB 169)	ND	ND
NONACHLOROBIPHENYL; 2,2',3,3',4,4',5,5',6- (PCB 206)	780	1600
OCTACHLOROBIPHENYL; 2,2',3,3',4,4',5,6- (PCB 195)	100 EMPCJ	230
PENTACHLOROBIPHENYL; 2,2',4,5,5'- (PCB 101)	2700 J	11000 J
PENTACHLOROBIPHENYL; 2,3,3',4,4'- (PCB 105)	700	2400
PENTACHLOROBIPHENYL; 2,3,4,4',5- (PCB 114)	81	350
PENTACHLOROBIPHENYL; 2,3',4,4',5- (PCB 118)	2500	9000
PENTACHLOROBIPHENYL; 2',3,4,4',5- (PCB 123)	66 EMPCJ	130 EMPCJ
PENTACHLOROBIPHENYL; 3,3',4,4',5- (PCB 126)	3.3 EMPCJ	ND
TETRACHLOROBIPHENYL; 2,2',3,5'- (PCB 44)	2100 J	7700 J
TETRACHLOROBIPHENYL; 2,2',5,5'- (PCB 52)	2600	10000
TETRACHLOROBIPHENYL; 2,3',4,4'- (PCB 66)	1500	7500
TETRACHLOROBIPHENYL; 3,3',4,4'- (PCB 77)	31 EMPCJ	120
TETRACHLOROBIPHENYL; 3,4,4',5- (PCB 81)	4.5 EMPCJ	15 EMPCJ
TRICHLOROBIPHENYL; 2,2',5- (PCB 18)	150 J	640 J
TRICHLOROBIPHENYL; 2,4,4'- (PCB 28)	630 J	3000 J

Key:

Qualifiers

J = Estimated value

EMPC = Estimated Maximum Possible Concentration

Other

ND = Sample is "non-detect"

ng/kg = Nanograms per kilogram

Table A-12f Analytical Results for Dioxins/Furans in Fish Tissue Samples Collected from the Background Location

Analyte	Sample ID: / Date:	BG1-LMB-01 5/21/2015	BG1-PUM-C01 5/21/2015
Dioxins/Furans, ng/kg			
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN		ND	0.27 EMPCJ
1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN		ND	0.59 J
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN		ND	ND
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN		0.26 EMPCJ	0.61 EMPCJ
1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN		ND	0.12 EMPCJ
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN		1.7 EMPCJ	5.2 EMPCJ
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN		ND	0.074 EMPCJ
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN		ND	ND
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN		0.037 EMPCJ	ND
1,2,3,7,8-PENTACHLORODIBENZOFURAN		ND	ND
1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN		0.11 EMPCJ	0.17 EMPCJ
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN		ND	ND
2,3,4,7,8-PENTACHLORODIBENZOFURAN		ND	0.11 EMPCJ
2,3,7,8-TETRACHLORODIBENZOFURAN		0.06 EMPCJ	0.11 EMPCJ
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN		0.1 EMPCJ	0.2 EMPCJ
OCTACHLORODIBENZOFURAN		0.061 EMPCJ	0.33 J
OCTACHLORODIBENZO-P-DIOXIN		1.9 J	8.4 J

Key:

Qualifiers

J = Estimated value

EMPC = Estimated Maximum Possible Concentration

Other

ND = Sample is "non-detect"

ng/kg = Nanograms per kilogram

Table A-13a Analytical Results for PCB Aroclors in Earthworm Tissue Samples Collected in Soil from the Creek Channel

Analyte / Sample ID:	OU2-SS15	OU2-SS16	OU2-SS17	OU2-SS18	OU2-SS19	OU2-SS20	OU2-SS21	OU2-SS22	OU2-SS23	OU2-SS24
Date:	3/7/2016	3/7/2016	3/7/2016	3/7/2016	3/7/2016	3/7/2016	3/7/2016	3/7/2016	3/7/2016	3/7/2016
PCB Aroclors, mg/kg										
PCB-1016 (AROCLOR 1016)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1221 (AROCLOR 1221)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1232 (AROCLOR 1232)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1242 (AROCLOR 1242)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1248 (AROCLOR 1248)	ND	ND	0.62 J	ND	ND	4.9 J	ND	0.012 J	ND	ND
PCB-1254 (AROCLOR 1254)	ND	0.015 J	0.98 J	0.0078 J	0.0039 J	4.0 J	0.0045 J	0.0092 J	0.022 J	0.30 J
PCB-1260 (AROCLOR 1260)	0.011	0.043	0.75 J	ND	0.0053 J	ND	0.0082 J	0.0081 J	0.025	0.40 J
PCB-1268 (AROCLOR 1268)	0.0036 J	0.0089 J	0.17 J	ND	ND	ND	ND	ND	ND	0.12 J
PCB, Total	0.015 J	0.067 J	2.5 J	0.0078 J	0.0092 J	8.9 J	0.013 J	0.029 J	0.047 J	0.82 J

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

Table A-13b Analytical Results for Metals in Earthworm Tissue Samples Collected in Soil from the Creek Channel

Sample ID:	OU2-SS15	OU2-SS16	OU2-SS17	OU2-SS18	OU2-SS19	OU2-SS20	OU2-SS21	OU2-SS22	OU2-SS23	OU2-SS24
Date:	3/7/2016	3/7/2016	3/7/2016	3/7/2016	3/7/2016	3/7/2016	3/7/2016	3/7/2016	3/7/2016	3/7/2016
Analyte										
Metals, mg/kg										
ANTIMONY	0.028	0.017	0.13	0.0080	0.0050	0.070	0.024	0.012	0.016	0.93
ARSENIC	5.2	3.1	1.4	2.2	1.5	2.3	2.0	1.8	1.6	3.8
CADMIUM	0.38	0.74	0.45	0.41	0.30	0.61	0.57	0.39	0.48	1.2
CHROMIUM, TOTAL	0.31	0.18	0.23	0.075	0.071	0.22	0.32	0.13	0.070	2.3
COPPER	2.7 J	3.7 J	23.0 J	1.9 J	2.4 J	4.2 J	3.9 J	2.4 J	2.8 J	18.3 J
LEAD	2.4	1.0	4.7	0.33	0.53	12.0	2.5	1.2	0.86	34.8
MERCURY	0.072	0.13	0.24	0.025	0.037	0.21	0.038	0.044	0.057	2.2
NICKEL	0.74	0.31	1.1	0.23	0.50	0.36	0.53	0.21	0.21	1.9
SELENIUM	1.0	1.1	0.77	1.1	0.78	1.0	0.75	0.81	0.85	0.78
THALLIUM	0.059	0.032	0.021	0.041	0.020	0.15	0.031	ND	0.024	0.11
ZINC	20.1	20.5	29.4	17.4	17.6	21.4	20.4	17.6	17.9	55.8

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

Table A-13c Analytical Results for PAHs in Earthworm Tissue Samples Collected in Soil from the Creek Channel

Analyte / Sample ID:	OU2-SS15	OU2-SS16	OU2-SS17	OU2-SS18	OU2-SS19	OU2-SS20	OU2-SS21	OU2-SS22	OU2-SS23	OU2-SS24
Date:	3/7/2016	3/7/2016	3/7/2016	3/7/2016	3/7/2016	3/7/2016	3/7/2016	3/7/2016	3/7/2016	3/7/2016
Semi-volatile Compounds, mg/kg										
2-METHYLNAPHTHALENE	0.00086 J	0.0011 J	0.00040 J	0.00069 J	ND	0.0056	0.0087	0.0011 J	ND	0.00077 J
ACENAPHTHENE	0.00084 J	0.0021 J	ND	0.00051 J	0.00094 J	0.0063	0.019	0.00092 J	0.00071 J	0.00063 J
ACENAPHTHYLENE	0.00090 J	0.016	ND	ND	0.00064 J	0.0027 J	0.010	0.0026 J	ND	0.0078
ANTHRACENE	0.0014 J	0.031	ND	ND	0.0023 J	0.029	0.058	0.0026 J	ND	0.0028 J
BENZO(A)ANTHRACENE	0.013	0.58	0.0078	0.0058	0.032	0.12	0.11	0.026	0.014	0.025
BENZO(A)PYRENE	0.0054	0.36	0.00069 J	ND	0.011	0.055	0.065	0.013	0.0027 J	0.035
BENZO(B)FLUORANTHENE	0.0089	0.65	0.0049 J	0.0020 J	0.019	0.075	0.10	0.026	0.0062	0.057
BENZO(G,H,I)PERYLENE	0.0035 J	0.093	0.0038 J	ND	0.0038 J	0.025	0.037	0.0061	0.00096 J	0.028
BENZO(K)FLUORANTHENE	0.0056 J	0.35	0.0025 J	0.0040 J	0.015 J	0.043	0.049	0.014 J	0.0056 J	0.029
BIPHENYL (DIPHENYL)	ND	0.00032 J	ND	ND	0.00076 J	0.0010 J	0.0019 J	0.00071 J	0.00081 J	0.00039 J
CARBAZOLE	0.0013 J	0.0090	0.0021 J	ND	0.0015 J	0.013	0.026	0.0020 J	ND	0.0016 J
CHRYSENE	0.015	1.0	0.012	0.0067	0.044	0.14	0.12	0.046	0.020	0.054
DIBENZ(A,H)ANTHRACENE	0.00071 J	0.061	ND	ND	0.0015 J	0.0080	0.011	0.0017 J	ND	0.0090
DIBENZOFURAN	0.00062 J	0.0018 J	ND	0.00038 J	0.00092 J	0.0046 J	0.026	0.00094 J	ND	0.00058 J
FLUORANTHENE	0.016 J	0.41	0.0033 J	0.0024 J	0.030 J	0.24	0.29	0.037 J	0.0049 J	0.011 J
FLUORENE	ND	0.0034 J	ND	ND	0.00074 J	0.0064	0.052	0.0011 J	ND	0.00050 J
INDENO(1,2,3-C,D)PYRENE	0.0040 J	0.160	0.0012 J	ND	0.0054	0.030	0.048	0.0075	0.0011 J	0.037
NAPHTHALENE	0.0011 J	0.0014 J	0.00071 J	0.00065 J	0.00084 J	0.0040 J	0.0093	0.0014 J	0.00090 J	0.0012 J
PAH, HMW Total	0.085 J	4.0	0.040	0.023	0.19 J	0.91	0.99	0.21 J	0.062 J	0.30 J
PAH, LMW Total	0.013	0.10 J	0.0042	0.0039	0.015	0.15 J	0.40	0.025 J	0.0036	0.018 J
PAH, Mixture	0.098 J	4.1 J	0.044	0.027	0.21 J	1.1 J	1.4	0.24 J	0.065 J	0.32 J
PHENANTHRENE	0.0076	0.049	0.0031 J	0.002 J	0.010	0.10	0.24	0.015	0.0020 J	0.0043 J
PYRENE	0.013	0.36	0.0037 J	0.0018 J	0.031	0.17	0.16	0.035	0.0063	0.012

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

Table A-13d Analytical Results for Pesticides in Earthworm Tissue Samples Collected in Soil from the Creek Channel

Analyte / Sample ID: / Date:	OU2-SS15 3/7/2016	OU2-SS16 3/7/2016	OU2-SS17 3/7/2016	OU2-SS18 3/7/2016	OU2-SS19 3/7/2016	OU2-SS20 3/7/2016	OU2-SS21 3/7/2016	OU2-SS22 3/7/2016	OU2-SS23 3/7/2016	OU2-SS24 3/7/2016
Pesticides, mg/kg										
ALDRIN	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	ND	ND	0.00055 J	ND	ND	ND	ND	ND	ND	ND
ALPHA ENDOSULFAN	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BETA ENDOSULFAN	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-CHLORDANE	ND	0.00054 J	ND	ND	ND	ND	ND	ND	ND	ND
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DIELDRIN	0.0034	0.018 J	ND	ND	ND	ND	ND	0.00028 J	0.00094 J	ND
ENDOSULFAN SULFATE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ENDRIN	0.00060 J	ND	ND	ND	ND	ND	ND	0.00057 J	ND	ND
ENDRIN ALDEHYDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ENDRIN KETONE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GAMMA BHC (LINDANE)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEPTACHLOR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HEPTACHLOR EPOXIDE	ND	ND	0.00083 J	ND	ND	ND	ND	ND	ND	ND
METHOXYCHLOR	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
P,P'-DDD	ND	0.00080 J	ND	ND	ND	ND	ND	ND	ND	ND
P,P'-DDE	0.0083	0.0020	ND	0.00078 J	0.0014	ND	0.011	0.0019	0.0096	0.015 J
P,P'-DDT	0.0071	ND	ND	ND	ND	ND	0.0078	0.0036	ND	ND
DDT, Total	0.015	0.0028	ND	0.00078	0.0014	ND	0.019	0.0055	0.0096	0.015 J
TOXAPHENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-CHLORDANE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

Table A-14a Analytical Results for PCB Aroclors in Lumbriculus Tissue Samples Collected from the Creek Channel

Sample ID: / Date: / Analyte	OU2-SED04 3/10/2016	OU2-SED05 3/10/2016	OU2-SED06 3/10/2016	OU2-SED07 3/10/2016	OU2-SED08 3/10/2016	OU2-SED09 3/10/2016
PCB Aroclors, mg/kg						
PCB-1016 (AROCLOR 1016)	ND	ND	ND	ND	ND	ND
PCB-1221 (AROCLOR 1221)	ND	ND	ND	ND	ND	ND
PCB-1232 (AROCLOR 1232)	ND	ND	ND	ND	ND	ND
PCB-1242 (AROCLOR 1242)	0.069 J	0.033 J	ND	0.88 J	2.3 J	3.1 J
PCB-1248 (AROCLOR 1248)	ND	ND	0.37 J	ND	ND	ND
PCB-1254 (AROCLOR 1254)	0.040 J	0.024 J	0.18 J	0.35 J	1.1 J	ND
PCB-1260 (AROCLOR 1260)	ND	ND	ND	ND	ND	ND
PCB-1268 (AROCLOR 1268)	ND	ND	ND	ND	ND	ND
PCB, Total	0.11 J	0.057 J	0.55 J	1.2 J	3.4 J	3.1 J

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

Table A-14b Analytical Results for Metals in Lumbriculus Tissue Samples Collected from the Creek Channel

Sample ID: / Date: / Analyte	OU2-SED04 3/10/2016	OU2-SED05 3/10/2016	OU2-SED06 3/10/2016	OU2-SED07 3/10/2016	OU2-SED08 3/10/2016	OU2-SED09 3/10/2016
Metals, mg/kg						
ANTIMONY	0.027	0.021	0.012	0.030	0.030	0.021
ARSENIC	0.65	0.40	0.76	0.71	0.81	0.95
CADMIUM	0.14	0.15	0.05	0.16	0.11	0.91
CHROMIUM, TOTAL	0.37	0.35	0.28	0.31	0.31	0.24
COPPER	10.6 J	10.4 J	6.39 J	9.2 J	15.9 J	7.8 J
LEAD	2.3	2.1	2.5	2.6	2.6	1.1
MERCURY	0.0068	0.0050	0.0042	0.0086	0.012	0.0066
NICKEL	0.52	0.46	0.58	0.45	0.44	0.38
SELENIUM	0.56	0.52	0.63	0.58	0.60	0.54
THALLIUM	0.026	ND	ND	ND	ND	ND
ZINC	50.0	52.9	52.7	57.6	58.6	51.7

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

Table A-14c Analytical Results for PAHs in Lumbriculus Tissue Samples Collected from the Creek Channel

Analyte	Sample ID: OU2-SED04 Date: 3/10/2016	OU2-SED05 3/10/2016	OU2-SED06 3/10/2016	OU2-SED07 3/10/2016	OU2-SED08 3/10/2016	OU2-SED09 3/10/2016
Semi-volatile Compounds, mg/kg						
2-METHYLNAPHTHALENE	0.00064 J	0.00081 J	0.0016 J	0.0018 J	0.00066 J	ND
ACENAPHTHENE	0.0018 J	0.0011 J	0.0026 J	0.0061	0.0037 J	0.0011 J
ACENAPHTHYLENE	0.0019 J	0.0034 J	0.0039 J	0.0032 J	0.0016 J	ND
ANTHRACENE	0.0092	0.0039 J	0.012	0.014	0.0049 J	0.0042 J
BENZO(A)ANTHRACENE	0.057	0.036	0.11	0.10	0.040	0.041
BENZO(A)PYRENE	0.048	0.049	0.10	0.090	0.043	0.042
BENZO(B)FLUORANTHENE	0.14	0.11	0.24	0.19	0.11	0.13
BENZO(G,H,I)PERYLENE	0.042	0.046	0.080	0.062	0.046	0.039
BENZO(K)FLUORANTHENE	0.048	0.043	0.087	0.077	0.041	0.043
BIPHENYL (DIPHENYL)	ND	ND	0.00084 J	0.00074 J	ND	ND
CARBAZOLE	0.0028 J	0.0036 J	0.0070	0.0051	0.0024 J	0.0031 J
CHRYSENE	0.15	0.095	0.17	0.17	0.055	0.11
DIBENZ(A,H)ANTHRACENE	0.0064	0.0067	0.015	0.013	0.0058	0.0058
DIBENZOFURAN	0.0017 J	0.00092 J	0.0016 J	0.0025 J	0.00088 J	0.00079 J
FLUORANTHENE	0.27	0.10	0.42	0.32	0.12	0.15
FLUORENE	0.0034 J	0.0014 J	0.0036 J	0.0056	0.0022 J	0.0015 J
INDENO(1,2,3-C,D)PYRENE	0.034	0.041	0.077	0.061	0.033	0.032
NAPHTHALENE	0.00081 J	0.0013 J	0.0016 J	0.0023 J	0.00085 J	0.00048 J
PAH, HMW Total	0.99	0.62	1.6	1.3	0.59	0.72
PAH, LMW Total	0.043 J	0.032 J	0.066 J	0.080 J	0.026 J	0.024
PAH, Mixture	1.0 J	0.66 J	1.7 J	1.4 J	0.62 J	0.75
PHENANTHRENE	0.025	0.020	0.041	0.047	0.012	0.017
PYRENE	0.19	0.10	0.31	0.25	0.10	0.13

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

Table A-14d Analytical Results for Pesticides in Lumbriculus Tissue Samples Collected from the Creek Channel

Sample ID: / Date: / Analyte	OU2-SED04 3/10/2016	OU2-SED05 3/10/2016	OU2-SED06 3/10/2016	OU2-SED07 3/10/2016	OU2-SED08 3/10/2016	OU2-SED09 3/10/2016
Pesticides, mg/kg						
ALDRIN	ND	ND	ND	ND	ND	ND
ALPHA BHC (ALPHA	ND	ND	ND	ND	ND	ND
ALPHA ENDOSULFAN	0.00037 J	0.00027 J	0.0023	0.0050	0.014	0.0087
BETA BHC (BETA	ND	ND	ND	ND	ND	ND
BETA ENDOSULFAN	ND	ND	ND	ND	ND	ND
CIS-CHLORDANE	ND	ND	ND	0.00043 J	ND	ND
DELTA BHC (DELTA	ND	ND	ND	ND	ND	ND
DIELDRIN	ND	ND	ND	ND	ND	ND
ENDOSULFAN SULFATE	ND	ND	ND	ND	ND	ND
ENDRIN	ND	ND	0.00056 J	0.0011	ND	0.0012
ENDRIN ALDEHYDE	ND	ND	ND	ND	ND	ND
ENDRIN KETONE	ND	ND	ND	ND	ND	ND
GAMMA BHC (LINDANE)	ND	ND	ND	ND	ND	ND
HEPTACHLOR	ND	ND	ND	ND	ND	ND
HEPTACHLOR EPOXIDE	ND	ND	ND	ND	ND	ND
METHOXYCHLOR	ND	ND	ND	ND	ND	ND
P,P'-DDD	ND	ND	ND	ND	ND	0.00064 J
P,P'-DDE	0.0012	ND	ND	ND	ND	ND
P,P'-DDT	ND	ND	ND	ND	ND	ND
DDT, Total	0.0012	ND	ND	ND	ND	0.00064
TOXAPHENE	ND	ND	ND	ND	ND	ND
TRANS-CHLORDANE	ND	ND	ND	ND	ND	ND

Key:

Qualifiers

J = Estimated value

Other

ND = Sample is "non-detect"

mg/kg = Milligrams per kilogram

B Field Documentation

- Daily Report
- Purge Log
- Monitoring Well Construction Log/Soil Boring Log
- Trip Reports
- Photo Log

Please note that sample photos are provided on the attached CD.

Daily Report

Eighteenmile Creek Sampling and Analysis Sampling Activities	
Daily Activity Summary Report	
Date: 11-25-14	**Report No:** EMC-2014-01
Weather: Overcast, 29 to 36 Degrees F, windy/variable with gusts to 30mph, occasional sleet and drizzle.	

Personnel	Hrs.	Affiliation
(FTL) Bob Meyers	9	EE
(SSHO) Ben Cole	10	EE
(Sample Manager) Lynn Kalmbach	10	EE
(sampler) Larry Roedl	10	EE
(Project Manager) Marcia Galloway	2	EE

Sample Area	Task	Locations Addressed
Canal Corp. Properties	Background surface soil sampling	BG1-SS01 through BG1-SS07
Upson Park	Stake out surface soil sampling locations	OU2-SS01 through OU2-SS10

Field Tests Performed (Field Screening, Chemical Testing, etc.): Background surface soil samples collected per analyses listed in UFPQAPP, including one duplicate samples and one MS/MSD.

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions): Weather (i.e. the cold and the wind) made sampling progress slightly slower, but no significant delays. Unable to collect surface soil samples in Upson Park due to delays in sample bottle delivery caused by severe winter storm last week.

Problems Encountered And Deviations From Work Plan: One sample cooler did not arrive at the laboratory. Fed Ex is tracking the cooler. Team will evaluate once the cooler is received.

Written And Verbal Instruction By The Client: None.

Safety Issues: None.

Planned Activities For Next Work Day: Plan to complete Surface soil sampling (10 locations) in Upson Park on Monday next week (12/1/14). Also scheduled to perform 2 days of Geoprobe drilling and groundwater sampling next week on Thursday and Friday (12/4 and 12/5).

Remarks (Visitors, Completion of a field task, etc.): Completed Background surface soil sampling. No visitors.

Field Team Leader Signature: Robert A Meyer **Date:** 11/26/14

Eighteenmile Creek Sampling and Analysis Sampling Activities	
Daily Activity Summary Report	
Date: 12-01-14	**Report No:** EMC-2014-02
Weather: Overcast, 20 to 35 Degrees F, winds 10 to 15 mph from the west.	

Personnel	Hrs.	Affiliation
(FTL) Bob Meyers	10	EE
(SSHO) Ben Cole	11	EE
(Sample Manager) Lynn Kalmbach	10	EE

Sample Area	Task	Locations Addressed
Upson Park	Collect surface soil samples in Upson Park	OU2-SS01 through OU2-SS10

Field Tests Performed (Field Screening, Chemical Testing, etc.): Surface soil samples collected per analyses listed in UFP QAPP, including one duplicate samples and one MS/MSD.
Samples were collected at locations staked on November 24, 2014.

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions):
None.

Problems Encountered And Deviations From Work Plan: None.
We are waiting for laboratory assignment for dioxin and congener sample analysis. Samples are being iced on a daily basis.

Written And Verbal Instruction By The Client: None.

Safety Issues: None.

Planned Activities For Next Work Day: Scheduled to perform 2 days of Geoprobe drilling and groundwater/soil sampling on Thursday and Friday (12/4 and 12/5).

Remarks (Visitors, Completion of a field task, etc.): Completed collection of all soil samples in Upson Park. No visitors.

Field Team Leader Signature: **Date:** 12/2/14

Robert A Meyer

Eighteenmile Creek Sampling and Analysis Sampling Activities	
Daily Activity Summary Report	
Date: 12-04-14	**Report No:** EMC-2014-03
Weather: Mostly Sunny, 20 to 30 Degrees F, light variable winds.	

Personnel	Hrs.	Affiliation
(Task Leader) Bob Meyers	1	EE
(FTL/SSHO) Ben Cole	10	EE
(Sample Manager) Lynn Kalmbach	10	EE
(Sampler) Keith Pawlowski	10	EE

Sample Area	Task	Locations Addressed
Flintkote Plant – North end soil boring locations.	Collect subsurface soil samples from three soil borings (SB01 through SB03).	OU2-SB01 through OU2-SB03
Jackson Street	Collect groundwater samples from Geoprobe borings upgradient MW05, MW09, and MW14.	153 Jackson Street

Field Tests Performed (Field Screening, Chemical Testing, etc.): The three Geoprobe soil borings were completed at the north end of the Flintkote plant property (Designated OU2-SB01 through OU2-SB03. Three subsurface soil samples were collected from each of the borings and analyzed in accordance with the UFP QAPP, including one duplicate sample. Geoprobe refusal was encountered at 7.2' (SB01), 5.9' (SB02), and 5.4' (SB03). A minimum of three attempts to penetrate deeper were made at each SB location.

Collected one groundwater sample (VOCs Only) from 153 Jackson Street property. Four attempts were made to advance the Geoprobe deeper than 8.9 feet bgs. Groundwater was encountered in GP boring that was 8.4 feet deep, and water came up to 7.5 feet bgs.

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions):
Utility clearance was not completed 175 Jackson Street. Boring location will be cleared and geoprobed tomorrow.

Problems Encountered And Deviations From Work Plan: None.
We are waiting for laboratory assignment for dioxin and congener sample analysis. Samples are being iced on a daily basis.

Written And Verbal Instruction By The Client: None.

Safety Issues: None.

Planned Activities For Next Work Day: Complete the second of 2 days of Geoprobe drilling and groundwater/soil sampling tomorrow (Friday 12/5/14).

Remarks (Visitors, Completion of a field task, etc.):
Completed subsurface soil sampling (with Geoprobe) at the north end of the Flintkote property.
Local residents approached field crew and requested sampling to be done on their properties.

Field Team Leader Signature: Robert A Meyers **Date:** 12/4/14

Eighteenmile Creek Sampling and Analysis Sampling Activities	
Daily Activity Summary Report	
Date: 12-05-14	**Report No:** EMC-2014-04
Weather: Overcast, 20 to 30 Degrees F, light variable winds out of the west.	

Personnel	Hrs.	Affiliation
(FTL/SSHO) Ben Cole	11	EE
(Sample Manager) Lynn Kalmbach	10	EE
(Sampler) Keith Pawlowski	11	EE

Sample Area	Task	Locations Addressed
Jackson, Monroe and Clinton Streets	Install Geoprobe soil borings and attempt to collect groundwater samples from temporary wells.	OU2-GW01 through OU2-GW06

Field Tests Performed (Field Screening, Chemical Testing, etc.):
Installed between three and six Geoprobe (GP) soil borings (attempts) at each of the proposed GP location along Jackson Street, Monroe Street, and Clinton Street in an attempt to install temporary monitoring wells and collect groundwater samples for VOC analysis. A figure providing specific locations and depths to GP refusal will be provided early next week so the team can discuss monitoring well installation options. GP refusal (on bedrock) was encountered between 1.9 ft. below ground surface (bgs) and 8.9 ft. bgs. All GP installed today were dry. No groundwater samples were collected.

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions): None.

Problems Encountered And Deviations From Work Plan: None.
We are waiting for laboratory assignment for dioxin and congener sample analysis. Samples are being iced on a daily basis.

Written And Verbal Instruction By The Client: None.

Safety Issues: None.

Planned Activities For Next Work Day: Plan to discuss field observations with project team and discuss monitoring well installation options.

Remarks (Visitors, Completion of a field task, etc.):
Geoprobe subsurface task completed.

Field Team Leader Signature: **Date:** 12/5/14

Robert A Meyer

Eighteenmile Creek Sampling and Analysis Sampling Activities	
Daily Activity Summary Report	
Date: 12-15-14	**Report No:** EMC-2014-05
Weather: Overcast, 30 to 40 Degrees F, light variable winds out of the west.	

Personnel	Hrs.	Affiliation
(FTL/SSHO) Ben Cole	4	EE
(Driller) Steve Laramee	4	GeoLogic
(Driller's helper) Joe Menzel	4	GeoLogic

Sample Area	Task	Locations Addressed
153 Jackson Street	Mobilize/set up for drilling monitoring well MW18. .	MW18 (153 Jackson Street).

Field Tests Performed (Field Screening, Chemical Testing, etc.):
Mobilized to site. Met drillers, observed MW18 drilling area, off loaded equipment, constructed decontamination pad.

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions):
Drillers delayed arriving to site due to making repairs to drill rig, delaying their departure. Drillers' backflow preventer incompatible with water meter from Dunkirk water authority. Unable to drill today due to lack of water.

Problems Encountered And Deviations From Work Plan:
None

Written And Verbal Instruction By The Client:
None

Safety Issues:
None

Planned Activities For Next Work Day: Begin drilling MW18.

Remarks (Visitors, Completion of a field task, etc.):
None.

Field Team Leader Signature: Robert A Meyer **Date:** 12/15/14

Eighteenmile Creek Sampling and Analysis Sampling Activities	
Daily Activity Summary Report	
Date: 12-16-14	**Report No:** EMC-2014-06
Weather: Overcast with rain, 30 to 40 Degrees F, light variable winds out of the west.	

Personnel	Hrs.	Affiliation
(FTL/SSHO) Ben Cole	10.5	EE
Bob Meyers	1	EE
(Driller) Steve Laramee	10.5	GeoLogic
(Driller's helper) Joe Menzel	10.5	GeoLogic

Sample Area	Task	Locations Addressed
153 Jackson Street	Drilling monitoring well MW18 .	MW18

Field Tests Performed (Field Screening, Chemical Testing, etc.):
Began drilling of MW18, located in easement of 153 Jackson Street (northernmost of the two proposed well locations). Set 4-inch casing in bedrock. Bedrock encountered at 8 feet bgs. Cored rock from 8 feet bgs to 31.6 feet bgs.
Went to MW17 to evaluate the well prior to sampling it later this week. MW17 was dry and the total depth was measured to be 19.11 feet TOIC (actual TD is 25.5 feet TOIC according to records).

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions):
None.

Problems Encountered And Deviations From Work Plan: No problems encountered during drilling of MW18 although the rock is very hard and the coring is progressing slowly.
MW17 was inspected and found to be dry with over six feet of material in it, and will therefore not be sampled during the current sampling effort. MW17 will need to either be refurbished or abandoned and re-drilled.

Written And Verbal Instruction By The Client:
None

Safety Issues:
Typical drilling operations, traffic, noise, cold stress, lifting.

Planned Activities For Next Work Day: Resume drilling/installation of MW18 with rock coring continuing from 31.6 feet bgs.

Remarks (Visitors, Completion of a field task, etc.):
None.

Field Team Leader Signature: Robert A Meyer **Date:** 12/16/14

Eighteenmile Creek Sampling and Analysis Sampling Activities	
Daily Activity Summary Report	
Date: 12-19-14	**Report No:** EMC-2014-08
Weather: Overcast, 25-30 Degrees F, southwest winds 10 mph.	

Personnel	Hrs.	Affiliation
(FTL/SSHO) Ben Cole	12.0	EE
(Sample manager) Lynne Kalmbach	12.0	EE

Sample Area	Task	Locations Addressed
153 Jackson Street	Develop and sample well MW18	MW18
Upson Park	Purge and sample well MW15	MW15
Water Street	Complete sample collection at MW5	MW15

Field Tests Performed (Field Screening, Chemical Testing, etc.):
Completed sample collection at MW5, which was started on 12/18/14 but not completed due to slow well recharge. Purged and sampled well MW15. Developed and sampled well MW18. Moved and labeled IDW to staging area inside Flintkote Plant site. Total IDW was 1 partial drum of soil cuttings from drilling of MW18 and 2 drums of water (1 purge/development water from MW5, 14, 15, 16, 18) and 1 drilling fluids (water) from installation of MW18). Collected 1 IDW solid sample and 1 IDW water sample. Demobilized site.

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions):
None

Problems Encountered And Deviations From Work Plan:
None

Written And Verbal Instruction By The Client:
None.

Safety Issues:
Traffic, noise, cold stress, lifting.

Planned Activities For Next Work Day:
None – today was last day of field work for this task.

Remarks (Visitors, Completion of a field task, etc.):
Today was last day of field work for this task.

Field Team Leader Signature: Robert A Meyer **Date:** 12/19/14

Eighteenmile Creek Sampling and Analysis Sampling Activities	
Daily Activity Summary Report	
Date: 12-17-14	**Report No:** EMC-2014-07
Weather: Rain and snow, 30 to 35 Degrees F, southwest winds 10-20 mph.	

Personnel	Hrs.	Affiliation
(FTL/SSHO) Ben Cole	10.5	EE
(Driller) Steve Laramee	10.5	GeoLogic
(Driller's helper) Joe Menzel	10.5	GeoLogic

Sample Area	Task	Locations Addressed
153 Jackson Street	Drilling monitoring well MW18	MW18

Field Tests Performed (Field Screening, Chemical Testing, etc.):
Continued drilling of MW18, located in easement of 153 Jackson Street (northernmost of the two proposed well locations). Cored rock from 31.4 feet bgs to 37 feet bgs then core barrel stopped making progress. Pulled rods from borehole to inspect for mechanical problem. Driller determined that rock was getting caught in cutter head, preventing more rock from entering barrel and stopping progress. Cleared core barrel and tripped rods back into borehole. Resumed coring however core barrel still unable to make progress. Pulled rods from borehole. Used roller bit to drill to 40.0 feet bgs. Tripped core barrel back into hole. Drilled at an acceptable rate to 40.4 feet bgs. Rods then dropped abruptly 0.5 inch then drilled 0.5 inch then again dropped abruptly 0.5 inch then drilling progress again slowed to unacceptable rate. Appear to have voids around 40.4 to 40.6 feet bgs. Will pull core tomorrow.
Driller returning to shop overnight to bring NQ rods and additional tooling.

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions):
Very slow drilling due to hardness of rock.

Problems Encountered And Deviations From Work Plan: No problems encountered during drilling of MW18 although the rock is very hard and the coring is progressing slowly.

Written And Verbal Instruction By The Client: EPA agreed with E & E that installing the second bedrock well was not necessary due to the effort required to install MW18. EPA also instructed E & E to install the MW18 well screen above the 44 to 54 ft. bgs interval planned if it is not water bearing (fractured) zone. Recommended setting the well higher at depth TBD based on fractures/evidence of water.

Safety Issues:
Typical drilling operations, traffic, noise, cold stress, lifting.

Planned Activities For Next Work Day: Resume drilling/installation of MW18 with rock coring continuing from 40.6 feet bgs.

Remarks (Visitors, Completion of a field task, etc.):
None.

Field Team Leader Signature: Robert A Meyer **Date:** 12/17/14

Eighteenmile Creek Sampling and Analysis Sampling Activities	
Daily Activity Summary Report	
Date: 12-18-14	**Report No:** EMC-2014-08
Weather: Overcast, 30 Degrees F, southwest winds 10 mph.	

Personnel	Hrs.	Affiliation
(FTL/SSHO) Ben Cole	10.5	EE
(Driller) Steve Laramee	10.0	GeoLogic
(Driller's helper) Joe Menzel	10.0	GeoLogic

Sample Area	Task	Locations Addressed
153 Jackson Street	Drilling monitoring well MW18	MW18

Field Tests Performed (Field Screening, Chemical Testing, etc.):
Continued drilling MW18, located in easement of 153 Jackson Street (northernmost of the two proposed well locations). Cored rock from 40.8 feet bgs to 45.9 feet bgs. Good voids/fractures observed between 40 and 41 feet bgs and 44 and 45.9 feet bgs. Set well with screen 35.9 to 45.9 feet bgs. Constructed well and demobilized drill rig. Collected groundwater samples from MW14 and MW16. Collected sample from MW5 for VOA and hexavalent chromium before well drawdown prevented collecting for remaining parameters. Collected grab sample for VOA at MW9.

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions):
None.

Problems Encountered And Deviations From Work Plan: MW18 screened interval changed from the planned 44 to 54 feet bgs to 35.9 to 45.9 feet bgs. Change was made after determining this interval incorporates several fractures/voids that appear water-bearing.

Written And Verbal Instruction By The Client:
Discussed change in MW18 screened interval with EPA prior to instructing driller.

Safety Issues:
Typical drilling operations, traffic, noise, cold stress, lifting.

Planned Activities For Next Work Day: Complete sample collection at MW5. Purge and sample MW15. Develop and sample MW18 if development goes well. Collect IDW samples from drill cuttings and fluids.

Remarks (Visitors, Completion of a field task, etc.):
Drilling and installation of MW18 complete.

Field Team Leader Signature: Robert A Meyer **Date:** 12/18/14

Eighteenmile Creek Sampling and Analysis Sampling Activities	
Daily Activity Summary Report	
Date: 05-18-15	**Report No:** EMC-2015-01
Weather: High 80 Degrees, Humid, Sunny	

Personnel	Hrs.	Affiliation
(FTL/SSHO) Ben Cole	11	EE
(Sampler) Amanda Klawinski	10	EE
(Sample Manager) Lynne Kalmbach	10	EE
(Project Manager) Marcia Galloway	3	EE

Sample Area	Task	Locations Addressed
Upson Park	Purge/Sample monitoring wells	MW16
Upson Park	Surface Soil Sampling	OU2-SS11, SS12, SS13, SS14

Field Tests Performed (Field Screening, Chemical Testing, etc.): Surface soils were collected from 3 depths (0-0.5, 0.5-2, 2-3 feet) and analyzed for PCBs. One surface soil was submitted for dioxin and congeners. MW16 sampled for full list of parameters.

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions):
None.

Problems Encountered And Deviations From Work Plan:
Surface soil locations were staked as per the QAPP addendum. The structure on the bank of the creek west of Upson 2 and parking lot barricade could be potential barriers to excavation. The samples were located east of the structure and on the top bank and behind the barriers in the woods.

Written And Verbal Instruction By The Client:
Received sampling plan for Flintkote borings from Pete Mannino and reviewed locations on-site with Terry Kish. EPA would like to collect samples from one trench this week. The remainder of samples will be collected in June. E & E will provide a geologist to log the locations and collect the samples. LATA/E & E will ship samples to laboratory for analysis.

Safety Issues:
Very hot and humid, need to take sufficient water breaks.

Planned Activities For Next Work Day:
Finish sampling monitoring wells. Wait to hear from Terry Kish if we can sample Flintkote this afternoon. Gene Florentino will arrive on site for that activity.

Remarks (Visitors, Completion of a field task, etc.):
Soil sampling in Upson Park is complete.

Field Team Leader Signature: **Date:** 05/18/15
Marcia Galloway for B. Cole

Eighteenmile Creek Sampling and Analysis Sampling Activities	
Daily Activity Summary Report	
Date: 05-19-15	**Report No:** EMC-2015-02
Weather: 66 Degrees, Sunny	

Personnel	Hrs.	Affiliation
(FTL/SSHO) Ben Cole	11	EE
(Sampler) Amanda Klawinski	10	EE
(Sample Manager) Lynne Kalmbach	10	EE
(Project Director) Gene Florentino	4	EE

Sample Area	Task	Locations Addressed
Upson Park/Water St	Purge/Sample monitoring wells	MW14, MW15, MW5
Flintkote	Subsurface Soil Sampling	Building E Trench

Field Tests Performed (Field Screening, Chemical Testing, etc.): Groundwater samples were collected via low-flow techniques and analyzed for the full list of parameters.

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions):
None.

Problems Encountered And Deviations From Work Plan:
Gene Florentino coordinated with Terry Kish to collect samples in the trench beneath building E. Samples were collected from a layer of fill and the native soil beneath in one location. Additional Flintkote sampling will not occur until June.

Locations in the Creek Corridor were evaluated for amount of sediment present. The location in the Millrace is not feasible. The water flow is very low and will not support a fish population. The creek has significant debris and is close to the active demolition area. The creek was location was designated due the high concentrations of PCBs present. An alternative location near the old transformer site will be evaluated. This area also had high concentrations of PCBs in the sediment. See the attached figure from the SRI report. The new proposed location is circled in red.

Written And Verbal Instruction By The Client:
None.

Safety Issues:
Trench sampling was not added to the HASP. HASP procedures were reviewed with Construction Team before sampling.

Planned Activities For Next Work Day:
Finish sampling monitoring well MW18 and check MW9 for water. Collect surface water from Creek Corridor. Sean Meegan will arrive on site for fish sampling in the afternoon.

Remarks (Visitors, Completion of a field task, etc.):
Sampling in Flinkote is complete for this week.

Field Team Leader Signature: **Date:** 05/19/15
Marcia Galloway for B. Cole

Eighteenmile Creek Sampling and Analysis Sampling Activities	
Daily Activity Summary Report	
Date: 05-20-15	**Report No:** EMC-2015-03
Weather: 52 Degrees, Sunny	

Personnel	Hrs.	Affiliation
(FTL/SSHO) Ben Cole	12	E & E
(Sampler) Amanda Klawinski	11	E & E
(Sample Manager) Lynne Kalmbach	11	E & E
(Project Manager) Marcia Galloway	2	E & E
(Fishery Biologist) Sean Meegan	5	E & E

Sample Area	Task	Locations Addressed
Water St	Purge/Sample monitoring wells	MW18, MW9
Creek Corridor	Surface Water Sampling	OU2-SW01
Creek Corridor	Fish Sampling	Sampled below the Clinton Street Dam. Only 3 small Sport fish were caught. No forage fish were caught.

Field Tests Performed (Field Screening, Chemical Testing, etc.): Groundwater sample MW18 was collected via low-flow techniques and analyzed for the full list of parameters. Groundwater sample MW9 was bailed and analyzed for VOCs only due to lack of water.

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions):
MW18 was purging very slowly due to maintain low turbidity. Fish catch per unit effort was low.

Problems Encountered And Deviations From Work Plan:
MW-9 did not contain enough water to sample all parameters. Only a VOC was collected.

Toxicity laboratory cannot receive sediment on Saturday so we will attempt to collect these samples tomorrow at all locations.

The number of fish available to sample was low. The habitat below the Clinton Street dam was not that good to support a fish population. We will evaluate fish population in the reference area and then shock above the Clinton Street dam. Sean Meegan, our senior biologist was on-site to collect fish today because the junior biologist was delayed in the field. Due to the problems with the fish collection, he will also perform the sampling tomorrow. We will provide an update later in the day on whether to attempt a third day of fish sampling.

Written And Verbal Instruction By The Client:
None.

Safety Issues:
None.

Planned Activities For Next Work Day:
Collect fish, surface sediment for toxicity analysis and surface water at the reference location. Collect fish above Clinton Street dam in the Creek Corridor. Process the fish samples.

Remarks (Visitors, Completion of a field task, etc.):
Monitoring well sampling is complete. Took access agreements to Brigham's for signature. We have signed agreements to sample tomorrow.

Field Team Leader Signature: **Date:** 05/20/15
Marcia Galloway for B. Cole

Eighteenmile Creek Sampling and Analysis Sampling Activities	
Daily Activity Summary Report	
Date: 05-21-15	**Report No:** EMC-2015-04 - Amended
Weather: 52 Degrees, Sunny	

Personnel	Hrs.	Affiliation
(FTL/SSHO) Ben Cole	12	E & E
(Sampler) Amanda Klawinski	0	E & E
(Sample Manager) Lynne Kalmbach	11	E & E
(Project Manager) Marcia Galloway	2	E & E
(Fishery Biologist) Sean Meegan	12	E & E

Sample Area	Task	Locations Addressed
Creek Corridor	Sediment and Surface Water Sampling	OU2-SW02 and SED02
Creek Corridor	Fish Sampling	Sampled above the Clinton Street Dam. All sport fish were caught. Only a few forage fish were caught.
Reference Area	Sediment and Surface Water Sampling	BG1-SW01 and SED01
Reference Area	Fish Sampling	Sampled northern pond only. Only 1 small bass was caught and therefore Brown Bullhead was caught as a surrogate. Only a few forage fish were caught.

Field Tests Performed (Field Screening, Chemical Testing, etc.):
Surface water and sediment samples were shipped to the analytical laboratory for full TCL/TAL. Sediment samples were shipped to toxicity laboratory for chronic toxicity testing.

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions):
None

Problems Encountered And Deviations From Work Plan:
Toxicity laboratory cannot receive sediment on Saturday and two sediments and one surface water sample remain. We wait to collect next Tuesday when we collect the surface water for toxicity testing.

The number of forage fish available to sample was low and the sport fish species were not large mouth bass. All the forage fish were shipped as one sample per area. We will set up a call with the laboratory and risk assessors to determine the best way to process these fish. Fish will be processed tomorrow.

Written And Verbal Instruction By The Client:
None.

Safety Issues:
Creek access above Clinton Street Dam was limited. The bank was very steep. Great job by the field team for a long day hauling heavy equipment and the boat to complete the fish sampling. We need to consider these access issues if we sample here again.

Planned Activities For Next Work Day:
Process the fish and ship to the laboratory. Collect surface sediment at the reference location.

Remarks (Visitors, Completion of a field task, etc.):
Fish sampling is complete but the processing was not completed.

Field Team Leader Signature: **Date:** 05/21/15 – 5/26/2015 A
Marcia Galloway for B. Cole

Eighteenmile Creek Sampling and Analysis Sampling Activities	
Daily Activity Summary Report	
Date: 05-21-15	**Report No:** EMC-2015-04
Weather: 52 Degrees, Sunny	

Personnel	Hrs.	Affiliation
(FTL/SSHO) Ben Cole	12	E & E
(Sampler) Amanda Klawinski	0	E & E
(Sample Manager) Lynne Kalmbach	11	E & E
(Project Manager) Marcia Galloway	3	E & E
(Fishery Biologist) Sean Meegan	12	E & E

Sample Area	Task	Locations Addressed
Creek Corridor	Sediment and Surface Water Sampling	OU2-SW02 and SD-02
Creek Corridor	Fish Sampling	Sampled above the Clinton Street Dam. All sport fish were caught. Only a few forage fish were caught.
Reference Area	Sediment and Surface Water Sampling	BG-SW01 and SD-01
Reference Area	Fish Sampling	Sampled northern pond only. Only 1 small bass was caught and therefore Brown Bullhead was caught as a surrogate. Only a few forage fish were caught.

Field Tests Performed (Field Screening, Chemical Testing, etc.):

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions):
None

Problems Encountered And Deviations From Work Plan:
Toxicity laboratory cannot receive sediment on Saturday and two sediments and one surface water sample remain. We will either hold them over the weekend or wait to collect next Tuesday when we collect the surface water for toxicity testing.

The number of forage fish available to sample was low and the sport fish species were not large mouth bass. All the forage fish were shipped as one sample per area. We will set up a call with the laboratory and risk assessors to determine the best way to process these fish.

Written And Verbal Instruction By The Client:
None.

Safety Issues:
Creek access above Clinton Street Dam was limited. The bank was very steep. Great job by the field team for a long day hauling heavy equipment and the boat to complete the fish sampling. We need to consider these access issues if we sample here again.

Planned Activities For Next Work Day:
Collect surface sediment at the reference location. Collect sediment and surface water from below Clinton Street Dam.

Remarks (Visitors, Completion of a field task, etc.):
Fish sampling is complete

Field Team Leader Signature: **Date:** 05/21/15
Marcia Galloway for B. Cole

Eighteenmile Creek Sampling and Analysis Sampling Activities	
Daily Activity Summary Report	
Date: 05-22-15	**Report No:** EMC-2015-05
Weather: 60 Degrees, Sunny	

Personnel	Hrs.	Affiliation
(FTL/SSHO) Ben Cole	12	E & E
(Sampler) Amanda Klawinski	10	E & E
(Sample Manager) Lynne Kalmbach	11.5	E & E
(Project Manager) Marcia Galloway	1	E & E
(Fishery Biologist) Sean Meegan	10	E & E

Sample Area	Task	Locations Addressed
Creek Corridor	Fish Processing	Fillet samples (n =10) - 4 largest smallmouth bass (10.5, 11.5, 11.75, 12.5 inches) - 3 largest walleye (legal size) - 3 redhorse (adult suckers) Whole –body forage fish (3 to 6 inch length) composite samples (n = 3) - 2 rock bass composites (5 fish each) - 1 mixed sunfish composite (1 pumpkinseed + 1 rock bass)
Reference Area	Sediment Sam-pling	BG1-SED-02 to 07
Reference Area	Fish Processing	Fillet samples (n =10) - 1 largemouth bass (11.5 inches) - 9 carp (adults) Whole-body forage fish (3 to 6 inch length) composite samples (n = 4) - 1 pumpkinseed composite (7 pumpkinseeds) - 1 rock bass composite (4 rock bass) - 1 bluegill composite (5 bluegill) - 1 crappie (1 crappie, 6 inches)

Field Tests Performed (Field Screening, Chemical Testing, etc.):
Sediment samples were collected from the reference area and dropped off at the analytical laboratory for the full range of parameters. Fish samples were processed and shipped to the analytical laboratory as fillets and whole body composites for Saturday delivery.

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions):
None

Problems Encountered And Deviations From Work Plan:
At the reference location there was insufficient sediment in the shallow creek bed areas. Only 7 of the 10 samples were collected.

Written And Verbal Instruction By The Client:
None.

Safety Issues:
None

Planned Activities For Next Work Day:
Collect surface water for toxicity at the reference location. Collect sediment for chemical analysis and sediment and surface water for toxicity analysis from near the Water Street Dam. Collect sediment and surface water for chemical analysis and sediment and surface water for toxicity analysis from below Clinton Street Dam in the new revised location provided sufficient sediment is found.

Remarks (Visitors, Completion of a field task, etc.):
Fish sampling is complete. Sediment collection from the reference area is complete. Returned rental truck and shipped back fish shocker. We will keep box truck until Tuesday.

Field Team Leader Signature: **Date:** 05/26/15
Marcia Galloway for B. Cole

Eighteenmile Creek Sampling and Analysis Sampling Activities	
Daily Activity Summary Report	
Date: 05-26-15	**Report No:** EMC-2015-06
Weather: 82 Degrees, Sunny	

Personnel	Hrs.	Affiliation
(FTL/SSHO) Ben Cole	12	E & E
(Sampler) Amanda Klawinski	12	E & E
(Sample Manager) Lynne Kalmbach	2	E & E
(Project Manager) Marcia Galloway	0	E & E
(Fishery Biologist) Sean Meegan	0	E & E

Sample Area	Task	Locations Addressed
Creek Corridor	Surface Water Sampling	OU2-SW01, OU2-SW-02, OU2-SW-03
Creek Corridor	Sediment Sampling	OU2-SED-01, OU2-SED-03
Reference Area	Surface Water Sampling	BG1-SW01
IDW	IDW Sampling	OU2-IDW-052615

Field Tests Performed (Field Screening, Chemical Testing, etc.):
Surface Water samples were collected from the reference area and the creek corridor and shipped to the analytical laboratory for toxicity analysis. Surface Water samples were also collected form the creek corridor and dropped off at the analytical laboratory for chemical analyses. Sediment samples were collected from the creek corridor and dropped off at the analytical laboratory for chemical analyses. IDW sample was collected from IDW staged at Flintkote site and dropped off at analytical laboratory for chemical analyses. Approximately one-half drum of liquid IDW remains on site.

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions):
None

Problems Encountered And Deviations From Work Plan:
None.

Written And Verbal Instruction By The Client:
None.

Safety Issues:
None.

Planned Activities For Next Work Day:
Today was the last day of field work for this phase.

Remarks (Visitors, Completion of a field task, etc.):
Today was the last day of field work for this phase. Demobilized equipment and returned box truck.

Field Team Leader Signature: **Date:** 05/27/15
Marcia Galloway for B. Cole

Eighteenmile Creek Sampling and Analysis Sampling Activities	
Daily Activity Summary Report	
Date: 06-29-15	**Report No:** EMC-2015-07
Weather: 82 Degrees, Sunny	

Personnel	Hrs.	Affiliation
(FTL/SSHO) Ben Cole	12	E & E
(Project Manager) Marcia Galloway	4	E & E

Sample Area	Task	Locations Addressed
Flintkote Building	Test Pit Sampling	OU2-TP02-01; OU2-TP03-01; OU2-TP03-02; OU2-TP05-01; OU2-TP06-01

Field Tests Performed (Field Screening, Chemical Testing, etc.):
Five test pits were installed (TP02 through TP06). Five soil samples were collected from four test pits.

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions):
None.

Problems Encountered And Deviations From Work Plan:
Samples were not collected from test pit TP04. Groundwater flowed into TP04 so final test pit depth was not reached. A drainage ditch was excavated to allow TP04 to drain overnight before attempting to excavate deeper and collect soil samples.

Written And Verbal Instruction By The Client:
EPA OSC Terry Kish directed E&E to wait until the following day before sampling soil from TP04.

Safety Issues:
Extra caution was observed when working around heavy equipment and near test pits.

Planned Activities For Next Work Day:
Continue test pit installation and soil sample collection.

Remarks (Visitors, Completion of a field task, etc.):
NYSDEC Representatives David B. Clarke and Damianos Skaros were on-site observing from approximately 0900 hrs to 1145 hrs.

Field Team Leader Signature: **Date:** 06/29/15
Marcia Galloway for B. Cole

Eighteenmile Creek Sampling and Analysis Sampling Activities	
Daily Activity Summary Report	
Date: 06-30-15	**Report No:** EMC-2015-08
Weather: 79 Degrees, Partly sunny with showers	

Personnel	Hrs.	Affiliation
(FTL/SSHO) Ben Cole	11	E & E
(Project Manager) Marcia Galloway	4	E & E
(Geologist/Sampler) Rick Watt	6	E & E

Sample Area	Task	Locations Addressed
Flintkote Building	Surface Water Sampling	OU2-FL-US; OU2-FL-DS (Water from test pit TP04/Building B arch area)
Flintkote Building	Sediment Sampling	OU2-FL-Turb (Sediment from below Building B turbine)
Flintkote Building	Soil Stockpile Sampling	OU2-Arch-SP (Stockpile of soil excavated from Building B Arch area).

Field Tests Performed (Field Screening, Chemical Testing, etc.):
Dye test was conducted and appeared to confirm that water from the Building B arch area is hydraulically connected to the millrace adjacent to Building B. Water sample OU2-FL-US was collected from the Building B arch area. Water sample OU2-FL-DS was collected from the millrace adjacent to Building B. Sediment sample OU2-FL-Turb was collected from sediment found below the water that is beneath the Building B turbine. Composite soil sample OU2-FL-SP was collected from the stockpile of soil excavated from the Building B arch area.

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions):
None.

Problems Encountered And Deviations From Work Plan:
None.

Written And Verbal Instruction By The Client:
None.

Safety Issues:
None.

Planned Activities For Next Work Day:
Wait for sample analytical results before continuing test pit installation and sampling.

Remarks (Visitors, Completion of a field task, etc.):
None.

Field Team Leader Signature: **Date:** 06/30/15
B. Cole

Eighteenmile Creek Sampling and Analysis Sampling Activities	
Daily Activity Summary Report	
Date: 07-14-15	**Report No:** EMC-2015-09
Weather: Partly sunny with showers, 73 deg F	

Personnel	Hrs.	Affiliation
(FTL/SSHO) Ben Cole	8	E & E
(Geologist/Sampler) Gene Florentino	6	E & E
(Engineer) James Taravella	6	E & E

Sample Area	Task	Locations Addressed
Flintkote Building	Sediment Sampling	OU2-TP07-Z1, OU2-TP07-Z2, OU2-TP08-Z1, OU2-TP09-Z1, OU2-TP09-Z2, OU2-Arch

Field Tests Performed (Field Screening, Chemical Testing, etc.):
Collected sediment samples form Test Pits at locations listed above. Delivered samples to lab for analysis.

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions):
None.

Problems Encountered And Deviations From Work Plan:
None.

Written And Verbal Instruction By The Client:
None.

Safety Issues:
None.

Planned Activities For Next Work Day:
TBD.

Remarks (Visitors, Completion of a field task, etc.):
None.

Field Team Leader Signature: **Date:** 07/14/15
B. Cole

Eighteenmile Creek Superfund Site OU2	
Daily Activity Summary Report	
Date: January 25, 2016	**Report No: EMC-2016-01**
Weather: 30 degrees F and cloudy; clearing to mostly sunny and 37 F.	

Personnel	Hrs.	Affiliation
(FTL/Sample Manager) Lynne Parker	11	E & E
(SSHO) Justin Zoladz	9	E & E
Gene Florentino	8	E & E
(Sampler) Sarah Craig	9	E & E
(Sampler) Christopher Wood	9.5	E & E
(Sampler) Jordan Skrzynski	9	E & E

Sample Area	Task	Locations Addressed
Flintkote Bank	Well Point Sample Collection	OU2-WP02
Mill Pond	Bioaccumulation Sediment Collection	OU2-SED04
OU2 Surface Soils	Bioaccumulation Soil Collection	OU2-SS15, OU2-SS18 though OU2-SS24

Field Tests Performed (Field Screening, Chemical Testing, etc.):
The samples were placed on ice overnight. An extra 1 gallon bucket of soil was collected at the following locations for a duplicate and MS/MSD analysis: OU2-SS15 and OU2-SS19.

GW was screened with PID and tested for pH, temperature, conductivity, and turbidity

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions):
The well point device broke after the 1st attempt. A replacement well point was purchased in town; however, it also broke after collection of the first GW sample. The well point crew assisted with the collection of surface soils the remainder of the day. G. Florentino investigated new materials for well points and purchased new equipment.

Problems Encountered And Deviations From Work Plan:
Near the proposed sediment location (18MC-L07-S02) the team was unable to collect a sample due to very little sediment deposition. The Mill Pond is covered with snow and ice making collection and visualization of sediment difficult. We will revisit a second location (perhaps closer to the bank) in the pond after the other samples have been collected.

Written And Verbal Instruction By The Client:
None

Safety Issues:
None

Planned Activities For Next Work Day:
Plan to continue with sediment and soil collection. Water collection from well points will resume with new equipment.

Remarks (Visitors, Completion of a field task, etc.):
No Visitors

Field Team Leader Signature: **Date: 1/25/2016**



Eighteenmile Creek Superfund Site OU2	
Daily Activity Summary Report	
Date: January 26, 2016	**Report No: EMC-2016-02**
Weather: 45 degrees F, overcast, light rain; temperature dropped to 36 F with an increase in wind throughout the day.	

Personnel	Hrs.	Affiliation
(FTL/Sample Manager) Lynne Parker	11	E & E
(SSHO) Justin Zoladz	10	E & E
Gene Florentino	6.5	E & E
(Sampler) Sarah Craig	8	E & E
(Sampler) Christopher Wood	9.5	E & E
(Sampler) Jordan Skrzynski	10	E & E

Sample Area	Task	Locations Addressed
Flintkote Bank	Well Point Sample Collection	OU2-WP01
Mill Pond	Bioaccumulation Sediment Collection	OU2-SED05 through OU2-SED09
OU2 Surface Soils	Bioaccumulation Soil Collection	OU2-SS16 and OU2-SS17

Field Tests Performed (Field Screening, Chemical Testing, etc.):
The soil and sediment samples for bioaccumulation analysis were placed on ice overnight. The groundwater samples were shipped overnight to the CLP Laboratory.

GW was screened with PID and tested for pH, temperature, conductivity, and turbidity

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions):
Both of the two new heavier duty stainless steel well points failed and were lost in the subsurface. The first point bent during the collection of OU2-WP01. It was straighten and used again at OU2-WP03. However, both the bent stainless steel point and the alternate stainless steel point broke off in the subsurface and were lost. No groundwater was obtain from the OU2-WP03 location. The terrain is too rocky, contains fill debris, and numerous tree roots causing the well points to bend and break during each sampling attempt (see attached photos). Thus, E & E recommends abandoning the groundwater investigation with well points at this time. We can re-assess data collection effort using a potential ATV mounted or tripod geoprobe equipment. We walked the entire planned sample area and there was surface water runoff particularity from the former Flintkote property, but no seeps were observed.

The GW sampling crew (S. Craig and C. Wood) assisted with the collection of surface soils and sediments the remainder of the day.

Problems Encountered And Deviations From Work Plan:

In addition to the termination of groundwater sampling (described above), the field crew was unable to collect a soil sample at the proposed location FS-SS-6. The demolition of the Former Flintkote Plant left the Site covered with a course gravel / stone cover. We collected the soil sample at the nearest feasible location where the stone cover was not present.

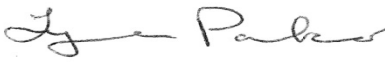
The field crew revisited the Mill Pond along the bank to determine if a second sediment location was possible closer to the bank of the pond. The bank to the east of the proposed location 18MC-L07-S02 did not yield sufficient sediment and the west bank was inaccessible due to the steep and wooded terrain and ice. Therefore, this location was abandoned.

Written And Verbal Instruction By The Client:
None

Eighteenmile Creek Superfund Site OU2	
Daily Activity Summary Report	
Date: January 26, 2016	**Report No: EMC-2016-02**
Weather: 45 degrees F, overcast, light rain; temperature dropped to 36 F with an increase in wind throughout the day.	

Safety Issues: None
Planned Activities For Next Work Day: The field work is complete. The team will demobilize on Wednesday, January 27, 2016.
Remarks (Visitors, Completion of a field task, etc.): No Visitors

Field Team Leader Signature: **Date: 1/26/2016**



Purge Log

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Tel: 716/684-8060, Fax: 716/684-0844

WELL PURGE & SAMPLE RECORD

Site Name/Location: 18 Mile Creek — Well ID: MW-05

EEEPC Project No.: 100294.0002.03.0 — Date: 12/18/14

Initial Depth to Water: 12.15 feet TOIC — Start Time: 0955

Total Well Depth: 25.37 feet TOIC — End Time: 1045

Depth to Pump: _____ feet TOIC — ☐ Bailer ☑ Pump

Initial Pump Rate: 300 (mLpm)/ gpm — Pump Type: typhoon

adjusted to: _____ at _____ minutes — Well Diameter: 2 inches

adjusted to: _____ at _____ minutes — 1x Well Volume: 2.15 gallons (0.46 = 5 VOC)

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
0955	0	6.91	11.63	-27.6	2.687	1.26	>1000	12.15
1000	1.5	6.93	11.74	-56.5	2.501	0.63	65.8	12.79
1005	3.0	6.95	11.83	-44.3	2.343	1.16	20.9	13.03
1610	4.5	6.95	11.86	-41.4	2.347	0.88	10.51	14.51
1015	6.0	6.94	11.77	-43.0	2.404	0.81	8.75	15.37
1020	7.5	6.93	11.54	-34.6	2.430	0.66	9.49	16.13
1025	9.0	6.92	11.48	-33.9	2.444	0.51	9.73	17.21
1030	10.5	6.92	11.78	-40.6	2.443	0.26	10.40	18.72
1035	12.0	6.91	11.87	-37.8	2.468	0.28	8.43	19.02
1040	13.5	6.91	11.99	-42.3	2.486	0.25	5.23	20.17
1045	15.0	6.91	11.71	-43.5	2.495	0.26	5.97	21.29
well purged dry								7
Final Sample Data:								

Sample ID: 18MC-MW-05 — Duplicate? ☑ — Dupe Samp ID: _____

Sample Time: 1047 — MS/MSD? ☐

Analyses:	Methods:
☒ VOCs	☒ CLP
☒ SVOCs	☐ SW846
☒ PCBs	☐ Drink. Wtr.
☒ Metals	☐ _____
☒ Pest	☐ _____

Comments: purged dry during Sampling
will let recharge + Sample with Bailer

VOC only - collected on 12/18/14. remaining parameters collected on 12/19/14.

Sampler(s): L. Kalmbach, S. Craig

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WELL PURGE & SAMPLE RECORD

Site Name/Location: 18 Mile Creek — Well ID: MW 05

EEEPC Project No.: 1002964.0002.03 — Date: 12/19/14

Initial Depth to Water: 12.22 feet TOIC — sample Start Time: 0930

Total Well Depth: 25.39 feet TOIC — sample End Time: 1035

Depth to Pump: 23.0 feet TOIC — ☐ Bailer ☒ Pump

Initial Pump Rate: ~100 mL pm / ~~gpm~~ — Pump Type: peristaltic

~~adjusted to:~~ ~~at~~ ~~minutes~~ — Well Diameter: 2 inches

~~adjusted to:~~ ~~at~~ ~~minutes~~ — 1x Well Volume: 2.15 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
0930								12.22
	see purge/sample form completed on 12/18/14 for purge water parameters.							
Final Sample Data:		6.22	0.54	61.6	2.608	5.43	9.03	14.50

Sample ID: OU2-MW05 — Duplicate? ☐ — Dupe Samp ID:

Sample Time: 0930 — MS/MSD? ☐

Analyses:	Methods:
☐ VOCs	☒ CLP
☒ SVOCs	☐ SW846
☒ PCBs	☐ Drink. Wtr.
☒ Metals	☐ _____
☒ pest	☐ _____

Comments: purged well on 12/18/14 w/ submersible pump. well purged dry during purge on 12/18. used peristaltic pump on 12/19/14 to collect sample. measured field water quality after sample collected.

Sampler(s): B. Cole

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WELL PURGE & SAMPLE RECORD

Site Name/Location: 18 Mile Creek
Well ID: MW-09
EEEPC Project No.: 100294.0002.03.0
Date: 12/18/14

Initial Depth to Water: 11.0 feet TOIC *
Total Well Depth: 13.15 feet TOIC
Depth to Pump: NA feet TOIC
Initial Pump Rate: | Lpm / gpm
adjusted to: | at ____ minutes
adjusted to: V at ____ minutes

Start Time: —
End Time: —
☒ Bailer ☐ Pump
Pump Type: NA
Well Diameter: 2 inches
1x Well Volume: ____ gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
Final Sample Data:								

Sample ID: 18MC-MW-09
Sample Time: 0912
~~Duplicate?~~ ☐ Dupe Samp ID: —
~~MS/MSD?~~ ☐

Analyses: / Methods:
☒ VOCs ☐ CLP
☐ SVOCs ☐ SW846
☐ PCBs ☐ Drink. Wtr.
☐ Metals ☐ ____
☐ ____ ☐ ____

Comments: Grab Sample of VOAs only
* Measured on 12/5/14 @ 1500 hrs.

Sampler(s): L. Kalmbach, S. Craig

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WELL PURGE & SAMPLE RECORD

Site Name/Location: 18 Mile Creek — Well ID: MW-14
EEEPC Project No.: 100294.0002.03.0 — Date: 12/18/14

Initial Depth to Water: 15.30 feet TOIC — Start Time: 1510
Total Well Depth: 24.80 feet TOIC — End Time: 1550
Depth to Pump: ____ feet TOIC — ☐ Bailer ☒ Pump
Initial Pump Rate: 300 (Lpm) gpm — Pump Type: typhoon
adjusted to: 200 (mL/Pm) at 10 minutes — Well Diameter: 2 inches
adjusted to: ____ at ____ minutes — 1x Well Volume: 1.54 gallons

4.64 = 3Vol

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1510	0	7.28	10.43	89.1	1.848	1.82	12.03	17.95
1515	1.5	7.20	11.88	88.0	1.842	0.56	7.44	18.75
1520	3.0	7.17	11.80	85.2	1.834	1.77	5.19	19.14
1525	4.0	7.16	11.80	84.1	1.836	1.22	6.71	19.20
1530	5.0	7.15	11.69	84.1	1.846	0.79	3.81	18.90
1535	6.0	7.14	11.55	83.4	1.850	0.58	2.06	18.40
1540	7.0	7.13	11.59	83.1	1.850	0.56	1.77	18.35
1545	8.0	7.13	11.52	82.9	1.852	0.48	1.24	18.20
1550	9.0	7.12	11.54	82.7	1.854	0.47	1.03	18.17
Final Sample Data:		7.12	11.54	82.7	1.854	0.47	1.03	18.17

Sample ID: MW-18MC-14 — Duplicate? ☐ — Dupe Samp ID: —
Sample Time: 1552 — MS/MSD? ☒

Analyses: — Methods:
☒ VOCs — ☒ CLP
☒ SVOCs — ☐ SW846
☒ PCBs — ☐ Drink. Wtr.
☒ Metals — ☐ ____
☒ Pest — ☐ ____

Comments: Sampled with peristaltic pump

Sampler(s): S. Craig

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Eighteen Mile Creek | Well ID: MW-15
EEEPC Project No.: | Date: 19 Dec 2014

Initial Depth to Water: 18.80 feet TOIC | Start Time: 1140
Total Well Depth: 24.05 feet TOIC | End Time: 1230
Depth to Pump: feet TOIC | ☐ Bailer ☒ Pump
Initial Pump Rate: 600 mLpm / gpm | Pump Type: Typhoon
adjusted to: at minutes | Well Diameter: 2 inches
adjusted to: at minutes | 1x Well Volume: 0.86 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1140		7.25	10.7	86.1	2.632	4.27	54	20.10
1145		7.18	11.6	97.0	2.611	4.11	101.9	19.63
1150		7.16	11.7	101.5	2.610	3.93	28.0	19.64
1155		7.15	11.7	103.5	2.622	3.94	12.5	19.60
1200		7.14	11.8	105.5	2.642	3.65	6.60	19.60
1205		7.14	11.8	106.6	2.658	3.59	3.04	19.60
1210		7.13	11.8	109.0	2.666	3.47	2.50	19.71
1215		7.13	11.8	110.8	2.671	3.46	2.81	19.77
1220		7.12	11.8	110.9	2.678	3.41	4.61	19.52
1225		7.12	11.6	108.7	2.682	3.24	3.90	19.52
1230	30 l	7.12	11.6	108.2	2.682	3.20	3.90	19.52
Final Sample Data:		7.12	11.6	108.2	2.682	3.20	3.90	19.52

Sample ID: ~~MW~~ OU2-MW15 | Duplicate? ☐ | Dupe Samp ID:
Sample Time: 12/19/14 1230 | MS/MSD? ☐

Analyses:	Methods:
☒ VOCs	☒ CLP
☒ SVOCs	☐ SW846
☒ PCBs	☐ Drink. Wtr.
☒ Metals	☐
☒ Pest	☐

Comments:

Sampler(s): Ben Cole | Lynne Kalmbach

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WELL PURGE & SAMPLE RECORD

Site Name/Location: 18 Mile Creek
Well ID: MW-16
EEEPC Project No.: 100294.1.0002.03.0
Date: 12/18/14

Initial Depth to Water: 16.11 feet TOIC
Start Time: 1140
Total Well Depth: 27.81 feet TOIC
End Time: 1248
Depth to Pump: _____ feet TOIC
☐ Bailer ☑ Pump
Initial Pump Rate: 200 (mL/pm) / gpm
Pump Type: typhoon
adjusted to: 200 mL/pm at 25 minutes
Well Diameter: 2 inches
adjusted to: _____ at _____ minutes
1x Well Volume: 1.9 gallons
5.7L = 3Vol

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1140	0	7.05	10.68	81.0	7.364	2.83	>1000	18.66
1145	1	6.97	10.88	83.3	7.414	1.68	120	19.36
1150	2	6.99	11.10	82.8	7.168	1.92	150	20.54
1155	3	7.01	11.02	84.2	6.554	1.90	>1000	21.67
1200	4	7.03	10.82	85.7	5,820	2.30	>1000	23.17
1205	5	Change to Smaller pump						
1215	6	7.25	10.21	98.5	3.376	5.70	>1000	22.31
1220	7	7.14	10.58	97.2	3.313	4.47	829	22.31
1225	8	7.12	10.89	90.2	3.242	4.41	713	22.95
1230	9	7.14	11.09	88.7	3.061	4.63	59	23.41
1235	10	7.14	11.15	87.6	2.983	4.72	53	23.71
1240	11	7.15	11.01	87.4	2.807	4.58	47	23.78
1242	12	7.15	11.09	87.3	2.648	4.37	43.3	23.83
1245	13	7.15	11.08	87.1	2.530	4.32	24.9	23.87
1248	14	7.15	11.08	87.3	2.517	4.31	14	23.91
Final Sample Data:		7.15	11.08	87.3	2.517	4.31	14	23.91

Sample ID: 18MC-MW-16
Duplicate? ☐
Dupe Samp ID: _____
Sample Time: 1250
MS/MSD? ☐

Analyses:	Methods:
☑ VOCs	☑ CLP
☐ SVOCs	☑ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ _____
☐ Pest	☐ _____

Comments: _____
Sampler(s): L. Kalmbach, S. Craig

ecology and environment engineering, p.c.
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WELL PURGE & SAMPLE RECORD

Site Name/Location: 18mc OU2 GW
Well ID: MW 05
EEEPC Project No.:
Date: 5/19/15

Initial Depth to Water: 13.1 feet TOIC
Total Well Depth: 25.15 feet TOIC
Depth to Pump: 23.5 feet TOIC
Initial Pump Rate: 350 Lpm / gpm
adjusted to: 200 at 1405 minutes
adjusted to: at minutes

sample Start Time: 1515
End Time: 1600
☐ Bailer ☒ Pump
Pump Type: peristaltic
Well Diameter: 2 inches
1x Well Volume: 1.96 gallons

25.15
13.10
12.05
x.163
1.96
1x3
5.89
5.9 gal

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1400	–	7.38	12.2	-21.0	2.16	1.02	129	14.20
1405	0.5g	7.07	11.3	-36.7	2.07	0.27	119	15.68
1415	1g	7.07	11.5	-35.1	2.08	0.32	44.5	15.65
1421	1.5g	7.12	11.1	-39.2	2.09	0.48	21.3	15.68
1426	2.0g	7.06	11.3	-33.2	2.10	0.55	15.8	15.85
1432	2.8	7.07	11.0	-33.5	2.12	0.56	14.3	16.30
1437	3.2	7.09	10.9	-36.7	2.13	0.42	11.1	16.58
1442	3.6	7.06	11.1	-38.8	2.13	0.38	11.75	16.86
1447	4.0	7.07	11.2	-47.2	2.13	0.36	12.0	17.30
1455	4.7	7.07	11.3	-54.7	2.12	0.34	13.2	17.65
1501	5.1	7.07	11.3	-49.4	2.11	0.31	9.14	17.90
1507	5.4	7.07	11.3	-51.0	2.12	0.29	11.2	18.09
1512	5.9	7.13	11.3	-52.1	2.12	0.28	9.57	18.3
Final Sample Data:		7.13	11.3	-52.1	2.12	0.28	9.57	18.3

15.4
16.94

Sample ID: OU2-MW05
Sample Time: 1515
Duplicate? ☐
MS/MSD? ☐
Dupe Samp ID:

Analyses:
☒ VOCs
☒ SVOCs
☒ PCBs
☒ Metals
☒ pest

Methods:
☐ CLP
☒ SW846
☐ Drink. Wtr.
☐
☐

Comments: very slow recharge. had to use peristaltic because submersible will pump well dry

Sampler(s): Cole, Klawinski

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WELL PURGE & SAMPLE RECORD

Site Name/Location: 18MC OU2 GW Well ID: MW14

EEEPC Project No.: Date: 5/19/15

Initial Depth to Water: 16.6 feet TOIC Sample Start Time: 1232

Total Well Depth: 24.95 feet TOIC End Time: 1300

Depth to Pump: 23 feet TOIC ☐ Bailer ☒ Pump

Initial Pump Rate: 300 mLpm / ~~gpm~~ Pump Type: peristaltic

adjusted to: 200 at 1145 minutes Well Diameter: 2 inches

adjusted to: at minutes 1x Well Volume: 1.36 gallons 4.1 gal = 3 vol

24.95 − 16.6 = 8.35 × .163 = 1.36 × 3 = 4.08 → 4.1 gal

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1138	—	7.34	10.5	159.5	2.05	2.14	8.14	17.55
1150	1.0 gal	7.18	10.1	152.8	2.05	1.00	5.25	18.75
1155	1.2	7.16	10.2	145.1	2.03	0.81	4.26	18.95
1200	1.6	7.17	10.2	138.2	2.03	0.80	3.10	19.00
1205	2.0	7.17	10.3	131.7	2.03	0.60	1.99	18.92
1213	2.7	7.17	10.3	126.5	2.05	0.62	2.08	18.85
1218	3.1	7.18	10.3	118.7	2.05	0.60	1.68	18.85
1225	3.8	7.17	10.3	114.9	2.04	0.59	1.65	18.83
1230	4.1	7.18	10.2	113.7	2.04	0.58	1.55	18.85
Final Sample Data:		7.18	10.2	113.7	2.04	0.58	1.55	18.85

Sample ID: OU2-MW14 Duplicate? ☐ Dupe Samp ID:

Sample Time: 1232 MS/MSD? ☐

Analyses:	Methods:
☐ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ _____
☐ _____	☐ _____

Comments: well damaged - casing bent, large hole next to well, can't get submersible in well so using peristaltic, low flow.

Sampler(s): Cole

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WELL PURGE & SAMPLE RECORD

Site Name/Location: 18MC OU2 Well ID: MW15

EEEPC Project No.: Date: 5/19/15

Initial Depth to Water: 19.00 feet TOIC sample Start Time: 0955

Total Well Depth: 23.95 feet TOIC End Time: 1030

Depth to Pump: 23' feet TOIC ☐ Bailer ☒ Pump

Initial Pump Rate: .5 Lpm / gpm Pump Type: mini typhoon

adjusted to: 0.3 at _____ minutes Well Diameter: 2 inches

adjusted to: _____ at _____ minutes 1x Well Volume: 0.81 gallons

4.95 x .163 = 0.806 0.81 = 1 vol x 3 = 2.42 g = 3 vols

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)	
0917	–	7.14	10.5	159.8	3.10	4.61	1865	19.38	19.55
0930	2 gal	7.14	10.8	155.8	3.11	4.00	59.4	19.48	
0936	2.5	7.15	10.7	153.6	3.12	3.97	32.4	19.6	
0941	2.9	7.15	10.7	151.4	3.14	4.23	17.3	19.64	19.58
0947	3.4	7.15	10.8	148.9	3.15	4.10	12.1	19.58	
0952	3.7	7.15	11.0	148.7	3.16	4.20	10.48	19.48	
Final Sample Data:		7.15	11.0	148.7	3.16	4.20	10.48	19.48	

Sample ID: OU2-MW15 ~~Duplicate?~~ ☐ ~~Dupe Samp ID:~~

Sample Time: 0955 MS/MSD? ☒

Analyses:	Methods:
☒ VOCs	☐ CLP
☒ SVOCs	☒ SW846
☒ PCBs	☐ Drink. Wtr.
☒ Metals	☐ _____
☒ pest	☐ _____

Comments: cloudy initally. cleared up. adequate recharge. pumped 2-300 mL/m purg ~150 mL/m sample rate low flow

Sampler(s): Cole, Kalmbach, Klawinski

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Eighteenmile Creek OU2 Well ID: MW 16

EEEPC Project No.: Date: 5/18/15

Initial Depth to Water: 16.22' feet TOIC sample Start Time: 1545

Total Well Depth: 27.55 feet TOIC End Time: 1650

Depth to Pump: 25.5 feet TOIC ☐ Bailer ☒ Pump

Initial Pump Rate: Lpm / gpm Pump Type: submersible mini typhoon

adjusted to: 300 mL/m at ~~5~~ 1445 hrs minutes Well Diameter: 2 inches

adjusted to: 200 mL/m at 1500 ~~minutes~~ 1520 hrs 1x Well Volume: 1.85 gallons

27.55 − 16.22 = 11.33

16.22'

11.33' x .063 .653

11.33 ft .163 x .653 g/ft

~~7.39~~

1.846 gallons x 3 5.54 gal

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1429	—	6.92	10.1	153.2	9.86	3.12	1007	16.22
1440	2 gal	6.99	11.6	129.8	7.49	3.19	679	21.85
1445	3 gal	7.02	11.6	123.8	6.98	3.38	12.7 ~~7.02~~	23.00
1450	3.2 gal	7.07	12.1	118.5	5.92	3.82	98.6	23.10
1455	3.5	7.08	12.6	115.9	5.14	4.03	44.6	22.9
1500	3.9	7.10	12.0	114.6	4.65	4.43	26.8	22.85
1505	4.1	7.11	12.7	112.8	4.41	4.27	14.3	22.6
1510	4.3	7.13	11.9	109.4	3.73	4.77	11.08	23.2
1515	4.6	7.12	12.2	107.6	3.70	4.76	13.60	23.15
1520	4.9	7.13	12.1	106.4	3.69	4.51	12.15	23.15
1525	5.3	7.13	12.2	105.2	3.58	4.80	11.4	23.2
1530	5.7	7.13	12.0	104.4	3.51	4.52	4.79	23.23
1535	6.1	7.13	12.2	103.6	3.48	4.70	3.60	23.00
1540	6.4	7.13	12.3	102.9	3.45	4.70	2.23	23.00
1545	sample							
Final Sample Data:		7.13	12.3	102.9	3.45	4.70	2.23	23.00

Sample ID: OU2-MW16 Duplicate? ☒ Dupe Samp ID: OU2-MW16-Q

Sample Time: 1545 ~~MS/MSD?~~ ☐

Analyses:	Methods:
☒ VOCs	☐ CLP
☒ SVOCs	☐ SW846
☒ PCBs	☐ Drink. Wtr.
☒ Metals	☐
☒ pest	☐

Comments: mini-typhoon. pumped at minimum flow pump could go due to slow well recharge. low flow

Sampler(s): Cole, Kalmbach, Klawinski

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0

#1 of 3

WELL PURGE & SAMPLE RECORD

Site Name/Location: 18MC OU2 GW Lockport NY Well ID: MW 18

EEEPC Project No.: Date: 5/20/15

Initial Depth to Water: 24.05 feet TOIC sample Start Time: 1535

Total Well Depth: 45.43 feet TOIC End Time: 1615

Depth to Pump: 43 feet TOIC ☐ Bailer ☒ Pump

Initial Pump Rate: 250 mL Lpm ~~Lgpm~~ Pump Type: Submersible

adjusted to: 150 mL/m at 11:40 minutes Well Diameter: 2 inches

adjusted to: 100 at minutes 1x Well Volume: 3.48 gallons 10.45=3vols

45.43
-24.05
21.38
x.163 gal
3.48=Vol
x3
10.45 gal
=3vols

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1053	—	7.72	12.1	-160.2	6.02	0.70	12.14	24.05
1058	0.5g	7.71	12.0	-156.3	6.02	0.63	10.99	27.7
1105	0.9g	7.72	12.1	-170.9	5.87	0.64	5.54	28.3
1115	1.4	7.69	12.4	-109.0	4.72	2.78	4.90	29.35
1125	2.5	7.52	13.0	-96.5	4.87	2.55	3.12	29.50
1135	3.3	7.46	13.0	-96.3	5.16	1.90	4.07	29.85
1145	3.5	7.42	13.3	-98.1	5.32	1.48	4.51	29.98
1155	4	7.40	13.0	-100.9	5.45	1.15	3.96	29.98
1205	4.7	7.39	13.5	-103.7	5.52	0.92	4.05	30.09
1215	5	7.39	13.9	-104.4	5.58	0.77	2.23	29.99
1230	5.5	7.36	13.9	-109.6	5.67	0.57	3.07	30.01
1240	5.9	7.37	13.4	-106.4	5.68	0.66	4.03	30.50
1245	6.2	7.36	14.1	-105.3	5.75	0.41	3.19	30.60
1300	6.9	7.36	14.3	-113.8	5.78	0.38	2.29	30.62
1313	7.1	7.37	13.7	-111.9	5.73	1.90	2.25	30.60
Final Sample Data:		see last pg						

27.4'

changed to car battery

Sample ID: OU2-MW18 Duplicate? ☐ Dupe Samp ID:

Sample Time: 15:35 MS/MSD? ☐

Analyses:	Methods:
☑ VOCs	☐ CLP
☑ SVOCs	☑ SW846
☑ PCBs	☐ Drink. Wtr.
☑ Metals	☐
☐	☐

Comments: H_2S like smell. clean water initially restricted flow w/ brass ballvalve due to slow recharge in 12/2014. only recharges @ ~150 mL/m.

Sampler(s): Cole / Klawinski

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#2 of 3

WELL PURGE & SAMPLE RECORD

Site Name/Location: 18MC OU2 GW Lockport, NY Well ID: MW 18
EEEPC Project No.: Date: 5/20/15

Initial Depth to Water: _____ feet TOIC Start Time: _____
Total Well Depth: _____ feet TOIC End Time: _____
Depth to Pump: _____ feet TOIC ☐ Bailer ☐ Pump
Initial Pump Rate: _____ Lpm / gpm Pump Type: _____
adjusted to: _____ at _____ minutes Well Diameter: _____ inches
adjusted to: _____ at _____ minutes 1x Well Volume: _____ gallons

see pg 1 see pg 1

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1321	7.2	7.38	13.9	-106.9	5.69	1.82	5.40	31.31
1328	7.3	7.36	14.1	-108.8	5.78	1.19	2.72	31.10
1338	7.5	7.36	14.5	-110.1	5.78	0.83	1.90	30.74
1349	7.7	7.35	14.7	-109.4	5.78	0.70	2.26	30.62
1400	7.9	7.36	15.0	-109.1	5.82	0.61	2.04	30.61
1411	8.1	7.35	15.0	-101.1	5.88	0.55	1.75	30.55
1416	8.3	7.35	15.0	-108.9	5.92	0.51	0.76	30.51
1421	8.45	7.34	14.9	-109.5	5.94	0.48	1.44	30.45
1428	8.55	7.35	15.4	-114.2	5.97	0.44	1.36	30.40
1436	8.7	7.34	15.1	-114.0	6.00	0.40	1.63	30.36
1441	8.85	7.34	15.1	-111.4	6.02	0.37	1.29	29.95
1454	9.1	7.34	14.1	-111.8	6.12	0.35	2.75	32.04
1459	9.4	7.33	14.6	-115.7	6.12	0.30	1.94	32.11
1504	9.6	7.35	14.5	-118.2	6.12	0.26	4.10	32.13
1510	9.9	7.34	14.6	-119.6	6.02	0.29	1.44	32.18
Final Sample Data:		see last pg						

Sample ID: OU2-MW 18 Duplicate? ☐ Dupe Samp ID: _____
Sample Time: 1535 MS/MSD? ☐

Analyses: / Methods:
☐ VOCs ☐ CLP
☐ SVOCs ☐ SW846
☐ PCBs ☐ Drink. Wtr.
☐ Metals ☐ _____
☐ _____ ☐ _____

Comments: _____

Sampler(s): Klawinski

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#3 of 3

WELL PURGE & SAMPLE RECORD

Site Name/Location: 18MC OU2 GW Lockport, NY Well ID: MW18

EEEPC Project No.: _____ Date: 5/20/15

Initial Depth to Water: _____ feet TOIC Start Time: _____

Total Well Depth: _____ feet TOIC End Time: _____

Depth to Pump: _____ feet TOIC ☐ Bailer ☐ Pump

Initial Pump Rate: _____ Lpm / gpm Pump Type: _____

adjusted to: _____ at _____ minutes Well Diameter: _____ inches

adjusted to: _____ at _____ minutes 1x Well Volume: _____ gallons

See pg 1

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1515	10.1	7.34	14.5	-119.2	5.95	0.28	1.48	31.13
1520	10.3	7.34	15.5	-117.5	5.94	0.30	1.79	31.72
1525	10.5	7.35	15.2	-113.8	5.87	0.42	1.92	31.95
Final Sample Data:		7.35	15.2	-113.8	5.87	0.42	1.92	31.95

Sample ID: OU2-MW18 ~~Duplicate?~~ ☐ ~~Dupe Samp ID:~~ _____

Sample Time: 1535 ~~MS/MSD?~~ ☐

Analyses:	Methods:	Comments:
☐ VOCs	☐ CLP	
☐ SVOCs	☐ SW846	
☐ PCBs	☐ Drink. Wtr.	
☐ Metals	☐ _____	
☐ _____	☐ _____	Sampler(s): Klawinski

Monitoring Well Construction Log/Soil Boring Log

Borehole Record for MW 18

- Drilling Log
- Narrative Lithologic Description
- Well Development Record
- Well Development -- Parameter Measurements
- Investigation - Derived Waste Inventory Sheet

DRILLING LOG FOR MW18

Project Name 18 mile Creek

Site Location Lockport, NY - easement at 153 Jackson St.

Date Started/Finished 12/16/14

Drilling Company Geologic NY Inc.

Driller's Name Steve Laramee

Geologist's Name Ben Cole

Geologist's Signature [signature]

Rig Type (s) CME 55

Drilling Method (s) rock coring

Bit Size (s) HQ Auger Size (s) NA

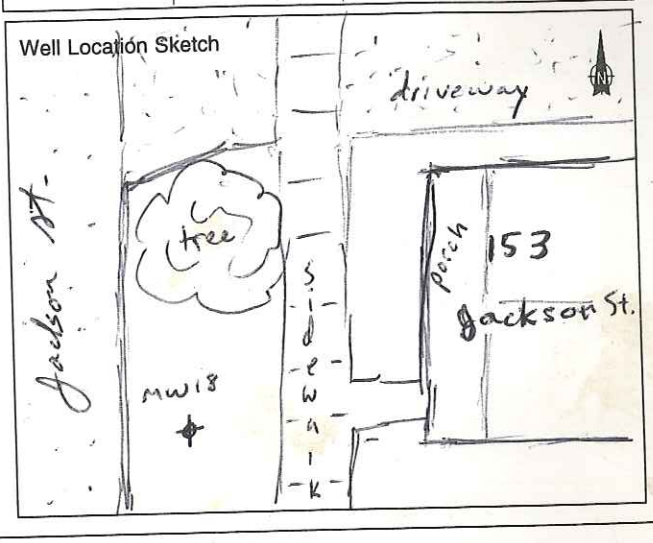
Auger/Split Spoon Refusal NA

Total Depth of Borehole Is ~~45.9'~~ (NA)

Total Depth of Corehole Is 45.9'

Water Level (TOIC)		
Date	Time	Level(Feet)

Well Location Sketch



Depth(Feet)	Sample Number	Blows on Sampler	Soil Components Rock Profile CL SL S GR	Penetration Times	Run Number	Core Recovery	RQD	Fracture Sketch	HNu/OVA (ppm)	Comments
1										
2										
3										
4			see OU2 - GW01							
5										
6										
7										
8				1000						tan/fossils, 2d xial seams
9			CL							gray, few-trace fossils
10					①	2.6'	63%		BG	
11										
12				1200						11.4-16.4' tan-gray
13										
14					②	4.4'	51%		BG	gray all hard. clay @ 3.5' CL
15				CL						pulled gray
16.4										

MW18

SCREENED WELL

flush mount

Stick-up NA ft

Top of Grout 1 ft

Top of Seal at 27.9 ft

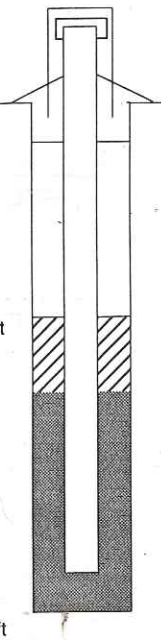
Top of Sand Pack 33.9 ft

Top of Screen at 35.9 ft

Bottom of Screen at 45.9' ft

Bottom of Hole at 45.9' ft

Bottom of Sandpack at 45.9'



Lock Number _____

Inner Casing Material PVC

Inner Casing Inside Diameter 2 inches

GROUND SURFACE

Quantity of Material Used:

Bentonite Pellets _____

Cement _____

Borehole Diameter _____ inches

Cement/ Bentonite _____

Grout _____

Screen Slot Size 0.010"

Screen Type _____

☒ PVC 0.010"

☐ Stainless Steel _____

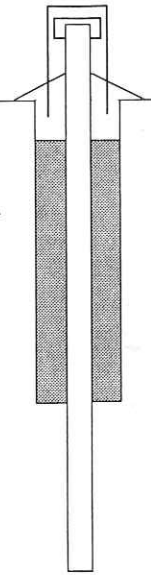
Pack Type/Size:

☒ Sand _____

☐ Gravel _____

☐ Natural _____

OPEN-HOLE WELL



Stick-up _____ ft

Inner Casing Material _____

Inner Casing Inside Diameter _____ inches

Outer Casing Diameter _____ inches

Borehole Diameter _____ ft

Bedrock _____ ft

Bottom of Rock Socket/ Outer Casing _____ ft

Bottom of Inner Casing _____ ft

Corehole Diameter _____

Bottom of Corehole _____ ft

NOTE: See pages 136 and 137 for well construction diagrams

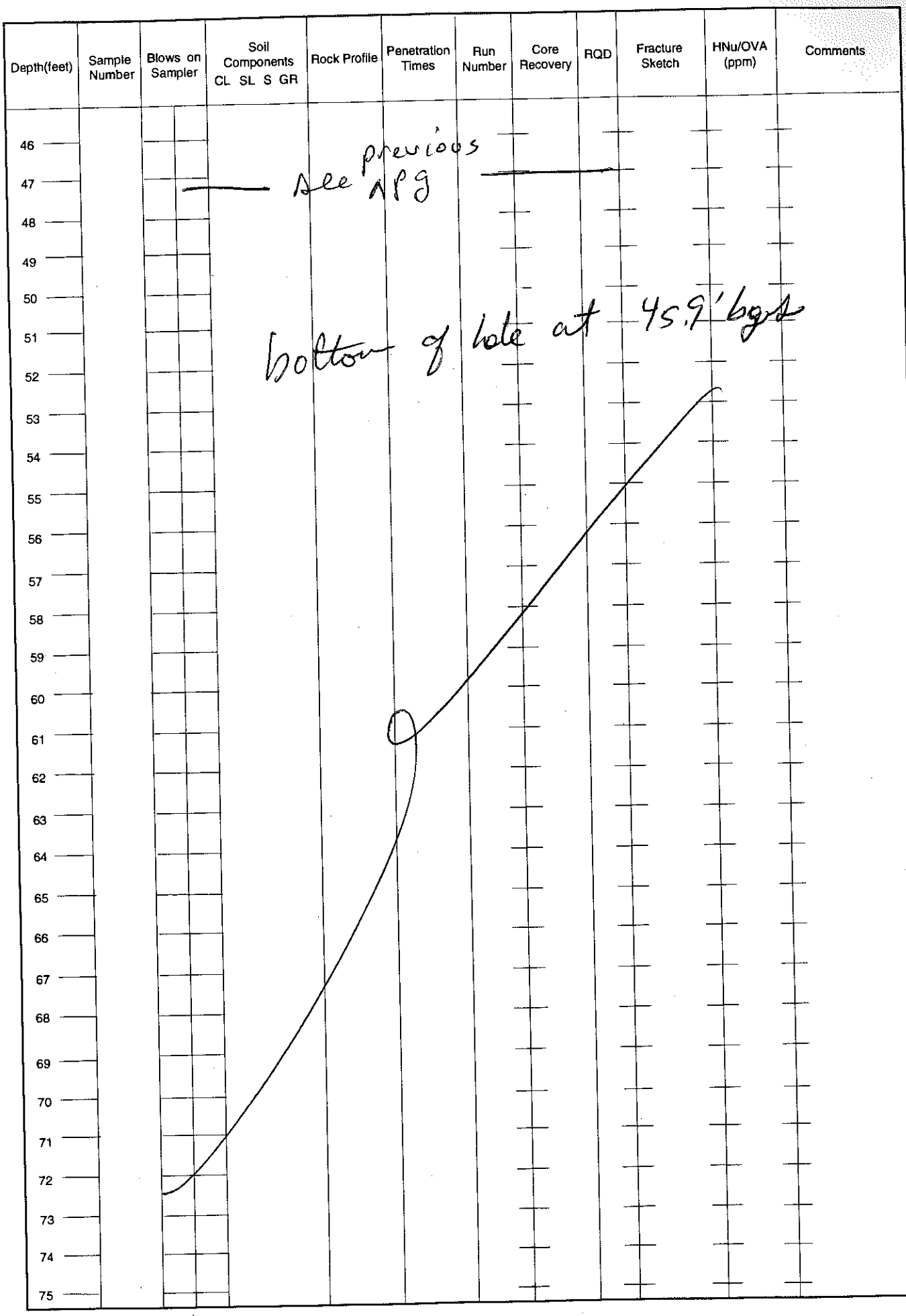
Depth-ft.	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
1		○	○	○
2		○	○	○
3	— see OU2-GW01 —	○	○	○
4		○	○	○
5		○	○	○
6		○	○	○
7		○	○	○
8	hard	○	○	○
9	① 8-11.4' 1 ft tan limestone then rest is gray limestone	○	○	○
10	fractured at 4-5", large frac at 1 ft -1.1'	○	○	○
11	severely weathered gray clay seam at 1.3-1.4'. frac at 1.8'+2'	○	○	○
12	and 2-3'. all fractures generally horizontal	○	○	○
13	crinoids			
14	top 1 ft of tan material appears fossiliferous and has 3-4	○	○	○
15	seams w/ secondary xtalization.	○	○	○

11.4-16.4' 1: nearly all hard gray limestone. top 3' is tan gray. rest is gray, not tan. fracs in top 1 ft closely spaced then mod close for 2 ft then close. ~1" clay seam at ~3.5' gray. core is pitted in bottom 1'.

Depth(feet)	Sample Number	Blows on Sampler	Soil Components CL SL S GR	Rock Profile	Penetration Times	Run Number	Core Recovery	RQD	Fracture Sketch	HNu/OVA (ppm)	Comments
16.4'											
16											
17					1330						
18			CL								
19						(3)	4.3'	13%		BG	
20											
21											
21.4'											
22				laminated	1455						
23											gray
24				massive		(4)	5'	85%		BG	
25											gray red-brown alternate
26											
26.4'											
27											
28											
29				massive		(5)	5'	95%		BG	
30											
31											
31.4'											
32					12/17/14 0800						artificial frac
33				massive		(6)	5'	100%		BG	
34											
35											possible artificial frac
36											
36.4' 37'						(7)	1'	50% 100%		BG	
37											
38			no core								rolla bit no core 37-40'
39											
40 - 40.8' 41.2'						8	6.8'	45%		BG	area where rock dropped
40											
41						9	0.7'	100			
42											
43						10	4.7'	86%			6 fracs btwn 2'
44											mud/wet frac
45											
45.9'											

MW 18

Depth(feet).	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
16	16.4-21.4' closely spaced fracs. all hard limestone,	○	○	○
17	gray, except highly weathered frac at ~0.1' gray clay at	○	○	○
18	1.3' into run. 5 fracs top 1 ft; 4 fracs + clay	○	○	○
19	seam 2nd ft; 5 fracs 3rd ft; 5 fracs 4th ft	○	○	○
20	2 fracs in remainder.	○	○	○
21		○	○	○
22	21.4-26.4' all hard limestone. top 0.7' fine grain bedded,	○	○	○
23	gray / 0.3' coarse grain w/ black, orange, gray grains.	○	○	○
24	~~one~~ vertical fracture in top 0.7'. all other fracs are	○	○	○
25	horizontal / 1-2.3' is massive, gray, hard, no dominant visible	○	○	○
26	remainder is massive' banded gray + red-brown	○	○	○
27	26.4-31.4' all hard, massive limestone. nearly all	○	○	○
28	reddish-brown. frac at 1', 1.7', 2.7', 3.8', 4.1',	○	○	○
29	mechanical break at 4.6' to bt core box.	○	○	○
30		○	○	○
31	31.4-36.4' massive hard red-brown limestone.	○	○	○
32	1 mechanical/artificial fracture at 0.8 ft, 1 at 4.2'	○	○	○
33	that may be natural but possible artificial. <1 inch	○	○	○
34	gray limestone (closed) band at 2.4 and at 4.6-4.8 ft.	○	○	○
35	possible fracture w/ secondary xbligation at 4.5 ft.	○	○	○
36		○	○	○
37	36.4-37' all hard limestone. top 0.3" brown	○	○	○
38	very fine grain ~~fine~~ then light tan 0.4-0.5" - very	○	○	○
39	fine white + brown grains. then (0.5-0.6") tan matrix w/ pieces of	○	○	○
40	rock - possible shale - embedded. then tan-gray w/	○	○	○
41	very fine grains. frac at 0.3', 0.5'	○	○	○
42	40-40.8' 0.2' tan, very fine grain, 0.3' ~~red~~	○	○	○
43	red-brown very fine grain. all hard limestone	○	○	○
44	rest green-gray w/ bedding planes <0.1-0.5"	○	○	○
45	40.8-41.2' all hard limestone - gray, very fine grain.	○	○	○
	no fractures			


Depth(feet)
Sample Number
Blows on Sampler
Soil Components CL SL S GR
Rock Profile
Penetration Times
Run Number
Core Recovery
RQD
Fracture Sketch
HNu/OVA (ppm)
Comments
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
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67
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71
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73
74
75
See previous pg
bottom of hole at 45.9' bgs

Depth(feet)	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
46	41.2 – 45.9'. all hard limestone 1 frac at 1.3' in core and 6 pores in last/bottom 2' – 1 has brown mud / appears water-bearing. Color is gray to red-gray throughout except btm 1.1' is red-brown.	○	○	○
47		○	○	○
48		○	○	○
49		○	○	○
50		○	○	○
51		○	○	○
52		○	○	○
53	bottom of hole @ 45.9' bgs	○	○	○
54		○	○	○
55		○	○	○
56		○	○	○
57		○	○	○
58		○	○	○
59		○	○	○
60		○	○	○
61		○	○	○
62		○	○	○
63		○	○	○
64		○	○	○
65		○	○	○
66		○	○	○
67		○	○	○
68		○	○	○
69		○	○	○
70		○	○	○
71		○	○	○
72		○	○	○
73		○	○	○
74		○	○	○
75				

WELL DEVELOPMENT RECORD

SITE 18 Mile Creek Lyle DATE 12/19/14

LOCATION 153 Jackson St. easement WELL NO. MW18
Lockport NY

MEASUREMENT OF WATER LEVEL AND WELL VOLUME

- Prior to sampling, the static water level and total depth of the well will be measured with a calibrated weighted line. Care will be taken to decontaminate equipment between each use to avoid cross contamination of wells.
- The number of linear feet of static water (difference between static water level and total depth of well) will be calculated.
- The static volume will be calculated using the formula:

$$V = Tr^2(0.163)$$

Where:
V = Static volume of well in gallons;
T = Depth of water in the well, measured in feet;
r = Inside radius of well casing in inches;
and 0.163 = A constant conversion factor which compensates for r^2h factor for the conversion of the casing radius from inches to feet, the conversion of cubic feet to gallons, and (pi).
1 well volume (v) = 4.3 gallons.
x 3 = 12.9 gal

Volume of Water in Casing or Hole

Diameter of Casing or Hole (in)	Gallons per Foot of Depth	Cubic Feet per Foot of Depth	Liter per Meter of Depth	Cubic Meters per Meter of Depth
1	0.041	0.0055	0.509	0.509×10^{-3}
11/2	0.092	0.0123	1.142	1.142×10^{-3}
2	0.163	0.0218	2.024	2.024×10^{-3}
21/2	0.255	0.0341	3.167	3.167×10^{-3}
3	0.367	0.0491	4.558	4.558×10^{-3}
31/2	0.500	0.0668	6.209	6.209×10^{-3}
4	0.653	0.0873	8.110	8.110×10^{-3}
41/2	0.826	0.1104	10.260	10.260×10^{-3}
5	1.020	0.1364	12.670	12.670×10^{-3}
51/2	1.234	0.1650	15.330	15.330×10^{-3}
6	1.469	0.1963	18.240	18.240×10^{-3}
7	2.000	0.2673	24.840	24.840×10^{-3}
8	2.611	0.3491	32.430	32.430×10^{-3}
9	3.305	0.4418	41.040	41.040×10^{-3}
10	4.080	0.5454	50.670	50.670×10^{-3}
11	4.937	0.6600	61.310	61.310×10^{-3}
12	5.875	0.7854	72.960	72.960×10^{-3}
14	8.000	1.0690	99.350	99.350×10^{-3}
16	10.440	1.3960	129.650	129.650×10^{-3}
18	13.220	1.7670	164.180	164.180×10^{-3}
20	16.320	2.1820	202.680	202.680×10^{-3}
22	19.750	2.6400	245.280	245.280×10^{-3}
24	23.500	3.1420	291.850	291.850×10^{-3}
26	27.580	3.6870	342.520	342.520×10^{-3}
28	32.000	4.2760	397.410	397.410×10^{-3}
30	36.720	4.9090	456.020	456.020×10^{-3}
32	41.780	5.5850	518.870	518.870×10^{-3}
34	47.160	6.3050	585.680	585.680×10^{-3}
36	52.880	7.0690	656.720	656.720×10^{-3}

1 Gallon = 3.785 liters
1 Meter = 3.281 feet
1 Gallon water weighs 8.33 lbs. = 3.779 kilograms
1 Liter water weighs 1 kilogram = 2.205 pounds
1 Gallon per foot of depth = 12.419 liters per foot of depth
1 Gallon per meter of depth = 12.419 x 10^{-3} cubic meters per meter of depth

INITIAL DEVELOPMENT WATER

WATER LEVEL (TOIC) 19.05'
WELL DEPTH (TD) 45.22' btoic
COLOR brown
ODOR -
CLARITY opaque

45.22
- 19.05
26.17' wtr
x .163
4.3 gal/Vol

FINAL DEVELOPMENT WATER

WATER LEVEL (TOIC) 41.71'
WELL DEPTH (TD) 45.22'
COLOR none
ODOR none
CLARITY clear

DESCRIPTION OF DEVELOPMENT TECHNIQUE submersible pump w/ dedicated tubing, surged, moderate to slow recharge.

MW18 4.3 gal / 1 well

WELL DEVELOPMENT - PARAMETER MEASUREMENTS

TIME	TOTAL VOL. WITHDRAWN GALS.	TOTAL VOL. WITHDRAWN BORE VOL.	pH	COND. ~~(µmhos/cm)~~ mS/cm	TEMP. °C/°F	TURB. (NTU)	COMMENTS DTW btoic	
1330	-		7.97	1.801	10.59	>1000	23.90	surging
1347	1.5		7.79	1.838	10.92	>1000	26.10	
1355	4.5	1	7.77	1.920	11.47	ovr rng	33.10	
1405	8.0	1.9	7.84	2.141	11.03	ovr rng	39.75	
1410	10.0	2.3					dry well	
1420	10.5	2.4	7.61	2.369	11.54	ovr rng	39.75	
1425	11	2.6	8.48	2.351	11.09	932	41.80	ORP / DO 6.74 mg/L
1430	11.5	2.7	8.73	2.580	10.79	935	41.20	6.57
1438	12.2	2.8	8.45	2.834	11.35	935	41.45	6.37
1450	13	3.0	8.26	2.797	11.35	15.1		7.10
1455	13.5	3.1	8.13	2.842	11.23	10.46		ORP 24.9 · DO 6.73
1500	14	3.3	8.01	2.945	11.31	6.28	41.30	5.5 · 6.96
1510	15	3.5	7.91	3.037	11.89	5.97	42.38	73.4 · 7.41
1515	15.5	3.6	7.90	2.961	10.96	4.11	41.90	-14.1 7.17
1520	16	3.7	7.92	3.021	11.25	5.90	41.80	-14.2 7.05
1525	16.5	3.8	7.93	3.101	11.41	4.09	41.78	-14.2 7.07
1530	17	3.9	7.92	3.141	10.39	5.09	41.75	-14.4 7.10
1535	17.5	4.1	7.91	3.145	10.55	6.81	41.71	-14.5 7.09

1540 - collect GW sample GW18 MW18

collected sample immediately following development - per instructions from USEPA

DEVELOPED BY: B. Cole DATE 12/19/14

OBEHOLEN

Results for Monitoring Well 18				
Monitoring Well ID	Northing	Easting	TOIC Elev.	Rim Elev.
18-MW-18	1158160.06	1119904.30	507.71	508.01

HELD GPS STATIC RESULTS OF 1/13/15

DESIGNATED FILE 0113pa.TPS

AVG COORDS & ELEV OF 0113p.TPS & 0130.TPS

MLSE AVG

N 1158155.90

E 1119871.14

EL 508.14

ADJUSTED AVG RTK COORDINATES MW18

N 1158160.06

E 1119904.30

EL 508.01 (RIM) EL 507.71 (PVC)

DJM — LOCKPORT
GA — 153 JACKSON ST
E-E — 12/19/14

R @ MLSE 1 MAG 5.38

START 10:20 — 10:42
STOP 10:41 — 11:15

LEVEL RUN

PT	BS	HI	FS	EL ASSUMED	REM
	5.50	105.50		100.00	MLSE 1 MAG
			5.92	99.58	MW18 PVC
			5.62	99.88	MW18 RIM
	11.68	105.33	11.95	93.68	MW9 PVC
			5.34	99.99	MLSE MAG 1

TRIG EL DIFF

HI = 0 HR = 4.60'

PT	VD_D	VD_R	AVG
MLSE 1	-1.265	-1.285	-1.27
MW18 PVC	-1.70	-1.72	-1.71

DIFFERENCES

MLSE 1 ⇒ MW18 (PVC) TRIG ↓0.44
LEVEL ↓0.42
AVG ↓0.43

DIFFERENCE BETWEEN MW18 RIM VS PVC
DIRECT MEASURE 0.31
HELD LEVEL @ ↓0.30

* GPS DATA YIELDED ERRONOUS RESULTS.

LOCKPORT
153 JACKSON ST
E-E

DJM

RE-RUN GPS
STATIC MLSE 1

5.7.13

START	9:28	10:04	10:35
STOP	10:00	10:35	11:07

Daniel MacDonald

From: opus <opus@ngs.noaa.gov>
Sent: Wednesday, January 14, 2015 8:38 AM
To: Daniel MacDonald
Subject: OPUS-RS solution : log0113p.tps OP1421242353959

FILE: log0113p.tps OP1421242353959

2005 NOTE: The IGS precise and IGS rapid orbits were not available
2005 at processing time. The IGS ultra-rapid orbit was/will be used to
2005 process the data.
2005

NGS OPUS-RS SOLUTION REPORT
==========

All computed coordinate accuracies are listed as 1-sigma RMS values.
For additional information: http://www.ngs.noaa.gov/OPUS/about.jsp#accuracy

USER: dmacdonald@luengineers.com DATE: January 14, 2015
RINEX FILE: log0013p.15o TIME: 13:37:17 UTC

SOFTWARE: rsgps 1.37 RS50.prl 1.99.2 START: 2015/01/13 15:04:24
EPHEMERIS: igu18272.eph [ultra-rapid] STOP: 2015/01/13 15:34:51
NAV FILE: brdc0130.15n OBS USED: 2264 / 2440 : 93%
ANT NAME: TPSHIPER_II+10 NONE QUALITY IND. 19.48/ 9.55
ARP HEIGHT: 1.689 NORMALIZED RMS: 0.480

REF FRAME: NAD_83(2011)(EPOCH:2010.0000) IGS08 (EPOCH:2015.03463)

X:	913620.004(m)	0.012(m)	913619.153(m)	0.012(m)
Y:	-4568024.360(m)	0.038(m)	-4568022.970(m)	0.038(m)
Z:	4342066.665(m)	0.031(m)	4342066.625(m)	0.031(m)
LAT:	43 10 42.66352	0.011(m)	43 10 42.69650	0.011(m)
E LON:	281 18 36.41390	0.009(m)	281 18 36.38902	0.009(m)
W LON:	78 41 23.58610	0.009(m)	78 41 23.61098	0.009(m)
EL HGT:	119.187(m)	0.049(m)	118.044(m)	0.049(m)
ORTHO HGT:	154.886(m)	0.050(m)	[NAVD88 (Computed using GEOID12A)]	

508.16

	UTM COORDINATES (Zone 17)	STATE PLANE COORDINATES SPC (3103 NY W)
Northing (Y) [meters]	4783229.876	353006.625
Easting (X) [meters]	687750.948	341337.406
Convergence [degrees]	1.58121151	-0.07291057
Point Scale	1.00003365	0.99993842
Combined Factor	1.00001496	0.99991973

N 1158155.90
E 1119871.14

(O + Powly) AVG EL 508.14 (.135)

US NATIONAL GRID DESIGNATOR: 17TPH8775083229(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DI0444	NYBT BATAVIA CORS ARP	N425917.960	W0780720.375	50819.1
DI0458	NYHB HAMBURG CORS ARP	N424302.663	W0785047.273	52796.7
DI0614	NYPF PITTSFORD CORS ARP	N430535.484	W0773131.112	95224.3
DI1872	NYFD FREDONIA NY CORS ARP	N422541.785	W0792022.719	98850.0
DI1870	NYDV DANSVILLE CORS ARP	N423256.093	W0774152.595	107065.7
DI0620	NYSM SALAMANCA CORS ARP	N421131.381	W0784450.465	109688.0
DI0626	NYWL WATERLOO CORS ARP	N425355.227	W0765107.302	152955.1
DK6722	PAPC COUDERSPORT 2 CORS ARP	N414551.866	W0780124.329	166371.5

NEAREST NGS PUBLISHED CONTROL POINT

OG0600	ROBIN 4A LGC 1972	N431046.943	W0784148.467	576.5

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

Daniel MacDonald

From: opus <opus@ngs.noaa.gov>
Sent: Wednesday, January 14, 2015 8:34 AM
To: Daniel MacDonald
Subject: OPUS-RS solution : log0113o.tps OP1421242221186

FILE: log0113o.tps OP1421242221186

2005 NOTE: The IGS precise and IGS rapid orbits were not available
2005 at processing time. The IGS ultra-rapid orbit was/will be used to
2005 process the data.
2005

NGS OPUS-RS SOLUTION REPORT
==========

All computed coordinate accuracies are listed as 1-sigma RMS values.
For additional information: http://www.ngs.noaa.gov/OPUS/about.jsp#accuracy

USER: dmacdonald@luengineers.com DATE: January 14, 2015
RINEX FILE: log0013o.15o TIME: 13:34:06 UTC

SOFTWARE: rsgps 1.37 RS93.prl 1.99.2 START: 2015/01/13 14:28:08
EPHEMERIS: igu18272.eph [ultra-rapid] STOP: 2015/01/13 15:00:57
NAV FILE: brdc0130.15n OBS USED: 2187 / 2601 : 84%
ANT NAME: TPSHIPER_II+10 NONE QUALITY IND. 23.45/ 23.93
ARP HEIGHT: 1.689 NORMALIZED RMS: 0.368

REF FRAME: NAD_83(2011)(EPOCH:2010.0000) IGS08 (EPOCH:2015.03456)

X:	913620.000(m)	0.011(m)	913619.149(m)	0.011(m)
Y:	-4568024.349(m)	0.026(m)	-4568022.959(m)	0.026(m)
Z:	4342066.658(m)	0.015(m)	4342066.618(m)	0.015(m)
LAT:	43 10 42.66361	0.011(m)	43 10 42.69659	0.011(m)
E LON:	281 18 36.41382	0.007(m)	281 18 36.38894	0.007(m)
W LON:	78 41 23.58618	0.007(m)	78 41 23.61106	0.007(m)
EL HGT:	119.174(m)	0.029(m)	118.031(m)	0.029(m)
ORTHO HGT:	154.873(m)	0.031(m)	[NAVD88 (Computed using GEOID12A)]	

50%.11

	UTM COORDINATES (Zone 17)	STATE PLANE COORDINATES SPC (3103 NY W)
Northing (Y) [meters]	4783229.878	353006.628
Easting (X) [meters]	687750.946	341337.406
Convergence [degrees]	1.58121149	-0.07291059
Point Scale	1.00003365	0.99993842
Combined Factor	1.00001496	0.99991973

US NATIONAL GRID DESIGNATOR: 17TPH8775083229(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DI0444	NYBT BATAVIA CORS ARP	N425917.960	W0780720.375	50819.1
DI0458	NYHB HAMBURG CORS ARP	N424302.663	W0785047.273	52796.7
DI0614	NYPF PITTSFORD CORS ARP	N430535.484	W0773131.112	95224.3
DO5128	CBRG COBOURG CORS ARP	N435723.258	W0780951.768	96295.6
DI1872	NYFD FREDONIA NY CORS ARP	N422541.785	W0792022.719	98850.0
DI1870	NYDV DANSVILLE CORS ARP	N423256.093	W0774152.595	107065.7
DI0620	NYSM SALAMANCA CORS ARP	N421131.381	W0784450.465	109688.0
DI0626	NYWL WATERLOO CORS ARP	N425355.227	W0765107.302	152955.1
DK6722	PAPC COUDERSPORT 2 CORS ARP	N414551.866	W0780124.329	166371.5

NEAREST NGS PUBLISHED CONTROL POINT

OG0600	ROBIN 4A LGC 1972	N431046.943	W0784148.467	576.5

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

Daniel MacDonald

From: opus <opus@ngs.noaa.gov>
Sent: Wednesday, January 14, 2015 8:40 AM
To: Daniel MacDonald
Subject: OPUS-RS solution : log0113pa.tps OP1421242489734

FILE: log0113pa.tps OP1421242489734

2005 NOTE: The IGS precise and IGS rapid orbits were not available
2005 at processing time. The IGS ultra-rapid orbit was/will be used to
2005 process the data.
2005

NGS OPUS-RS SOLUTION REPORT
==========

All computed coordinate accuracies are listed as 1-sigma RMS values.
For additional information: http://www.ngs.noaa.gov/OPUS/about.jsp#accuracy

USER: dmacdonald@luengineers.com DATE: January 14, 2015
RINEX FILE: log0013p.15o TIME: 13:39:20 UTC

SOFTWARE: rsgps 1.37 RS52.prl 1.99.2 START: 2015/01/13 15:35:01
EPHEMERIS: igu18272.eph [ultra-rapid] STOP: 2015/01/13 16:02:19
NAV FILE: brdc0130.15n OBS USED: 1728 / 1968 : 88%
ANT NAME: TPSHIPER_II+10 NONE QUALITY IND. 13.54/ 14.94
ARP HEIGHT: 1.689 NORMALIZED RMS: 0.442

REF FRAME: NAD_83(2011)(EPOCH:2010.0000) IGS08 (EPOCH:2015.03468)

X:	913619.986(m)	0.006(m)	913619.135(m)	0.006(m)
Y:	-4568024.298(m)	0.013(m)	-4568022.908(m)	0.013(m)
Z:	4342066.597(m)	0.008(m)	4342066.557(m)	0.008(m)
LAT:	43 10 42.66334	0.007(m)	43 10 42.69632	0.007(m)
E LON:	281 18 36.41365	0.007(m)	281 18 36.38878	0.007(m)
W LON:	78 41 23.58635	0.007(m)	78 41 23.61122	0.007(m)
EL HGT:	119.094(m)	0.013(m)	117.951(m)	0.013(m)
ORTHO HGT:	154.793(m)	0.017(m)	[NAVD88 (Computed using GEOID12A)]	

507.85

	UTM COORDINATES (Zone 17)	STATE PLANE COORDINATES (3103 NY W)
Northing (Y) [meters]	4783229.870	353006.620
Easting (X) [meters]	687750.942	341337.403
Convergence [degrees]	1.58121146	-0.07291062
Point Scale	1.00003365	0.99993842
Combined Factor	1.00001497	0.99991975

US NATIONAL GRID DESIGNATOR: 17TPH8775083229(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DI0444	NYBT BATAVIA CORS ARP	N425917.960	W0780720.375	50819.1
DI0458	NYHB HAMBURG CORS ARP	N424302.663	W0785047.273	52796.7
DI0614	NYPF PITTSFORD CORS ARP	N430535.484	W0773131.112	95224.3
DO5128	CBRG COBOURG CORS ARP	N435723.258	W0780951.768	96295.6
DI1872	NYFD FREDONIA NY CORS ARP	N422541.785	W0792022.719	98850.1
DI1870	NYDV DANSVILLE CORS ARP	N423256.093	W0774152.595	107065.7
DI0620	NYSM SALAMANCA CORS ARP	N421131.381	W0784450.465	109688.0
DI0626	NYWL WATERLOO CORS ARP	N425355.227	W0765107.302	152955.1

NEAREST NGS PUBLISHED CONTROL POINT

OG0600	ROBIN 4A LGC 1972	N431046.943	W0784148.467	576.5

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

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WELL/BORING No. OU2-GW01

SUBCONTRACTOR	Geologic Inc.	SITE NAME / LOCATION	Eighteenmile Creek
DRILLER	Joe Menzel	E & E PROJECT ID	1002964.0002.03.03
E & E GEOLOGIST	B. Cole		
DATE	12/5/2014		

WATER LEVEL DATA

DATE	TIME	WATER LEVEL	REF. PT.

TYPE OF DRILL RIG	6620DT
AUGER / CASING SIZE	2 inch Macrocore
SOIL SAMPLING METHOD	Direct push
FINISHED TOTAL DEPTH	8.9'

Depth (ft. BGS)	SAMPLE INFORMATION: Core/SS No.	Blow Count	Recovery (ft)	PID/FID (ppm)	Lab/Field Sample ID & Analysis	SOIL DESCRIPTION / COMMENTS
1	1	NA	2.2	BG		1.1' brown silty organic soil with little clay, moist
						0.4' light gray dry pulverized rock
						Remainder is dry brown silt, trace clay
2						
3						
4						
	2	NA	2.7	BG		All is dry to slightly moist brown silty clay, exept bottom 0.3', crushed gray limestone, dry
5						
6						
7						
8						
	3	NA	0.2	BG	OU2-GW01 1555	All wet brown silty clay mixed with pulverized rock
					Also field dup	
9						
10						
11						
12						
13						
14						
15						
16						

Method of Completion / Backfill: Soil cuttigns backfilled into borehole

Signature:

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WELL/BORING No. OU2-GW02

SUBCONTRACTOR	Geologic Inc.	SITE NAME / LOCATION	Eighteenmile Creek
DRILLER	Joe Menzel	E & E PROJECT ID	1002964.0002.03.03
E & E GEOLOGIST	B. Cole		
DATE	12/5/2014		

WATER LEVEL DATA

DATE	TIME	WATER LEVEL	REF. PT.

TYPE OF DRILL RIG	6620DT
AUGER / CASING SIZE	2 inch Macrocore
SOIL SAMPLING METHOD	Direct push
FINISHED TOTAL DEPTH	6.9'

Depth (ft. BGS)	SAMPLE INFORMATION: Core/SS No.	Blow Count	Recovery (ft)	PID/FID (ppm)	Lab/Field Sample ID & Analysis	SOIL DESCRIPTION / COMMENTS
1	1	NA	3.0	BG		0.7' dark brown silty soil with grass, few fine gravel, trace clay
						Remainder is brown silt, little to trace clay, slightly moist
2						
3						
4						
5	2	NA	2.2	BG		0.9' brown silty clay, trace wood and fine gravel, possible fill
						1.3' tan pulverized rock (limestone) mixed with little brown silty clay
6						
7						Refusal at 6.9' bgs
8						
9						
10						
11						
12						
13						
14						
15						
16						

Method of Completion / Backfill: Soil cuttigns backfilled into borehole

Signature:

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WELL/BORING No. OU2-GW03

SUBCONTRACTOR	Geologic Inc.	SITE NAME / LOCATION	Eighteenmile Creek
DRILLER	Joe Menzel	E & E PROJECT ID	1002964.0002.03.03
E & E GEOLOGIST	B. Cole		
DATE	12/5/2014		

WATER LEVEL DATA

DATE	TIME	WATER LEVEL	REF. PT.

TYPE OF DRILL RIG	6620DT
AUGER / CASING SIZE	2 inch Macrocore
SOIL SAMPLING METHOD	Direct push
FINISHED TOTAL DEPTH	7.6'

Depth (ft. BGS)	SAMPLE INFORMATION: Core/SS No.	Blow Count	Recovery (ft)	PID/FID (ppm)	Lab/Field Sample ID & Analysis	SOIL DESCRIPTION / COMMENTS
1	1	NA	3.6'	BG		0.9' dark brown silty soil, little clay, few fine gravel, wood, organics
						0.4' dry gray silt with some gray angular limestone gravel
						Remainder is redish brown silt with little clay, few fine rounded gravel
2						
3						
4						
	2	NA	3.5'	BG		All dry brown silty clay with little fine gravel, little wood debris, looks like fill
5						
6						
7						
						Refusal at 7.6' bgs
8						
9						
10						
11						
12						
13						
14						
15						
16						

Method of Completion / Backfill: Soil cuttigns backfilled into borehole

Signature:

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WELL/BORING No. OU2-GW04

SUBCONTRACTOR	Geologic Inc.	SITE NAME / LOCATION	Eighteenmile Creek
DRILLER	Joe Menzel	E & E PROJECT ID	1002964.0002.03.03
E & E GEOLOGIST	B. Cole		
DATE	12/5/2014		

WATER LEVEL DATA

DATE	TIME	WATER LEVEL	REF. PT.

TYPE OF DRILL RIG	6620DT
AUGER / CASING SIZE	2 inch Macrocore
SOIL SAMPLING METHOD	Direct push
FINISHED TOTAL DEPTH	3.1'

Depth (ft. BGS)	SAMPLE INFORMATION: Core/SS No.	Blow Count	Recovery (ft)	PID/FID (ppm)	Lab/Field Sample ID & Analysis	SOIL DESCRIPTION / COMMENTS
1	1	NA	1.8'	BG		0.4' dark brown silty soil, few fien gravel, little grass
						Remainder is broken gray rock - limestone/dolostone
2						
3						Refusal at 3.1' bgs
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

Method of Completion / Backfill: Soil cuttigns backfilled into borehole

Signature:

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WELL/BORING No. OU2-GW05

SUBCONTRACTOR	Geologic Inc.	SITE NAME / LOCATION	Eighteenmile Creek
DRILLER	Joe Menzel	E & E PROJECT ID	1002964.0002.03.03
E & E GEOLOGIST	B. Cole		
DATE	12/5/2014		

WATER LEVEL DATA

DATE	TIME	WATER LEVEL	REF. PT.

TYPE OF DRILL RIG	6620DT
AUGER / CASING SIZE	2 inch Macrocore
SOIL SAMPLING METHOD	Direct push
FINISHED TOTAL DEPTH	3.2'

Depth (ft. BGS)	SAMPLE INFORMATION: Core/SS No.	Blow Count	Recovery (ft)	PID/FID (ppm)	Lab/Field Sample ID & Analysis	SOIL DESCRIPTION / COMMENTS
						0.3' broken black asphalt
						Remainder is dark brown silty clay with few mixed gravel
1						
2	1	NA	1.8'	BG		
3						
						Refusal at 3.2' bgs
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

Method of Completion / Backfill: Soil cuttigns backfilled into borehole

Signature:

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WELL/BORING No. OU2-GW06

SUBCONTRACTOR	Geologic Inc.	SITE NAME / LOCATION	Eighteenmile Creek
DRILLER	Joe Menzel	E & E PROJECT ID	1002964.0002.03.03
E & E GEOLOGIST	B. Cole		
DATE	12/5/2014		

WATER LEVEL DATA

DATE	TIME	WATER LEVEL	REF. PT.

TYPE OF DRILL RIG	6620DT
AUGER / CASING SIZE	2 inch Macrocore
SOIL SAMPLING METHOD	Direct push
FINISHED TOTAL DEPTH	8.6'

Depth (ft. BGS)	SAMPLE INFORMATION: Core/SS No.	Blow Count	Recovery (ft)	PID/FID (ppm)	Lab/Field Sample ID & Analysis	SOIL DESCRIPTION / COMMENTS
1	1	NA	3.0'	BG		0.7' dark brown silty soil with grass and organic debris
2						Remainder is dry gray-brown silt with few mixed gravel. Possible silty fill.
3						
4						
5	2	NA	2.9'	BG		1.1' gray and brown silt, few mixed gravel
6						0.7' tan silty clay
7						1.1' dry tan silt with few fractured coarse gravel
8						
9	3	NA	0.3'	BG		All dry to slightly moist brown silt with little clay, few fine gravel (shale), crushed light gray rock in shoe
10						
11						
12						
13						
14						
15						
16						

Method of Completion / Backfill: Soil cuttigns backfilled into borehole

Signature:

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WELL/BORING No. OU2-SB01

SUBCONTRACTOR	Geologic Inc.	SITE NAME / LOCATION	Eighteenmile Creek
DRILLER	Joe Menzel	E & E PROJECT ID	1002964.0002.03.03
E & E GEOLOGIST	B. Cole		
DATE	12/4/2014		

WATER LEVEL DATA

DATE	TIME	WATER LEVEL	REF. PT.

TYPE OF DRILL RIG	6620DT
AUGER / CASING SIZE	2 inch Macrocore
SOIL SAMPLING METHOD	Direct push
FINISHED TOTAL DEPTH	7.2'

Depth (ft. BGS)	SAMPLE INFORMATION: Core/SS No.	Blow Count	Recovery (ft)	PID/FID (ppm)	Lab/Field Sample ID & Analysis	SOIL DESCRIPTION / COMMENTS
						0.2' brown and dark gray mixed sand, gravel, leaves, wood, coal, slag, dry
						1.8' of black and dark gray mixed sand and fine gravel, coal slag, loose, dry
1					OU2-SB01-Z1 1-1.5'	Remainder is gray pulverized rock and brown dry silt, loose
					1000 VOC @ 1.1'	
2	1	NA	2.7'	BG		
					OU2-SB01-Z2 2-3'	
3					1010 VOC@2.5'	
4						2.0' of brown, dense, dry silty clay
						0.8' light brown pulverized rock and fine sand
5						0.4' brown silty clay, slightly moist
6	2	NA	3.2	BG	OU2-SB01-Z3 6.8-7.2'	
					1110 VOC@7.1'	
7						Refusal at 7.2' bgs
8						
9						
10						
11						
12						
13						
14						
15						
16						

Method of Completion / Backfill: Soil cuttigns backfilled into borehole

Signature:

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WELL/BORING No. OU2-SB02

SUBCONTRACTOR	Geologic Inc.	SITE NAME / LOCATION	Eighteenmile Creek
DRILLER	Joe Menzel	E & E PROJECT ID	1002964.0002.03.03
E & E GEOLOGIST	B. Cole		
DATE	12/5/2014		

WATER LEVEL DATA

DATE	TIME	WATER LEVEL	REF. PT.

TYPE OF DRILL RIG	6620DT
AUGER / CASING SIZE	2 inch Macrocore
SOIL SAMPLING METHOD	Direct push
FINISHED TOTAL DEPTH	5.9'

Depth (ft. BGS)	SAMPLE INFORMATION: Core/SS No.	Blow Count	Recovery (ft)	PID/FID (ppm)	Lab/Field Sample ID & Analysis	SOIL DESCRIPTION / COMMENTS
						2.0' loose, black, dry sand/slag/fine gravel
						0.3' brown, dry, silty clay
1					OU2-SB02-Z1 1-1.5'	
					1125 VOC@1.2'	
2	1	NA	2.3'	BG		
					OU2-SB02-Z2 2-3'	
3					1130 VOC@2.5'	
4						All brown, dry silty clay with few fine gravel
5					OU2-SB02-Z3 5.4-5.9'	
					1200 VOC@5.5'	Refusal at 5.9' bgs
6	2	NA		BG		
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

Method of Completion / Backfill: Soil cuttigns backfilled into borehole

Signature:

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WELL/BORING No. OU2-SB03

SUBCONTRACTOR	Geologic Inc.	SITE NAME / LOCATION	Eighteenmile Creek
DRILLER	Joe Menzel	E & E PROJECT ID	1002964.0002.03.03
E & E GEOLOGIST	B. Cole		
DATE	12/5/2014		

WATER LEVEL DATA

DATE	TIME	WATER LEVEL	REF. PT.

TYPE OF DRILL RIG	6620DT
AUGER / CASING SIZE	2 inch Macrocore
SOIL SAMPLING METHOD	Direct push
FINISHED TOTAL DEPTH	5.4'

Depth (ft. BGS)	SAMPLE INFORMATION: Core/SS No.	Blow Count	Recovery (ft)	PID/FID (ppm)	Lab/Field Sample ID & Analysis	SOIL DESCRIPTION / COMMENTS
						All black sandy fill with slag, cinders, coal, few fragments red brick, loose, dry
1						
					OU2-SB03-Z1 1-1.5'	
					1210 VOC@1.1'	
2	1	NA	2.4'	BG		
					OU2-SB03-Z2 2-2.5'	
3					1220 VOC@2.1'	
4						All dry brown silt, little gravel (pulverized limestone)
					OU2-SB03-Z3 4.5-5'	
5					1230 VOC@4.6'	
						Refusal at 5.4' bgs
6	2	NA	1.2'	BG		
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

Method of Completion / Backfill: Soil cuttigns backfilled into borehole

Signature:

Trip Reports

SAMPLING TRIP REPORT

Site Name	Eighteen Mile Creek Superfund Site – Operable Unit 2
CERCLIS ID	NYN000206456
Sampling Dates	11/25/2014 to 12/11/2014
CLP Case Number	44889
Site Location	Lockport, New York

Sample Descriptions: Samples described in this trip report represent surface soils sampled for site background, surface soils sampled at Upson Park, and subsurface soils sampled at the Flintkote site.

Laboratories Receiving Samples (Table 1):

Case Number	Sample Type & No.	Name and Address of Laboratory
44889	CLP TCL Organics	ALS Laboratory Group – Salt Lake City 960 West LeVoy Drive Salt Lake City, UT 84123
44889	CLP TAL Total Metals/ICP-AES + Hg	ALS Laboratory Group – Salt Lake City 960 West LeVoy Drive Salt Lake City, UT 84123
44889	CLP TCL Volatiles	ALS Laboratory Group – Salt Lake City 960 West LeVoy Drive Salt Lake City, UT 84123
44889	CLP Dioxins/Furans	Cape Fear Analytical, LLC 3306 Kitty Hawk Road Wilmington, NC 28405
44889	CLP 209 CBCs	Cape Fear Analytical, LLC 3306 Kitty Hawk Road Wilmington, NC 28405

Sample Dispatch Data (Table 2):

Seventy-two (72) field samples and five (5) field duplicates were shipped to ALS Laboratory Group for various organic analyses as summarized below. One trip blank was shipped per cooler for a total of three (3) water samples.

Summary of Organic Samples			
EPA Methods Organic	**Sample Type**	**Number of Samples**	**Number of Field Duplicates**
Semi-volatiles, Aroclors, Pesticides	Soil	43	3
Low/Medium Level Volatiles	Soil	29	2
Low Level Volatiles	DI Water	3	0

Forty-three (43) field samples and three (3) field duplicates were shipped to ALS Laboratory Group total metals and mercury analyses as summarized below.

Summary of Inorganic Samples			
EPA Methods Inorganic	**Sample Type**	**Number of Samples**	**Number of Field Duplicates**
Total Metals and Mercury	Soil	43	3

Seventeen (17) field samples and one (1) field duplicate were shipped to Cape Fear Analytical for dioxin/furan and PCB Congener analyses as summarized below.

Summary of Organic Samples			
EPA Methods Organic	**Sample Type**	**Number of Samples**	**Number of Field Duplicates**
Dioxins/Furans	Soil	11	1
209 CBCs	Soil	6	0

Sampling Personnel (Table 3):

Name	Organization	Site Duties
Bob Meyers	Ecology and Environment, Inc.	Site Geologist
Ben Cole	Ecology and Environment, Inc.	Field Team Leader/Health & Safety Officer
Lynne Kalmbach	Ecology and Environment, Inc.	Sample Manager
Larry Roedl	Ecology and Environment, Inc.	Field Sampler

Sample Numbers and Collection Points (Table 4):

Lab	Sampling Event	Analyses	Sample Type	Sample Number	Sample Location	Sample Depth, ft	Field Duplicate
ALS Laboratory Group	Background	CLP Pesticides	Soil	B0AA1	BG1-SS01	0.5-2.0	
		CLP Semivolatiles	Soil	B0AA1	BG1-SS01	0.5-2.0	
		CLP Aroclors	Soil	B0AA1	BG1-SS01	0.5-2.0	
		CLP Pesticides	Soil	B0AA0	BG1-SS01	0-0.5	
		CLP Aroclors	Soil	B0AA0	BG1-SS01	0-0.5	
		CLP Semivolatiles	Soil	B0AA0	BG1-SS01	0-0.5	
		CLP Semivolatiles	Soil	B0AA4	BG1-SS02	0.5-2.0	
		CLP Aroclors	Soil	B0AA4	BG1-SS02	0.5-2.0	
		CLP Pesticides	Soil	B0AA4	BG1-SS02	0.5-2.0	
		CLP Pesticides	Soil	B0AA3	BG1-SS02	0-0.5	B0AB6
		CLP Semivolatiles	Soil	B0AA3	BG1-SS02	0-0.5	B0AB6
		CLP Aroclors	Soil	B0AA3	BG1-SS02	0-0.5	B0AB6
		CLP Aroclors	Soil	B0AA5	BG1-SS03	0-0.5	
		CLP Semivolatiles	Soil	B0AA5	BG1-SS03	0-0.5	
		CLP Pesticides	Soil	B0AA5	BG1-SS03	0-0.5	
		CLP Pesticides	Soil	B0AB1	BG1-SS03	0.5-2.0	
		CLP Semivolatiles	Soil	B0AB1	BG1-SS03	0.5-2.0	
		CLP Aroclors	Soil	B0AB1	BG1-SS03	0.5-2.0	

Lab	Sampling Event	Analyses	Sample Type	Sample Number	Sample Location	Sample Depth, ft	Field Duplicate
		CLP Pesticides	Soil	B0AB2	BG1-SS04	0.5-2.0	
		CLP Aroclors	Soil	B0AB2	BG1-SS04	0.5-2.0	
		CLP Semivolatiles	Soil	B0AB2	BG1-SS04	0.5-2.0	
ALS Laboratory Group	Background	CLP Pesticides	Soil	B0AA6	BG1-SS04	0-0.5	
		CLP Semivolatiles	Soil	B0AA6	BG1-SS04	0-0.5	
		CLP Aroclors	Soil	B0AA6	BG1-SS04	0-0.5	
		CLP Pesticides	Soil	B0AA7	BG1-SS05	0-0.5	
		CLP Semivolatiles	Soil	B0AA7	BG1-SS05	0-0.5	
		CLP Aroclors	Soil	B0AA7	BG1-SS05	0-0.5	
		CLP Pesticides	Soil	B0AB3	BG1-SS05	0.5-2.0	
		CLP Semivolatiles	Soil	B0AB3	BG1-SS05	0.5-2.0	
		CLP Aroclors	Soil	B0AB3	BG1-SS05	0.5-2.0	
		CLP Aroclors	Soil	B0AA8	BG1-SS06	0-0.5	
		CLP Semi-volatiles	Soil	B0AA8	BG1-SS06	0-0.5	
		CLP Pesticides	Soil	B0AA8	BG1-SS06	0-0.5	
		CLP Pesticides	Soil	B0AB4	BG1-SS06	0.5-2.0	
		CLP Semi-volatiles	Soil	B0AB4	BG1-SS06	0.5-2.0	
		CLP Aroclors	Soil	B0AB4	BG1-SS06	0.5-2.0	
		CLP Semi-volatiles	Soil	B0AB5	BG1-SS07	0.5-2.0	
		CLP Pesticides	Soil	B0AB0	BG1-SS07	0-0.5	
		CLP Semi-volatiles	Soil	B0AB0	BG1-SS07	0-0.5	
		CLP Aroclors	Soil	B0AB0	BG1-SS07	0-0.5	
		CLP Pesticides	Soil	B0AB5	BG1-SS07	0.5-2.0	
		CLP Aroclors	Soil	B0AB5	BG1-SS07	0.5-2.0	
ALS Laboratory Group	Flintkote Site	CLP Pesticides	Soil	B0AE1	OU2-SB01	2-3	
		CLP Pesticides	Soil	B0AE0	OU2-SB01	1-1.5	B0AE9
		CLP Semi-volatiles	Soil	B0AE0	OU2-SB01	1-1.5	B0AE9
		CLP Aroclors	Soil	B0AE0	OU2-SB01	1-1.5	B0AE9
		CLP Semi-volatiles	Soil	B0AE1	OU2-SB01	2-3	
		CLP Aroclors	Soil	B0AE1	OU2-SB01	2-3	
		CLP Pesticides	Soil	B0AE2	OU2-SB01	6.8-7.2	
		CLP Aroclors	Soil	B0AE2	OU2-SB01	6.8-7.2	
		CLP Semi-volatiles	Soil	B0AE2	OU2-SB01	6.8-7.2	
		CLP Aroclors	Soil	B0AE5	OU2-SB02	5.4-5.9	
		CLP Semi-volatiles	Soil	B0AE5	OU2-SB02	5.4-5.9	
		CLP Pesticides	Soil	B0AE5	OU2-SB02	5.4-5.9	
		CLP Pesticides	Soil	B0AE3	OU2-SB02	1-1.5	
		CLP Aroclors	Soil	B0AE4	OU2-SB02	2-3	
		CLP Semi-volatiles	Soil	B0AE3	OU2-SB02	1-1.5	
		CLP Semi-volatiles	Soil	B0AE4	OU2-SB02	2-3	
		CLP Aroclors	Soil	B0AE3	OU2-SB02	1-1.5	
		CLP Pesticides	Soil	B0AE4	OU2-SB02	2-3	
		CLP Pesticides	Soil	B0AE6	OU2-SB03	1-1.5	
		CLP Semi-volatiles	Soil	B0AE6	OU2-SB03	1-1.5	
		CLP Aroclors	Soil	B0AE6	OU2-SB03	1-1.5	
		CLP Pesticides	Soil	B0AE7	OU2-SB03	2-2.5	
		CLP Semi-volatiles	Soil	B0AE7	OU2-SB03	2-2.5	
		CLP Aroclors	Soil	B0AE7	OU2-SB03	2-2.5	

Lab	Sampling Event	Analyses	Sample Type	Sample Number	Sample Location	Sample Depth, ft	Field Duplicate
		CLP Aroclors	Soil	B0AE8	OU2-SB03	4.5-5	
		CLP Semi-volatiles	Soil	B0AE8	OU2-SB03	4.5-5	
		CLP Pesticides	Soil	B0AE8	OU2-SB03	4.5-5	
ALS Laboratory Group	Upson Park	CLP Pesticides	Soil	B0AB8	OU2-SS01	0.5-2	
		CLP Semi-volatiles	Soil	B0AB8	OU2-SS01	0.5-2	
		CLP Semi-volatiles	Soil	B0AB7	OU2-SS01	0-0.5	
		CLP Aroclors	Soil	B0AB8	OU2-SS01	0.5-2	
		CLP Pesticides	Soil	B0AB7	OU2-SS01	0-0.5	
		CLP Aroclors	Soil	B0AB7	OU2-SS01	0.5-2	
		CLP Aroclors	Soil	B0AB9	OU2-SS02	0-0.5	
		CLP Semi-volatiles	Soil	B0AB9	OU2-SS02	0-0.5	
		CLP Semi-volatiles	Soil	B0AC0	OU2-SS02	0.5-2	
		CLP Pesticides	Soil	B0AB9	OU2-SS02	0-0.5	
		CLP Pesticides	Soil	B0AC0	OU2-SS02	0.5-2	
		CLP Aroclors	Soil	B0AC0	OU2-SS02	0.5-2	
		CLP Aroclors	Soil	B0AC2	OU2-SS03	0.5-2	
		CLP Semi-volatiles	Soil	B0AC2	OU2-SS03	0.5-2	
		CLP Pesticides	Soil	B0AC2	OU2-SS03	0.5-2	
		CLP Pesticides	Soil	B0AC1	OU2-SS03	0-0.5	B0AD7
		CLP Semi-volatiles	Soil	B0AC1	OU2-SS03	0-0.5	B0AD7
		CLP Aroclors	Soil	B0AC1	OU2-SS03	0-0.5	B0AD7
		CLP Pesticides	Soil	B0AC3	OU2-SS04	0-0.5	
		CLP Semi-volatiles	Soil	B0AC3	OU2-SS04	0-0.5	
		CLP Aroclors	Soil	B0AC3	OU2-SS04	0-0.5	
		CLP Pesticides	Soil	B0AC4	OU2-SS04	0.5-2	
		CLP Semi-volatiles	Soil	B0AC4	OU2-SS04	0.5-2	
		CLP Aroclors	Soil	B0AC4	OU2-SS04	0.5-2	
		CLP Semi-volatiles	Soil	B0AC5	OU2-SS05	0-0.5	
		CLP Pesticides	Soil	B0AC6	OU2-SS05	0.5-2	
		CLP Pesticides	Soil	B0AC5	OU2-SS05	0-0.5	
		CLP Aroclors	Soil	B0AC5	OU2-SS05	0-0.5	
		CLP Semi-volatiles	Soil	B0AC6	OU2-SS05	0.5-2	
		CLP Aroclors	Soil	B0AC6	OU2-SS05	0.5-2	
		CLP Pesticides	Soil	B0AC7	OU2-SS06	0-0.5	
		CLP Aroclors	Soil	B0AC7	OU2-SS06	0-0.5	
		CLP Pesticides	Soil	B0AC8	OU2-SS06	0.5-2	
		CLP Semi-volatiles	Soil	B0AC8	OU2-SS06	0.5-2	
		CLP Aroclors	Soil	B0AC8	OU2-SS06	0.5-2	
		CLP Semi-volatiles	Soil	B0AC7	OU2-SS06	0-0.5	
		CLP Pesticides	Soil	B0AD0	OU2-SS07	0.5-2	
		CLP Pesticides	Soil	B0AC9	OU2-SS07	0-0.5	
		CLP Aroclors	Soil	B0AC9	OU2-SS07	0-0.5	
		CLP Semi-volatiles	Soil	B0AD0	OU2-SS07	0.5-2	
		CLP Aroclors	Soil	B0AD0	OU2-SS07	0.5-2	
		CLP Semi-volatiles	Soil	B0AC9	OU2-SS07	0-0.5	
		CLP Aroclors	Soil	B0AD2	OU2-SS08	0.5-2	
		CLP Semi-volatiles	Soil	B0AD2	OU2-SS08	0.5-2	
		CLP Pesticides	Soil	B0AD1	OU2-SS08	0-0.5	

Lab	Sampling Event	Analyses	Sample Type	Sample Number	Sample Location	Sample Depth, ft	Field Duplicate
		CLP Semi-volatiles	Soil	B0AD1	OU2-SS08	0-0.5	
		CLP Aroclors	Soil	B0AD1	OU2-SS08	0-0.5	
		CLP Pesticides	Soil	B0AD2	OU2-SS08	0.5-2	
		CLP Pesticides	Soil	B0AD4	OU2-SS09	0.5-2	
		CLP Semi-volatiles	Soil	B0AD3	OU2-SS09	0-0.5	
		CLP Aroclors	Soil	B0AD3	OU2-SS09	0-0.5	
		CLP Semi-volatiles	Soil	B0AD4	OU2-SS09	0.5-2	
		CLP Aroclors	Soil	B0AD4	OU2-SS09	0.5-2	
		CLP Pesticides	Soil	B0AD3	OU2-SS09	0-0.5	
		CLP Pesticides	Soil	B0AD6	OU2-SS10	0.5-2	
		CLP Pesticides	Soil	B0AD5	OU2-SS10	0-0.5	
		CLP Aroclors	Soil	B0AD5	OU2-SS10	0-0.5	
		CLP Semi-volatiles	Soil	B0AD6	OU2-SS10	0.5-2	
		CLP Aroclors	Soil	B0AD6	OU2-SS10	0.5-2	
		CLP Semi-volatiles	Soil	B0AD5	OU2-SS10	0-0.5	

Lab	Sampling Event	Analyses	Sample Type	SDG	Sample Number	Sample Location	Sample Depth, ft	Field Duplicate
ALS Laboratory Group	Background	CLP TAL Total Metals/ICP-AES + Hg	Soil	MB0AA0	MB0AA0	BG1-SS01	0-0.5	
		CLP TAL Total Metals/ICP-AES + Hg	Soil	MB0AA0	MB0AA1	BG1-SS01	0.5-2	
		CLP TAL Total Metals/ICP-AES + Hg	Soil	MB0AA0	MB0AA4	BG1-SS02	0.5-2	
		CLP TAL Total Metals/ICP-AES + Hg	Soil	MB0AA0	MB0AA3	BG1-SS02	0-0.5	MB0AB6
		CLP TAL Total Metals/ICP-AES + Hg	Soil	MB0AA0	MB0AA5	BG1-SS03	0-0.5	
		CLP TAL Total Metals/ICP-AES + Hg	Soil	MB0AA0	MB0AB1	BG1-SS03	0.5-2	
		CLP TAL Total Metals/ICP-AES + Hg	Soil	MB0AA0	MB0AA6	BG1-SS04	0-0.5	
		CLP TAL Total Metals/ICP-AES + Hg	Soil	MB0AA0	MB0AB2	BG1-SS04	0.5-2	
		CLP TAL Total Metals/ICP-AES + Hg	Soil	MB0AA0	MB0AA7	BG1-SS05	0-0.5	
		CLP TAL Total Metals/ICP-AES + Hg	Soil	MB0AA0	MB0AB3	BG1-SS05	0.5-2	

Lab	Sampling Event	Analyses	Sample Type	SDG	Sample Number	Sample Location	Sample Depth, ft	Field Duplicate
		CLP TAL Total Metals/ICP-AES + Hg	Soil	MB0AA0	MB0AA8	BG1-SS06	0-0.5	
		CLP TAL Total Metals/ICP-AES + Hg	Soil	MB0AA0	MB0AB4	BG1-SS06	0.5-2	
		CLP TAL Total Metals/ICP-AES + Hg	Soil	MB0AA0	MB0AB0	BG1-SS07	0-0.5	
		CLP TAL Total Metals/ICP-AES + Hg	Soil	MB0AA0	MB0AB5	BG1-SS07	0.5-2	
	Flintkote Site	CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AE0	OU2-SB01	1-1.5	MB0AE9
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AE1	OU2-SB01	2-3	
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AE2	OU2-SB01	6.8-7.2	
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AE4	OU2-SB02	2-3	
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AE3	OU2-SB02	1-1.5	
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AE5	OU2-SB02	5.4-5.9	
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AE8	OU2-SB03	4.5-5	
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AE7	OU2-SB03	2-2.5	
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AE6	OU2-SB03	1-1.5	
	Upson Park	CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AB8	OU2-SS01	0.5-2	
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AB7	OU2-SS01	0-0.5	
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AC0	OU2-SS02	0.5-2	

Lab	Sampling Event	Analyses	Sample Type	SDG	Sample Number	Sample Location	Sample Depth, ft	Field Duplicate
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AB9	OU2-SS02	0-0.5	
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AC2	OU2-SS03	0.5-2	
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AC1	OU2-SS03	0-0.5	MB0AD7
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AC4	OU2-SS04	0.5-2	
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AC3	OU2-SS04	0-0.5	
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AC5	OU2-SS05	0-0.5	
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AC6	OU2-SS05	0.5-2	
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AC7	OU2-SS06	0-0.5	
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AC8	OU2-SS06	0.5-2	
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AC9	OU2-SS07	0-0.5	
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AD0	OU2-SS07	0.5-2	
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AD1	OU2-SS08	0-0.5	
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AD2	OU2-SS08	0.5-2	
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AD4	OU2-SS09	0.5-2	
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AD3	OU2-SS09	0-0.5	
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AD5	OU2-SS10	0-0.5	

Lab	Sampling Event	Analyses	Sample Type	SDG	Sample Number	Sample Location	Sample Depth, ft	Field Duplicate
		CLP TAL Total Metals/ICP-AES + Hg	Soil		MB0AD6	OU2-SS10	0.5-2	

Lab	Sampling Event	Analyses	Sample Type	Sample Number	Sample Location	Sample Depth, ft	Field Duplicate
ALS Laboratory Group	Flintkote Site	CLP Volatiles	Soil	B0AE0	OU2-SB01	1-1.5	B0AE9
		CLP Volatiles	Soil	B0AE2	OU2-SB01	6.8-7.2	
		CLP Volatiles	Soil	B0AE1	OU2-SB01	2-3	
		CLP Volatiles	Soil	B0AE5	OU2-SB02	5.4-5.9	
		CLP Volatiles	Soil	B0AE4	OU2-SB02	2-3	
		CLP Volatiles	Soil	B0AE3	OU2-SB02	1-1.5	
		CLP Volatiles	Soil	B0AE8	OU2-SB03	4.5-5	
		CLP Volatiles	Soil	B0AE7	OU2-SB03	2-2.5	
		CLP Volatiles	Soil	B0AE6	OU2-SB03	1-1.5	
		CLP Volatiles	Water	B0AF0	Trip Blank	--	
	Upson Park	CLP Volatiles	Soil	B0AB8	OU2-SS01	0.5-2	
		CLP Volatiles	Soil	B0AB7	OU2-SS01	0-0.5	
		CLP Volatiles	Soil	B0AC0	OU2-SS02	0.5-2	
		CLP Volatiles	Soil	B0AB9	OU2-SS02	0-0.5	
		CLP Volatiles	Soil	B0AC2	OU2-SS03	0.5-2	
		CLP Volatiles	Soil	B0AC1	OU2-SS03	0-0.5	B0AD7
		CLP Volatiles	Soil	B0AC4	OU2-SS04	0.5-2	
		CLP Volatiles	Soil	B0AC3	OU2-SS04	0-0.5	
		CLP Volatiles	Soil	B0AC6	OU2-SS05	0.5-2	
		CLP Volatiles	Soil	B0AC5	OU2-SS05	0-0.5	
		CLP Volatiles	Soil	B0AC7	OU2-SS06	0-0.5	
		CLP Volatiles	Soil	B0AC8	OU2-SS06	0.5-2	
		CLP Volatiles	Soil	B0AC9	OU2-SS07	0-0.5	
		CLP Volatiles	Soil	B0AD0	OU2-SS07	0.5-2	
		CLP Volatiles	Soil	B0AD1	OU2-SS08	0-0.5	
		CLP Volatiles	Soil	B0AD2	OU2-SS08	0.5-2	
		CLP Volatiles	Soil	B0AD4	OU2-SS09	0.5-2	
		CLP Volatiles	Soil	B0AD3	OU2-SS09	0-0.5	
		CLP Volatiles	Soil	B0AD5	OU2-SS10	0-0.5	
		CLP Volatiles	Soil	B0AD6	OU2-SS10	0.5-2	
		CLP Volatiles	Water	B0AD9	Trip Blank	--	
		CLP Volatiles	Water	B0AD8	Trip Blank	--	

Lab	Sampling Event	Analyses	Sample Type	Sample Number	Sample Location	Sample Depth, ft	Field Duplicate
Cape Fear Analytical	Background	CLP Dioxins/Furans	Soil	PB0AA0	BG1-SS01	0-0.5	PB0AB6
		CLP Dioxins/Furans	Soil	PB0AA3	BG1-SS02	0-0.5	
		CLP Dioxins/Furans	Soil	PB0AA5	BG1-SS03	0-0.5	
		CLP Dioxins/Furans	Soil	PB0AA6	BG1-SS04	0-0.5	
		CLP Dioxins/Furans	Soil	PB0AA7	BG1-SS05	0-0.5	

Lab	Sampling Event	Analyses	Sample Type	Sample Number	Sample Location	Sample Depth, ft	Field Duplicate
		CLP Dioxins/Furans	Soil	PB0AA8	BG1-SS06	0-0.5	
		CLP Dioxins/Furans	Soil	PB0AB0	BG1-SS07	0-0.5	
	Flintkote Site	CLP Dioxins/Furans	Soil	PB0AE3	OU2-SB02	1-1.5	
	Upson Park	CLP Dioxins/Furans	Soil	PB0AB9	OU2-SS02	0-0.5	
		CLP Dioxins/Furans	Soil	PB0AC5	OU2-SS05	0-0.5	
		CLP Dioxins/Furans	Soil	PB0AD3	OU2-SS09	0-0.5	

Lab	Sampling Event	Analyses	Sample Type	Sample Number	Sample Location	Sample Depth, ft	Field Duplicate
Cape Fear Analytical	Background	CLP 209 Congeners	Soil	PB0AA0	BG1-SS01	0-0.5	
		CLP 209 Congeners	Soil	PB0AA8	BG1-SS06	0-0.5	
	Flintkote Site	CLP 209 Congeners	Soil	PB0AE3	OU2-SB02	1-1.5	
	Upson Park	CLP 209 Congeners	Soil	PB0AB9	OU2-SS02	0-0.5	
		CLP 209 Congeners	Soil	PB0AC5	OU2-SS05	0-0.5	
		CLP 209 Congeners	Soil	PB0AD3	OU2-SS09	0-0.5	

There were no identification discrepancies to be noted.

SAMPLING TRIP REPORT

Site Name	Eighteen Mile Creek Superfund Site – Operable Unit 2
CERCLIS ID	NYN000206456
Sampling Dates	12/18/2014 to 12/19/2014
CLP Case Number	44889
Site Location	Lockport, New York

Sample Descriptions: Samples described in this trip report represent ground water sampled from the existing monitoring wells and the newly installed monitoring well.

Laboratories Receiving Samples (Table 1):

Case Number	Sample Type & No.	Name and Address of Laboratory
44889	CLP TCL Organics	ALS Laboratory Group – Salt Lake City 960 West LeVoy Drive Salt Lake City, UT 84123
44889	CLP TAL Total Metals/ICP-AES + Hg	ALS Laboratory Group – Salt Lake City 960 West LeVoy Drive Salt Lake City, UT 84123
44889	CLP TCL Volatiles	ALS Laboratory Group – Salt Lake City 960 West LeVoy Drive Salt Lake City, UT 84123

Sample Dispatch Data (Table 2):

Six (6) field samples and one (1) field duplicates were shipped to ALS Laboratory Group for various organic analyses as summarized below. One trip blank was shipped per cooler for a total of one (1) water blank.

Summary of Organic Samples			
EPA Methods Organic	**Sample Type**	**Number of Samples**	**Number of Field Duplicates**
Semi-volatiles, Aroclors, Pesticides	Ground Water	5	1
Trace Level Volatiles	Ground Water	6	1
Low Level Volatiles	DI Water	1	0

Five (5) field samples and one (1) field duplicate were shipped to ALS Laboratory Group for total metals and mercury analyses as summarized below.

Summary of Inorganic Samples			
EPA Methods Inorganic	**Sample Type**	**Number of Samples**	**Number of Field Duplicates**
Total Metals and Mercury	Ground Water	5	1

Sampling Personnel (Table 3):

Name	Organization	Site Duties
Bob Meyers	Ecology and Environment, Inc.	Site Geologist
Ben Cole	Ecology and Environment, Inc.	Field Team Leader/Health & Safety Officer
Lynne Kalmbach	Ecology and Environment, Inc.	Sample Manager
Sarah Craig	Ecology and Environment, Inc.	Field Sampler

Sample Numbers and Collection Points (Table 4):

Lab	Sampling Event	Analyses	Sample Type	Sample Number	Sample Location	Field Duplicate
ALS Laboratory Group	Monitoring Wells	CLP Pesticides	GW	B0AJ2	OU2-MW05	
		CLP Semi-volatiles	GW	B0AJ2	OU2-MW05	
		CLP Aroclors	GW	B0AJ2	OU2-MW05	
		CLP Pesticides	GW	B0AG4	OU2-MW14	
		CLP Semi-volatiles	GW	B0AG4	OU2-MW14	
		CLP Aroclors	GW	B0AG4	OU2-MW14	
		CLP Pesticides	GW	B0AG5	OU2-MW15	
		CLP Semi-volatiles	GW	B0AG5	OU2-MW15	
		CLP Aroclors	GW	B0AG5	OU2-MW15	
		CLP Pesticides	GW	B0AG6	OU2-MW16	B0AG8
		CLP Semi-volatiles	GW	B0AG6	OU2-MW16	B0AG8
		CLP Aroclors	GW	B0AG6	OU2-MW16	B0AG8
		CLP Pesticides	GW	B0AG7	OU2-MW18	
		CLP Semi-volatiles	GW	B0AG7	OU2-MW18	
		CLP Aroclors	GW	B0AG7	OU2-MW18	

Lab	Sampling Event	Analyses	Sample Type	Sample Number	Sample Location	Field Duplicate
ALS Laboratory Group	Monitoring Wells	CLP TAL Total Metals/ICP-MS + Hg	GW	MB0AJ2	OU2-MW05	
		CLP TAL Total Metals/ICP-MS + Hg	GW	MB0AG4	OU2-MW14	
		CLP TAL Total Metals/ICP-MS + Hg	GW	MB0AG5	OU2-MW15	
		CLP TAL Total Metals/ICP-MS + Hg	GW	MB0AG6	OU2-MW16	MB0AG8
		CLP TAL Total Metals/ICP-MS + Hg	GW	MB0AG7	OU2-MW18	

Lab	Sampling Event	Analyses	Sample Type	Sample Number	Sample Location	Field Duplicate
ALS Laboratory Group	Monitoring Wells	CLP Volatiles	GW	B0AG3	OU2-MW05	
		CLP Volatiles	GW	B0AG9	OU2-MW09	
		CLP Volatiles	GW	B0AG4	OU2-MW14	
		CLP Volatiles	GW	B0AG5	OU2-MW15	
		CLP Volatiles	GW	B0AG6	OU2-MW16	B0AG8
		CLP Volatiles	GW	B0AG7	OU2-MW18	
		CLP Volatiles	Water	B0AH7	Trip Blank	

The following samples were collected to characterize the investigative derived waste. The samples were shipped to ALS Laboratory Group for the analyses summarized below. These samples do not require validation.

Lab	Sampling Event	Analyses	Sample Type	Sample Number	Sample Location
ALS Laboratory Group	IDW	TCLP Semi-volatiles	Liquid Waste	B0AH7	IDW_Drum 1
		TCLP Pesticides	Liquid Waste	B0AH7	IDW_Drum 1
		TCLP Semi-volatiles	Solid Waste	B0AH3	IDW_Drum 5
		TCLP Pesticides	Solid Waste	B0AH3	IDW_Drum 5

Lab	Sampling Event	Analyses	Sample Type	Sample Number	Sample Location
ALS Laboratory Group	IDW	TCLP ICP-AES	Liquid Waste	MB0AH7	IDW_Drum 1
		TCLP ICP-AES	Solid Waste	MB0AH3	IDW_Drum 5

Lab	Sampling Event	Analyses	Sample Type	Sample Number	Sample Location
ALS Laboratory Group	IDW	TCLP VOA	Liquid Waste	B0AH7	IDW_Drum 1
		TCLP VOA	Solid Waste	B0AH3	IDW_Drum 5

The following sample identification discrepancies were noted. Laboratory and field identifications need to reconcile as noted in the review notes.

Correct Sample Name	SAMPLE TYPE	Scribe COC Data	Review Notes
Organic – Semi-volatiles, Pesticides and Aroclors			
OU2-MW05	N	OU2-GW05	The sample was recorded incorrectly on the vial and in the Scribe COC.
Inorganic			
OU2-MW05	N	OU2-GW05	The sample was recorded incorrectly on the vial and in the Scribe COC.

SAMPLING TRIP REPORT

Site Name	Eighteen Mile Creek Superfund Site – Operable Unit 2
CERCLIS ID	NYN000206456
Sampling Dates	05/18/2015 to 7/14/2015
Site Location	Lockport, New York

The following samples were collected for the Eighteen Mile Creek – OU2 Remedial Investigation/Feasibility study. During the Spring 2015 field effort, samples were collected from the six monitoring wells, sediment and surface water samples were collected from the OU2 corridor of Eighteen Mile Creek and from background locations. Soil samples were collected from Upson Park, and subsurface soils were collected from the Former Flintkote site.

All of the samples for chemical analysis were sent to TestAmerica Laboratories, Pittsburgh, Pennsylvania. The toxicity samples were sent to Great Lakes Environmental Center, Traverse City, Michigan.

Monitoring Wells

Five monitoring wells were sampled for the list of parameters outlined in Table 1. Monitoring well, MW09, was sampled for volatiles only. One trip blank was shipped per cooler for a total of three (3) trip blanks.

Table 1: Monitoring Well Sample Summary

Parameter	Method	Number of Samples	Field QC: Field Duplicates & MS/MSD
Ground Water	Semi-volatiles by SW846-8270	5	2
	PCB Aroclors by SW846-8082	5	2
	Pesticides by SW846-8081	5	2
	Trace Level Volatiles by SW846-8260	6	2
	TAL Metals by SW846-6020	5	2
	Mercury by SW846-7470	5	2
	Hexavalent Chromium by SW846-7196	1	0
Trip Blank	Trace Level Volatiles by SW846-8260	3	0

Upson Park

The following samples were collected in Upson Park to delineate the PCB contamination discovered during the sampling event in November 2014. Surface soil samples were collected at four locations within the park. Samples were collected at 3 intervals at each location: 0-0.5 feet, 0.5-2 feet, and 2-3 feet. A total of twelve field samples were collected. A rinsate blank was collected from the hand auger bucket and analyzed for PCB Aroclors.

Table 2: Upson Park Sample Summary

Parameter	Method	Number of Samples	Field QC: Field Duplicates & MS/MSD
Surface Soil	PCB Aroclors by SW846-8082	12	2
	PCB Congeners by SW846-1668	1	0
	Dioxin/Furans by SW846-1613	1	0
Rinsate Blank	PCB Aroclors by SW846-8082	1	0

Surface Water and Sediment

Surface water and sediment samples were collect from the OU2 corridor and background area. Three locations within the OU2 corridor were sampled from upstream of the Clinton Street dam, downstream of the Clinton Street dam, and at the bend in the creek adjacent from the former Flintkote Plant. One background sample was collected from the East Branch of the Eighteen Mile Creek in Gasport, New York. All samples were submitted for toxicology and chemical parameters as described in the Table 3. Six additional samples were collected at the background location for chemical analysis only. The sediment samples were collected using a petite ponar dredge, and a rinsate blank was collected from the dredge.

Table 3: Surface Water and Sediment Sample Summary

Parameter	Method	Number of Samples	Field QC: MS/MSD
Surface Water	PCB Congeners by SW846-1668	4	1
	Pesticides by SW846-8081	4	1
	Semi-volatiles by SW846-8270	4	1
	Trace Level Volatiles by SW846-8260	4	1
	Mercury by SW846-7470	4	1
	TAL Metals by SW846-6020	4	1
	Fathead Minnow, Pimephales promelas, Larval Survival and Growth Test by EPA Method 1000.1	4	0
	Daphnid, Ceriodaphnia dubia, Survival and Reproduction Test by EPA Method 1002.0	4	0
Sediment	PCB Congeners by SW846-1668	2	1
	Dioxin/Furans by SW846-1613	2	1
	PCB Aroclors by SW846-8082	10	1
	Pesticides by SW846-8081	10	1
	Semi-volatiles by SW846-8270	10	1
	Trace Level Volatiles by SW846-8260	10	1
	Mercury by SW846-7471	10	1
	TAL Metals by SW846-6020	10	1
	AVS/SEM by SW846-9034, 6010, 7470	4	0
	Hexavalent Chromium by SW846-7196	2	0

Parameter	Method	Number of Samples	Field QC: MS/MSD
	TOC by LloydKahn	10	1
	Hyalella azteca 42-day (chronic) Test for Measuring the Effects of Sediment associated Contaminants on Survival, Growth, and Reproduction by EPA Method 100.4	4	0
	20-day Test for Measuring the Effects of Sediment associated Contaminants on Chironomus tentans by EPA Method 100.5	4	0
Rinsate Blank	PCB Aroclors by SW846-8082	1	0
	Pesticides by SW846-8081	1	0
	Semi-volatiles by SW846-8270	1	0
	Trace Level Volatiles by SW846-8260	1	0
	Mercury by SW846-7471	1	0
	TAL Metals by SW846-6020	1	0

Fish Tissue

Fish tissue samples were collected from the OU2 corridor and background locations. Thirteen samples were collected from the OU2 corridor and fourteen samples were collected from the background location. The samples were analyzed for the chemistry parameters outlined in the Table 4. Less fish tissue were collected than planned; therefore, the analysis were prioritized as follows: PCBs > Pesticides > Dioxins/Furans > Metals > SVOCs.

Table 4: Fish Tissue Sample Summary

Parameter	Method	Number of Samples	Field QC: Field Duplicates & MS/MSD
Fish Tissue	PCB Congeners by SW846-1668	4	0
	Dioxin/Furans by SW846-1613	4	0
	PCB Aroclors by SW846-8082	27	0
	Pesticides by SW846-8081	27	0
	Semi-volatiles by SW846-8270	25	0
	Mercury by SW846-7471	26	0
	TAL Metals by SW846-6020	26	0
	Percent Lipids	22	0

Investigative Derived Waste

The purge water from the monitoring wells was collected in a steel drum. The water waste was sampled and analyzed for full TCLP parameters.

Table 5: Investigative Derived Waste Sample Summary

Parameter	Method	Number of Samples
IDW	TCLP Semi-volatiles by SW846-8270	1
	TCLP PCB Aroclors by SW846-8082	1
	TCLP Pesticides by SW846-8081	1
	TCLP Herbicides by SW846-8151	1
	TCLP Volatiles by SW846-8260	1
	TCLP Metals by SW846-6020	1
	TCLP Mercury by SW846-7470	1

The sample results are shown in the Table 6.

Table 6: Investigative Derived Waste Sample Summary

Parameter	Method	Analyte	Result	MDL	RL	units	Surface Water: Source of Drinking Water; Class C*	Contaminant Concentration for Toxicity†
IDW	SW6010C	Barium	0.086	0.0019	2	mg/l	1.0	100.0
	SW6010C	Selenium	0.037	0.017	0.1	mg/l	0.01	1.0
	SW6010C	Silver	0.0029	0.0027	0.05	mg/l	0.05	5.0
	SW7470A	Mercury	0.00097	0.00078	0.002	mg/l	0.0007	0.2
	SW8081B	gamma-Chlordane	0.0012	0.00091	0.0012	ug/l	0.05	0.03
	SW8260C	Methylene Chloride	4.3	1.1	5	ug/l	5.0	NA
	SW8270D	Diethyl phthalate	0.31	0.14	0.94	ug/l	50	NA

*New York State Department of Environmental Conservation, Technical and Operational Guidance Series Memorandum #1.1.1: *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations,* 1998 (with updates), Class C Surface water Standards and Guidance Values.

†New York State Department of Environmental Conservation, Technical and Operational Guidance Series Memorandum #1.1.1: *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations,* 1998 (with updates), Class C Surface water Standards and Guidance Values.

Toxicity Characteristics, Part 371(e)
The positive detections were all less than TCLP hazardous waste limits. It was recommended that the water to be dumped to ground at the Flintkote property.

Former Flintkote Site

The USEPA began the demolition of the Former Flintkote Plant during May 2015. During demolition, test pits were created and tested for the analytes below.

Parameter	Method	Number of Samples	Number of Field QC
Subsurface Soil	Semi-volatiles by SW846-8270	13	0
	PCB Aroclors by SW846-8082	13	0
	Pesticides by SW846-8081	13	0
	Trace Level Volatiles by SW846-8260	13	0
	TAL Metals by SW846-6020	13	0
	Mercury by SW846-7470	13	0
Sediment	Semi-volatiles by SW846-8270	2	0
	PCB Aroclors by SW846-8082	2	0
	Pesticides by SW846-8081	2	0
	Trace Level Volatiles by SW846-8260	2	0
	TAL Metals by SW846-6020	2	0
	Mercury by SW846-7470	2	0
Aqueous	PCB Aroclors by SW846-8082	2	0
	Trace Level Volatiles by SW846-8260	2	0

SAMPLING TRIP REPORT

Site Name	Eighteen Mile Creek Superfund Site – Operable Unit 2
CERCLIS ID	NYN000206456
Sampling Dates	01/25/2016 to 01/26/2016
CLP Case Number	45921
DESA Project Number	P-1601011
Site Location	Lockport, New York

Sample Descriptions: Samples described in this trip report represent surface soils and sediment sampled for bioaccumulation testing. The soil and sediment samples were sieved and composited by Envirosystems, Inc. (ESI), and then subsampled for the analyses described below. Also included are groundwater samples collected from well points located along the creek bank of the Former Flintkote Property.

Laboratories Receiving Samples (Table 1):

Case Number	Sample Type & No.	Name and Address of Laboratory
45921	CLP TCL Organics	Chemtech Consulting Group – CHM 284 Sheffield Street Mountainside, NJ 07092
45921	CLP TAL Metals/ICP-MS + Hg	Chemtech Consulting Group – CHM 284 Sheffield Street Mountainside, NJ 07092
P-1601011	TOC by LloydKahn	DESA Regional Laboratory 2890 Woodbridge Ave. Edison, NJ 08837

Six sediment samples, ten soil samples, and two field duplicates were shipped to Chemtech Consulting Group – CHM for PCB Aroclor, PAH, and Pesticide analysis. Two groundwater samples were also shipped to Chemtech Consulting Group – CHM and are summarized below.

Two groundwater samples were initially submitted for total PCB Aroclor analysis. After the samples were delivered to Chemtech Consulting Group – CHM, it was requested that the samples also be analyzed for dissolved PCB Aroclors. New CLP numbers were assigned after-the-fact for the new analysis.

Sample Dispatch Data (Table 2-1):

Summary of Organic Samples			
EPA Methods Organic	**Sample Type**	**Number of Samples**	**Number of Field Duplicates**
PCB Aroclors, PAHs, and Pesticides	Soil	10	1
PCB Aroclors, PAHs, and Pesticides	Sediment	6	1
PCB Aroclors	Groundwater	2	0

Six sediment samples, ten soil samples, and two field duplicates were shipped to Chemtech Consulting Group – CHM for total metals and mercury analyses as summarized below.

Sample Dispatch Data (Table 2-2):

Summary of Inorganic Samples			
EPA Methods Inorganic	**Sample Type**	**Number of Samples**	**Number of Field Duplicates**
Total Metals and Mercury	Soil	10	1
Total Metals and Mercury	Sediment	6	1

Six sediment samples, ten soil samples, and two field duplicates were shipped to DESA Regional Laboratory for TOC analysis by LloydKahn as summarized below.

Sample Dispatch Data (Table 2-3):

Summary of Organic Samples			
EPA Method	**Sample Type**	**Number of Samples**	**Number of Field Duplicates**
TOC by LloydKahn	Soil	10	1
TOC by LloydKahn	Sediment	6	1

Sampling Personnel (Table 3):

Name	Organization	Site Duties
Gene Florentino	Ecology and Environment, Inc.	Site Geologist
Lynne Kalmbach	Ecology and Environment, Inc.	Field Team Leader/Health & Safety Officer
Justin Zoladz	Ecology and Environment, Inc.	Health & Safety Officer
Sarah Craig	Ecology and Environment, Inc.	Field Sampler
Christopher Wood	Ecology and Environment, Inc.	Field Sampler
Jordan Skrzynski	Ecology and Environment, Inc.	Field Sampler

Sample Numbers and Collection Points (Table 4):

Laboratory	Sampling Event	Analyses	Matrix	CLP Sample Number	Sample Location	Sample Start Depth	Sample Type
Chemtech Consulting Group - CHM	Groundwater from Former Flintkote Creek Bank	CLP Aroclors	Ground Water	B0AA0	OU2-WP01	Total	Field Sample
		CLP Aroclors	Ground Water	B0AA1	OU2-WP02	Total	Field Sample
		CLP Aroclors	Ground Water	BBG20	OU2-WP01	Dissolved	Field Sample
		CLP Aroclors	Ground Water	BBG21	OU2-WP02	Dissolved	Field Sample

Laboratory	Sampling Event	Analyses	Matrix	CLP Sample Number	Sample Location	Sample Start Depth	Sample End Depth	Depth Units	Sample Type
Chemtech Consulting Group - CHM	Sediment	CLP Pesticides	Sediment	BBG01	OU2-SED04	0	6	inches	Field Sample
		CLP PAH	Sediment	BBG01	OU2-SED04	0	6	inches	Field Sample
		CLP Aroclors	Sediment	BBG01	OU2-SED04	0	6	inches	Field Sample
		CLP Aroclors	Sediment	BBG02	OU2-SED05	0	6	inches	Field Sample Extra volume for MS/MSD
		CLP Pesticides	Sediment	BBG02	OU2-SED05	0	6	inches	Field Sample Extra volume for MS/MSD
		CLP PAH	Sediment	BBG02	OU2-SED05	0	6	inches	Field Sample Extra volume for MS/MSD
		CLP Aroclors	Sediment	BBG03	OU2-SED06	0	6	inches	Field Sample
		CLP Pesticides	Sediment	BBG03	OU2-SED06	0	6	inches	Field Sample
		CLP PAH	Sediment	BBG03	OU2-SED06	0	6	inches	Field Sample
		CLP Aroclors	Sediment	BBG04	OU2-SED07	0	6	inches	Field Sample
		CLP Pesticides	Sediment	BBG04	OU2-SED07	0	6	inches	Field Sample
		CLP PAH	Sediment	BBG04	OU2-SED07	0	6	inches	Field Sample
		CLP Aroclors	Sediment	BBG05	OU2-SED08	0	6	inches	Field Sample
		CLP Pesticides	Sediment	BBG05	OU2-SED08	0	6	inches	Field Sample
		CLP PAH	Sediment	BBG05	OU2-SED08	0	6	inches	Field Sample
		CLP Aroclors	Sediment	BBG06	OU2-SED09	0	6	inches	Field Sample
		CLP Pesticides	Sediment	BBG06	OU2-SED09	0	6	inches	Field Sample
		CLP PAH	Sediment	BBG06	OU2-SED09	0	6	inches	Field Sample
		CLP Aroclors	Sediment	BBG07	OU2-SED10	0	6	inches	Field Sample
		CLP Pesticides	Sediment	BBG07	OU2-SED10	0	6	inches	Field Sample
		CLP PAH	Sediment	BBG07	OU2-SED10	0	6	inches	Field Sample

Laboratory	Sampling Event	Analyses	Matrix	CLP Sample Number	Sample Location	Sample Start Depth	Sample End Depth	Depth Units	Sample Type
		CLP Aroclors	Sediment	BBG08	OU2-SED11	0	6	inches	Field Duplicate to BBG01
		CLP Pesticides	Sediment	BBG08	OU2-SED11	0	6	inches	Field Duplicate to BBG01
		CLP PAH	Sediment	BBG08	OU2-SED11	0	6	inches	Field Duplicate to BBG01
Chemtech Consulting Group – CHM	Soil	CLP Aroclors	Soil	BBG09	OU2-SS15	0	1	feet	Field Sample Extra volume for MS/MSD
Chemtech Consulting Group - CHM	Soil	CLP Pesticides	Soil	BBG09	OU2-SS15	0	1	feet	Field Sample Extra volume for MS/MSD
		CLP PAH	Soil	BBG09	OU2-SS15	0	1	feet	Field Sample Extra volume for MS/MSD
		CLP PAH	Soil	BBG10	OU2-SS16	0	1	feet	Field Sample
		CLP Aroclors	Soil	BBG10	OU2-SS16	0	1	feet	Field Sample
		CLP Pesticides	Soil	BBG10	OU2-SS16	0	1	feet	Field Sample
		CLP PAH	Soil	BBG11	OU2-SS17	0	1	feet	Field Sample
		CLP Aroclors	Soil	BBG11	OU2-SS17	0	1	feet	Field Sample
		CLP Pesticides	Soil	BBG11	OU2-SS17	0	1	feet	Field Sample
		CLP PAH	Soil	BBG12	OU2-SS18	0	1	feet	Field Sample
		CLP Aroclors	Soil	BBG12	OU2-SS18	0	1	feet	Field Sample
		CLP Pesticides	Soil	BBG12	OU2-SS18	0	1	feet	Field Sample
		CLP PAH	Soil	BBG13	OU2-SS19	0	1	feet	Field Sample
		CLP Aroclors	Soil	BBG13	OU2-SS19	0	1	feet	Field Sample

Laboratory	Sampling Event	Analyses	Matrix	CLP Sample Number	Sample Location	Sample Start Depth	Sample End Depth	Depth Units	Sample Type
Chemtech Consulting Group - CHM	Soil	CLP Pesticides	Soil	BBG13	OU2-SS19	0	1	feet	Field Sample
		CLP PAH	Soil	BBG14	OU2-SS20	0	1	feet	Field Sample
		CLP Aroclors	Soil	BBG14	OU2-SS20	0	1	feet	Field Sample
		CLP Pesticides	Soil	BBG14	OU2-SS20	0	1	feet	Field Sample
		CLP PAH	Soil	BBG15	OU2-SS21	0	1	feet	Field Sample
		CLP Aroclors	Soil	BBG15	OU2-SS21	0	1	feet	Field Sample
		CLP Pesticides	Soil	BBG15	OU2-SS21	0	1	feet	Field Sample
		CLP PAH	Soil	BBG16	OU2-SS22	0	1	feet	Field Sample
		CLP Aroclors	Soil	BBG16	OU2-SS22	0	1	feet	Field Sample
		CLP Pesticides	Soil	BBG16	OU2-SS22	0	1	feet	Field Sample
		CLP PAH	Soil	BBG17	OU2-SS23	0	1	feet	Field Sample
		CLP Aroclors	Soil	BBG17	OU2-SS23	0	1	feet	Field Sample
		CLP Pesticides	Soil	BBG17	OU2-SS23	0	1	feet	Field Sample
		CLP PAH	Soil	BBG18	OU2-SS24	0	1	feet	Field Sample
		CLP Aroclors	Soil	BBG18	OU2-SS24	0	1	feet	Field Sample
		CLP Pesticides	Soil	BBG18	OU2-SS24	0	1	feet	Field Sample
		CLP PAH	Soil	BBG19	OU2-SS25	0	1	feet	Field Duplicate to BBG13
		CLP Aroclors	Soil	BBG19	OU2-SS25	0	1	feet	Field Duplicate to BBG13
		CLP Pesticides	Soil	BBG19	OU2-SS25	0	1	feet	Field Duplicate to BBG13

Laboratory	Sampling Event	Analyses	Matrix	CLP Sample Number	Sample Location	Sample Start Depth	Sample End Depth	Depth Units	Sample Type
Chemtech Consulting	Sediment	CLP ICP-MS TAL Metals + Hg	Sediment	MBBG01	OU2-SED04	0	6	inches	Field Sample

Laboratory	Sampling Event	Analyses	Matrix	CLP Sample Number	Sample Location	Sample Start Depth	Sample End Depth	Depth Units	Sample Type
Group – CHM		CLP ICP-MS TAL Metals + Hg	Sediment	MBBG02	OU2-SED05	0	6	inches	Field Sample Extra volume for MS/MSD
		CLP ICP-MS TAL Metals + Hg	Sediment	MBBG03	OU2-SED06	0	6	inches	Field Sample
		CLP ICP-MS TAL Metals + Hg	Sediment	MBBG04	OU2-SED07	0	6	inches	Field Sample
		CLP ICP-MS TAL Metals + Hg	Sediment	MBBG05	OU2-SED08	0	6	inches	Field Sample
		CLP ICP-MS TAL Metals + Hg	Sediment	MBBG06	OU2-SED09	0	6	inches	Field Sample
		CLP ICP-MS TAL Metals + Hg	Sediment	MBBG07	OU2-SED10	0	6	inches	Field Sample
		CLP ICP-MS TAL Metals + Hg	Sediment	MBBG08	OU2-SED11	0	6	inches	Field Duplicate to BBG01
	Soil	CLP ICP-MS TAL Metals + Hg	Soil	MBBG09	OU2-SS15	0	1	feet	Field Sample Extra volume for MS/MSD
		CLP ICP-MS TAL Metals + Hg	Soil	MBBG10	OU2-SS16	0	1	feet	Field Sample
		CLP ICP-MS TAL Metals + Hg	Soil	MBBG11	OU2-SS17	0	1	feet	Field Sample
Chemtech Consulting Group - CHM		CLP ICP-MS TAL Metals + Hg	Soil	MBBG12	OU2-SS18	0	1	feet	Field Sample
		CLP ICP-MS TAL Metals + Hg	Soil	MBBG13	OU2-SS19	0	1	feet	Field Sample
		CLP ICP-MS TAL Metals + Hg	Soil	MBBG14	OU2-SS20	0	1	feet	Field Sample
		CLP ICP-MS TAL Metals + Hg	Soil	MBBG15	OU2-SS21	0	1	feet	Field Sample
		CLP ICP-MS TAL Metals + Hg	Soil	MBBG16	OU2-SS22	0	1	feet	Field Sample

Laboratory	Sampling Event	Analyses	Matrix	CLP Sample Number	Sample Location	Sample Start Depth	Sample End Depth	Depth Units	Sample Type
		CLP ICP-MS TAL Metals + Hg	Soil	MBBG17	OU2-SS23	0	1	feet	Field Sample
		CLP ICP-MS TAL Metals + Hg	Soil	MBBG18	OU2-SS24	0	1	feet	Field Sample
		CLP ICP-MS TAL Metals + Hg	Soil	MBBG19	OU2-SS25	0	1	feet	Field Duplicate to BBG13

Laboratory	Sampling Event	Analyses	Matrix	CLP Sample Number	Sample Location	Sample Start Depth	Sample End Depth	Depth Units	Sample Type
DESA Regional Laboratory	Sediment	Total Organic Carbon	Sediment	BBG01	OU2-SED04	0	6	inches	Field Sample
		Total Organic Carbon	Sediment	BBG02	OU2-SED05	0	6	inches	Field Sample Extra volume for MS/MSD
		Total Organic Carbon	Sediment	BBG03	OU2-SED06	0	6	inches	Field Sample
		Total Organic Carbon	Sediment	BBG04	OU2-SED07	0	6	inches	Field Sample
		Total Organic Carbon	Sediment	BBG05	OU2-SED08	0	6	inches	Field Sample
		Total Organic Carbon	Sediment	BBG06	OU2-SED09	0	6	inches	Field Sample
		Total Organic Carbon	Sediment	BBG07	OU2-SED10	0	6	inches	Field Sample
		Total Organic Carbon	Sediment	BBG08	OU2-SED11	0	6	inches	Field Duplicate to BBG01
	Soil	Total Organic Carbon	Soil	BBG09	OU2-SS15	0	1	feet	Field Sample Extra volume for MS/MSD
		Total Organic Carbon	Soil	BBG10	OU2-SS16	0	1	feet	Field Sample
		Total Organic Carbon	Soil	BBG11	OU2-SS17	0	1	feet	Field Sample
		Total Organic Carbon	Soil	BBG12	OU2-SS18	0	1	feet	Field Sample
		Total Organic Carbon	Soil	BBG13	OU2-SS19	0	1	feet	Field Sample
		Total Organic Carbon	Soil	BBG14	OU2-SS20	0	1	feet	Field Sample
		Total Organic Carbon	Soil	BBG15	OU2-SS21	0	1	feet	Field Sample
		Total Organic Carbon	Soil	BBG16	OU2-SS22	0	1	feet	Field Sample
		Total Organic Carbon	Soil	BBG17	OU2-SS23	0	1	feet	Field Sample
		Total Organic Carbon	Soil	BBG18	OU2-SS24	0	1	feet	Field Sample
		Total Organic Carbon	Soil	BBG19	OU2-SS25	0	1	feet	Field Duplicate to BBG13

Photo Log



Photo 1 May 19, 2015, Flintkote Test Pit 01



Photo 2 May 21, 2015, Background Fish Sampling



Photo 3 May 22, 2015, Background Sediment Sampling SED04



Photo 4 2015 Flintkote Arch-01 0620 078



Photo 5 2015 Flintkote Arch-02 0620 075



Photo 6 2015 Flintkote TP02-01 Ash Pile 0620 023



Photo 7 2015 Flintkote TP02-02 Ash Pile 0620 023



Photo 8 2015 Flintkote TP03-1 0620 025



Photo 9 2015 Flintkote TP03-2 0620



Photo 10 2015 Flintkote TP05-1 0620



Photo 11 2015 Flintkote TP05-2 0620 025



Photo 12 2015 Flintkote TP06-1 0620 051



Photo 13 2015 Flintkote TP06-02 0620 052



Photo 14 2015 Flintkote Turb-01 0620 Location



Photo 15 2015 Flintkote Turb-02 0620



Photo 16 2016 0126 Bioaccumulation Sediment Sampling OU2-SED05



Photo 17 Reference Area: Creek above N Pond (1099)



Photo 18 Reference Area: Creek above N Pond (1100)



Photo 19 Reference Area: N Pond (1101)



Photo 20 Reference Area: N Pond (1102)



Photo 21 Reference Area: N Pond upstream end (1103)



Photo 22 Reference Area: Overflow from S Pond (1104)



Photo 23 Reference Area: S Pond from road (1105)



Photo 24 Reference Area: Grist Mill near N Pond (1106)



Photo 25 Reference Area: Grist Mill near N Pond (1108)



Photo 26 Reference Area: Grist Mill (1109)



Photo 27 Reference Area: 18MC flowing under SS Road (1110)



Photo 29 Reference Area: Barge Canal facing W (1111)



Photo 30 Reference Area: Barge Canal facing W (1111)

C Analytical Data and Data Validation

This appendix is provided on the attached CD.

D Data Usability

Table D-1a	Sample Analyses for Soil Samples Collected at Background and the Former Flintkote Property for the TVGA SI RAR
Table D-1b	Sample Analyses for Groundwater and Surface Water at the Former Flintkote for the TVGA SI RAR
Table D-1c	Sample Analyses for Sediment Samples Collected at the Former Flintkote Property for the TVGA SI RAR
Table D-2a	Sample Analyses for Soil Samples Collected within the Creek Corridor for the NYSDEC RI
Table D-2b	Sample Analyses for Sediment Samples Collected within the Creek Corridor for the NYSDEC RI
Table D-3	Sample Analyses for Sediment Samples Collected within the Creek Corridor for the NCSWCD Trackdown
Table D-4a	Sample Analyses for Soil Samples Collected within the Creek Corridor, 89 Mill Street, and Upson Park for the NYSDEC SRI
Table D-4b	Sample Analyses for Groundwater Samples Collected within the Creek Corridor for the NYSDEC SRI
Table D-4c	Sample Analyses for Sediment Samples Collected within the Creek Corridor and Barge Canal for the NYSDEC SRI
Table D-5a	Sample Analyses for Surface Water Samples Collected within the Creek Corridor and Barge Canal for the NYSDEC SRI Addendum
Table D-5b	Sample Analyses for Sediment Samples Collected within the Barge Canal for the NYSDEC SRI Addendum

Table D-1a Sample Analyses for Soil Samples Collected at Background and the Former Flintkote Property for the TVGA SI RAR

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	INTERVAL SAMPLED, ft		ANALYSIS						
								METALS - SW-846 6020	PCB AROCLORS - SW-846 8082	PESTICIDES - SW-846 8081	SVOCs- SW-846 8270	VOCs - SW-846 8260	CYANIDE	SOIL AND WASTE pH
Background Soil Samples														
FS-SS11-S-O	SO	N	NA	NA	9/18/2003	0	0.167	X	X	X	X	X	X	X
FS-SS12-S-O	SO	N	NA	NA	9/18/2003	0	0.167	X	X	X	X	X	X	X
Former Flintkote Property														
FS-SP02-D24-S-O	SO	N	-78.689060	43.180784	9/9/2003	2	4	--	--	--	--	X	--	--
FS-SP02-D26-S-O	SO	N	-78.689060	43.180784	9/9/2003	2	6	X	X	X	X	--	X	X
FS-SP03-D04-S-O	SO	N	-78.688904	43.181073	9/8/2003	0	4	X	X	X	X	X	X	X
FS-SP06-D24-S-O	SO	N	-78.689787	43.180926	9/10/2003	2	4	X	X	X	X	X	X	X
FS-SP07-D24-S-O	SO	N	-78.689724	43.181050	9/10/2003	2	4	X	X	X	X	X	X	X
FS-SP09-D14-S-O	SO	N	-78.690156	43.180988	9/10/2003	1	4	X	X	X	X	X	X	X
FS-SP11-D1012-S-O	SO	N	-78.690233	43.181497	9/9/2003	10	12	X	X	--	--	--	--	--
FS-SP11-D410-S-O	SO	N	-78.690233	43.181497	9/9/2003	4	10	X	X	X	X	--	X	X
FS-SP11-D810-S-O	SO	N	-78.690233	43.181497	9/9/2003	8	10	--	--	--	--	X	--	--
FS-SP12-D02-S-O	SO	N	-78.690447	43.181924	9/9/2003	0	2	X	X	X	X	X	X	X
FS-SP13-D0.53.5-S-O	SO	N	-78.690497	43.182065	9/9/2003	0.5	3.5	X	X	X	X	X	X	X
FS-SP23-D14-S-O	SO	N	-78.689827	43.181039	9/10/2003	1	4	X	X	X	X	X	X	X
FS-SS01-S-O	SO	N	-78.688660	43.180650	9/15/2003	0	0.167	X	X	X	X	--	X	X
FS-SS02-S-O	SO	N	-78.688974	43.180847	9/15/2003	0	0.167	X	X	X	X	--	X	X
FS-SS03-S-O	SO	N	-78.690002	43.181325	9/15/2003	0	0.167	X	X	X	X	--	X	X
FS-SS04-S-O	SO	N	-78.690241	43.181517	9/15/2003	0	0.167	X	X	X	X	--	X	X
FS-SS04-S-ORI	SO	N	-78.690241	43.181517	9/15/2003	0	0.167	--	--	--	X	--	--	--
FS-SS05-S-O	SO	N	-78.689951	43.181499	9/17/2003	0	0.167	X	X	X	X	--	X	X
FS-SS06-S-O	SO	N	-78.689789	43.181692	9/15/2003	0	0.167	X	X	X	X	--	X	X
FS-SS09-S-O	SO	N	-78.689980	43.181000	9/15/2003	0	0.167	X	X	X	X	--	X	X
FS-SS10-S-O	SO	N	-78.689749	43.181052	9/15/2003	0	0.167	X	X	X	X	--	X	X
FS-MW02OB-D2426-S-O	SO	N	-78.690052	43.182145	9/24/2003	24	26	--	--	--	--	X	--	--
FS-MW02OB-D2428-S-O	SO	N	-78.690052	43.182145	9/24/2003	24	28	X	X	X	X	--	X	X
FS-SP16-D812-S-O	SO	N	-78.689824	43.181875	9/8/2003	8	12	X	X	X	X	X	X	X
FS-SP19-D48-S-O	SO	N	-78.690270	43.182755	9/8/2003	4	8	X	X	X	X	X	X	X
FS-SP21-D45-S-O	SO	N	-78.689280	43.182213	9/10/2003	4	5	X	X	X	X	X	X	X
FS-SS07-S-O	SO	N	-78.689981	43.182043	9/15/2003	0	0.167	X	X	X	X	--	X	X
FS-SS08-S-O	SO	N	-78.690189	43.182176	9/15/2003	0	0.167	X	X	X	X	--	X	X

Table D-1a Sample Analyses for Soil Samples Collected at Background and the Former Flintkote Property for the TVGA SI RAR

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	INTERVAL SAMPLED, ft		ANALYSIS						
								METALS - SW-846 6020	PCB AROCLORS - SW-846 8082	PESTICIDES - SW-846 8081	SVOCs- SW-846 8270	VOCs - SW-846 8260	CYANIDE	SOIL AND WASTE pH
FS-MICRO01-D610-S-O	SO	N	-78.688972	43.180625	9/9/2003	6	10	X	X	X	X	--	X	X
FS-MICRO01-D68-S-O	SO	N	-78.688972	43.180625	9/9/2003	6	8	--	--	--	--	X	--	--
FS-MW03RK-D1415.5-S-O	SO	N	-78.689749	43.181719	9/15/2003	14	15.5	--	--	--	--	X	--	--
FS-MW04RK-D34-S-O	SO	N	-78.688749	43.180875	9/16/2003	3	4	--	--	--	--	X	--	--
FS-MW04RK-D35-S-O	SO	N	-78.688749	43.180875	9/16/2003	3	5	X	X	X	X	--	X	X
FS-MW04RK-D68-S-O	SO	N	-78.688749	43.180875	9/16/2003	6	8	X	X	X	X	X	X	X
FS-MW06RK-D810-S-O	SO	N	-78.690085	43.181401	9/25/2003	8	10	X	X	X	X	X	X	X
FS-BLDG E-SED-O	SL	N	-78.689694	43.181803	9/11/2003	--	--	X	X	X	X	X	X	X
FS-BLDGC-SED-O	SL	N	-78.689478	43.181486	9/11/2003	--	--	X	X	X	X	X	X	X
FS-BLDG-D-SED-O	SL	N	-78.689552	43.181725	9/11/2003	--	--	X	X	X	X	X	X	X
FS-BLDGD-FELT-O	SN	N	-78.689428	43.181758	9/11/2003	--	--	X	X	X	X	--	X	X
FS-BLDGD-FELT-O RE	SN	N	-78.689428	43.181758	9/11/2003	--	--	--	--	--	--	X	--	--
FS-SS01-CC-O	SN	N	-78.689615	43.181521	9/11/2003	--	--	--	X	--	--	--	--	X
FS-SS03-CC-O	SN	N	-78.689594	43.181469	9/11/2003	--	--	--	X	--	--	--	--	X

Key

N = Normal sample

SL = Sludge

SN = Miscellaneous solid material

SO = Soil

Table D-1b Sample Analyses for Groundwater and Surface Water at the Former Flintkote for the TVGA SI RAR

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	SCREEN INTERVAL, ft bgs		ANALYSIS					
								Metals - SW-846 6020	PCB AROCLORS - SW-846 8082	PESTICIDES - SW-846 8081	SVOCs- SW-846 8270	VOCs - SW-846 8260	CYANIDE
Former Flintkote Property Groundwater													
FS-198-E-MICRO-GW-O	WG	N	-78.688953	43.180812	10/3/2003	13	18	X	X	X	X	X	X
FS-198-F-MICRO-GW-O	WG	N	-78.688816	43.180538	10/3/2003	13	18	X	X	X	X	X	X
FS-MICRO-1-GW-O	WG	N	-78.688972	43.180625	10/3/2003	1.1	11.1	X	X	X	X	X	X
FS-MW01OB-GW-O	WG	N	-78.689815	43.181742	10/2/2003	9.6	19.6	X	X	X	X	X	X
FS-MW02OB-GW-O	WG	N	-78.690052	43.182145	10/2/2003	18.7	28.7	X	X	X	X	X	X
FS-MW01RK-GW-O	WG	N	-78.689821	43.182778	10/3/2003	10	20	--	X	X	--	--	--
FS-MW01RK-GW-O	WG	N	-78.689821	43.182778	10/2/2003	10	20	X	--	--	X	X	X
FS-MW02RK-GW-O	WG	N	-78.689579	43.182164	10/2/2003	9	29	X	X	X	X	X	X
FS-MW03RK-GW-O	WG	N	-78.689749	43.181719	10/2/2003	20	30	X	X	X	X	X	X
FS-MW04RK-GW-O	WG	N	-78.688749	43.180875	10/2/2003	18.5	28.5	X	X	X	X	X	X
FS-MW05RK-GW-O	WG	N	-78.689397	43.181447	10/3/2003	15	23	X	X	X	X	X	X
FS-MW06-MICRO-GW-O	WG	N	-78.690155	43.181259	10/3/2003	6.5	11.5	X	X	X	X	X	X
FS-MW06RK-GW-O	WG	N	-78.690085	43.181401	10/3/2003	13.5	21.5	X	X	X	X	X	X
FS-MW07RK-GW-O	WG	N	-78.690376	43.182551	10/2/2003	27.6	37.6	X	X	X	X	X	X
FS-MWXX-GW-FD	WG	FD	-78.689749	43.181719	10/2/2003	20	30	X	X	X	X	X	X
Former Flintkote Property Surface Water													
FS-EMC01-SW-O	WS	N	-78.689419	43.18135	9/11/2003	--		X	X	X	X	X	X
FS-BLDG D-SW-O	WS	N	-78.689552	43.181725	7/14/2015	--		X	X	X	X	X	X

Key

FD = Field duplicate

N = Normal sample

WG = Groundwater

WS = Surface water

Table D-1c Sample Analyses for Sediment Samples Collected at the Former Flintkote Property for the TVGA SI RAR

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	INTERVAL SAMPLED, ft		ANALYSIS						
								METALS - SW-846 6020	PCB AROCLORS - SW-846 8082	PESTICIDES - SW-846 8081	SVOCs- SW-846 8270	VOCs - SW-846 8260	CYANIDE	SOIL AND WASTE Ph
Former Flintkote Property														
FS-EMC01-SED-O	SE	N	-78.689419	43.181350	9/11/2003	0	0.167	X	X	X	X	X	X	X
FS-SS02-SED-O	SE	N	-78.689592	43.181477	9/11/2003			--	X	--	--	--	--	--

Key

N = Normal sample

SE = Sediment

Table D-2a Sample Analyses for Soil Samples Collected within the Creek Corridor for the NYSDEC RI

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	INTERVAL SAMPLED, ft		ANALYSIS			
								Metals - SW-846 6020	PCB Aroclors - SW-846 8082	SVOCs- SW-846 8270	Soil and Waste pH
Creek Corridor Soil											
OU1-SB-23	SO	N	-78.689501	43.180777	10/6/2005	0	0.6	X	X		
OU1-SS-20	SO	N	-78.688732	43.179611	7/23/2002	0	0.17	X	--	--	--
SB-1	SO	N	-78.688482	43.178761	9/27/2005	0	1.1	X	X	X	X
SB-2	SO	N	-78.688544	43.178744	9/27/2005	0.9	2.4	X	X	X	X
SB-3	SO	N	-78.688517	43.178984	9/27/2005	0	4	X	X	X	X
SB-4	SO	N	-78.688876	43.179341	9/27/2005	0	1.2	X	X	--	X
SB-5	SO	N	-78.688790	43.179438	9/27/2005	0	1.2	X	X	--	X
SB-7	SO	N	-78.688873	43.179760	9/27/2005	0	0.6	X	X	--	X
SB-9	SO	N	-78.688862	43.179873	9/27/2005	0	1.6	X	X	X	X
SB-10	SO	N	-78.688876	43.179990	9/27/2005	0.1	0.9	X	X	--	X
SB-11	SO	N	-78.689079	43.179892	9/27/2005	0	1.1	X	X	--	X
SB-12	SO	N	-78.689166	43.180229	10/3/2005	0	0.9	X	X	--	X
SB-13A	SO	N	-78.689005	43.180309	10/3/2005	0.2	0.9	X	X	--	X
SB-13B	SO	N	-78.689005	43.180309	10/3/2005	0.9	1.7	X	X	X	X
SB-13C	SO	N	-78.689005	43.180309	10/3/2005	4	4.3	X	X	--	X
SB-14	SO	N	-78.688967	43.180156	10/3/2005	0.5	1	X	X	--	X
SB-14B	SO	N	-78.688967	43.180156	10/3/2005	1	1.6	X	X	--	X
SB-15	SO	N	-78.689240	43.180474	10/3/2005	0	1.3	X	X	X	X
SB-17	SO	N	-78.689368	43.180495	10/3/2005	0.1	2.1	X	X	X	X
SB-19	SO	N	-78.689707	43.180501	10/3/2005	0.3	5	X	X	X	X
SB-24	SO	N	-78.688495	43.179701	10/6/2005	1.8	2.8	X	X	--	--
SS-6	SO	N	-78.688554	43.179798	7/23/2002	0	0.17	X	X	--	--
SS-7	SO	N	-78.688716	43.180135	7/23/2002	0	0.17	X	X	--	--
SS-22	SO	N	-78.688470	43.178574	11/26/2002	0	0.17	X	X	--	--
SS-24	SO	N	-78.688412	43.178620	11/26/2002	0	0.17	X	X	--	--
SS-28	SO	N	-78.689595	43.180880	11/1/2005	0	0.17	X	X	--	X
SS-29	SO	N	-78.689540	43.181011	11/1/2005	0	0.17	X	X	--	X
SS-31	SO	N	-78.689232	43.180472	11/2/2005	0	0.17	X	X	--	X
SS-37	SO	N	-78.688861	43.179989	11/2/2005	0	0.17	X	X	--	X
SS-38	SO	N	-78.688843	43.179873	11/2/2005	0	0.17	X	X	--	X
SS-40	SO	N	-78.688774	43.179438	11/3/2005	0	0.17	X	X	--	X
SS-41	SO	N	-78.688734	43.179570	11/3/2005	0	0.17	X	X	--	X
SS-43	SO	N	-78.688656	43.179354	11/3/2005	0	0.17	X	X	--	X

Table D-2a Sample Analyses for Soil Samples Collected within the Creek Corridor for the NYSDEC RI

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	INTERVAL SAMPLED, ft		ANALYSIS			
								Metals - SW-846 6020	PCB Aroclors - SW-846 8082	SVOCs- SW-846 8270	Soil and Waste pH
SS-44	SO	N	-78.688950	43.180151	11/3/2005	0	0.17	X	X	--	X
TP-1	SO	N	-78.688539	43.178597	9/28/2005	0	4	X	X	--	X
TP-2	SO	N	-78.688471	43.178640	9/28/2005	0	1	X	X	--	X
TP-2B	SO	N	-78.688471	43.178640	9/28/2005	2.8	3.3	X	X	--	X
TP-3	SO	N	-78.688470	43.178574	9/28/2005	0	0.3	X	X	--	X
UPSON-1	SO	N	-78.689108	43.176222	9/22/2005	0	0.17	X	X	X	--
UPSON-1B	SO	N	-78.689108	43.176222	9/22/2005	0.67	0.83	X	X	X	--
UPSON-2	SO	N	-78.689310	43.175585	9/22/2005	0	0.17	X	X	X	--
UPSON-2B	SO	N	-78.689310	43.175585	9/22/2005	0.17	0.83	X	X	X	--
WHITE-1	SO	N	-78.687552	43.177128	9/22/2005	0	0.17	X	X	X	--
WHITE-1B	SO	N	-78.687552	43.177128	9/22/2005	0.17	0.75	X	X	X	--
WHITE-2	SO	N	-78.686917	43.176630	9/22/2005	0	0.17	X	X	X	--
WHITE-2B	SO	N	-78.686917	43.176630	9/22/2005	0.17	0.58	X	X	X	--
OU1 Soil											
OU1-SB-20	SO	N	-78.689658	43.180611	10/6/2005	0.2	4	X	X	X	--
OU1-SS-5	SO	N	-78.689617	43.180474	7/23/2002	0	0.17	X	--	--	--
OU1-SS-8	SO	N	-78.689344	43.180717	7/23/2002	0	0.17	X	X	--	--
OU1-SS-9	SO	N	-78.689380	43.180747	7/23/2002	0	0.17	X	X	--	--
OU1-SS-10	SO	N	-78.689234	43.180580	7/23/2002	0	0.17	X	X	--	--
OU1-SS-11	SO	N	-78.689916	43.180852	7/23/2002	0	0.17	X	--	--	--
OU1-SS-12	SO	N	-78.689764	43.180913	7/23/2002	0	0.17	X	--	--	--
OU1-SS-13	SO	N	-78.689682	43.180678	7/23/2002	0	0.17	X	--	--	--
OU1-SS-14	SO	N	-78.689817	43.180629	7/23/2002	0	0.17	X	--	--	--
OU1-SS-15	SO	N	-78.689129	43.180458	7/23/2002	0	0.17	X	--	--	--
OU1-SS-16	SO	N	-78.688977	43.180257	7/23/2002	0	0.17	X	--	--	--
OU1-SS-17	SO	N	-78.689506	43.180268	7/23/2002	0	0.17	X	--	--	--
OU1-SS-18	SO	N	-78.688989	43.180071	7/23/2002	0	0.17	X	--	--	--
OU1-SS-19	SO	N	-78.688902	43.179744	7/23/2002	0	0.17	X	--	--	--
OU1-SS-21	SO	N	-78.688747	43.179333	7/23/2002	0	0.17	X	--	--	--
SS-25	SO	N	-78.689642	43.180608	11/1/2005	0	0.17	X	X	--	X
SS-26	SO	N	-78.689655	43.180756	11/1/2005	0	0.17	X	X	--	X
SS-27	SO	N	-78.689502	43.180685	11/1/2005	0	0.17	X	X	--	X
SS-30	SO	N	-78.689353	43.180499	11/2/2005	0	0.17	X	X	--	X
SS-32	SO	N	-78.689428	43.180398	11/2/2005	0	0.17	X	X	--	X

Table D-2a Sample Analyses for Soil Samples Collected within the Creek Corridor for the NYSDEC RI

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	INTERVAL SAMPLED, ft		ANALYSIS			
								Metals - SW-846 6020	PCB Aroclors - SW-846 8082	SVOCs- SW-846 8270	Soil and Waste pH
SS-33	SO	N	-78.689288	43.180313	11/2/2005	0	0.17	X	X	--	X
SS-34	SO	N	-78.689156	43.180395	11/2/2005	0	0.17	X	X	--	X
SS-35	SO	N	-78.689150	43.180225	11/2/2005	0	0.17	X	X	--	X
SS-36	SO	N	-78.689060	43.179897	11/2/2005	0	0.17	X	X	--	X
SS-39	SO	N	-78.688865	43.179348	11/3/2005	0	0.17	X	X	--	X
SS-42	SO	N	-78.688925	43.179596	11/3/2005	0	0.17	X	X	--	X

Key

N = Normal sample

SO = Soil

Table D-2b Sample Analyses for Sediment Samples Collected within the Creek Corridor for the NYSDEC RI

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	INTERVAL SAMPLED, ft		ANALYSIS	
								METALS - SW-846 6010	PCB AROCLORS - SW-846 8082
Creek Corridor Sediment									
SED-6	SE	N	-78.688623	43.179443	7/23/2002	0	0.17	--	X
SED-7	SE	N	-78.688427	43.178648	11/26/2002	0	0.17	X	X
SED-8	SE	N	-78.688420	43.178724	11/26/2002	0.17	0.33	X	X
SED-9	SE	N	-78.688470	43.178184	11/26/2002	0	0.17	X	X
SED-10	SE	N	-78.689242	43.175513	9/13/2005	0	0.17	X	X
SED-10B	SE	N	-78.689242	43.175513	9/13/2005	0.17	0.58	X	X
SED-11	SE	N	-78.688735	43.176293	9/13/2005	0	0.17	X	X
SED-11B	SE	N	-78.688735	43.176293	9/13/2005	0.17	0.58	X	X
SED-12	SE	N	-78.688422	43.176938	9/13/2005	0	0.17	X	X
SED-12B	SE	N	-78.688422	43.176938	9/13/2005	0.17	0.5	X	X
SED-13	SE	N	-78.687067	43.176440	9/13/2005	0	0.17	X	X
SED-13B	SE	N	-78.687067	43.176440	9/13/2005	0.25	0.75	X	X
SED-14	SE	N	-78.688532	43.177466	9/13/2005	0	0.17	X	X
SED-14B	SE	N	-78.688532	43.177466	9/13/2005	0.25	0.5	X	X
SED-14C	SE	N	-78.688532	43.177466	9/13/2005	0.58	0.75	X	X
SED-15	SE	N	-78.688347	43.177656	9/13/2005	0	0.17	X	X
SED-15B	SE	N	-78.688347	43.177656	9/13/2005	0.5	0.75	X	X
SED-16	SE	N	-78.688461	43.178419	9/13/2005	0	0.17	X	X
SED-16B	SE	N	-78.688461	43.178419	9/13/2005	0.25	0.5	X	X
SED-17	SE	N	-78.688353	43.177991	9/13/2005	0	0.17	X	X
SED-17B	SE	N	-78.688353	43.177991	9/13/2005	0.25	0.75	X	X

Table D-2b Sample Analyses for Sediment Samples Collected within the Creek Corridor for the NYSDEC RI

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	INTERVAL SAMPLED, ft		ANALYSIS	
								METALS - SW-846 6010	PCB AROCLORS - SW-846 8082
SED-18	SE	N	-78.688368	43.178535	9/13/2005	0	0.17	X	X
SED-18B	SE	N	-78.688368	43.178535	9/13/2005	0.25	0.5	X	X
SED-20	SE	N	-78.688417	43.179125	9/15/2005	0	0.17	X	X
SED-20B	SE	N	-78.688417	43.179125	9/15/2005	0.25	0.5	X	X
SED-21	SE	N	-78.688485	43.178969	9/15/2005	0	0.17	X	X
SED-22	SE	N	-78.688519	43.179236	4/19/2005	0	0.17	X	X
SED-23	SE	N	-78.688623	43.179443	9/15/2005	0	0.17	X	X
SED-23B	SE	N	-78.688623	43.179443	9/15/2005	0.17	0.42	X	X
SED-25	SE	N	-78.688843	43.180055	9/15/2005	0	0.17	X	X
SED-25B	SE	N	-78.688843	43.180055	9/15/2005	0.42	0.58	X	X
SED-27	SE	N	-78.689252	43.180638	9/15/2005	0	0.17	X	X
SED-27B	SE	N	-78.689252	43.180638	9/15/2005	0.25	0.75	X	X
SED-28	SE	N	-78.689264	43.180976	9/21/2005	0	0.17	X	X
SED-28B	SE	N	-78.689264	43.180976	9/21/2005	0.67	0.92	X	X
SED-29	SE	N	-78.689302	43.181161	9/21/2005	0	0.17	X	X
SED-29B	SE	N	-78.689302	43.181161	9/21/2005	0.25	0.5	X	X
SED-30	SE	N	-78.689531	43.181005	9/15/2005	0	0.17	X	X
SED-30B	SE	N	-78.689531	43.181005	9/15/2005	0.17	0.58	X	X
SED-32	SE	N	-78.690193	43.181076	9/15/2005	0	0.17	X	X
SED-32B	SE	N	-78.690193	43.181076	9/15/2005	0.25	0.42	X	X
SED-34	SE	N	-78.689795	43.181527	9/21/2005	0	0.17	X	X
SED-34B	SE	N	-78.689795	43.181527	9/21/2005	0.17	0.58	X	X

Table D-2b Sample Analyses for Sediment Samples Collected within the Creek Corridor for the NYSDEC RI

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	INTERVAL SAMPLED, ft		ANALYSIS	
								METALS - SW-846 6010	PCB AROCLORS - SW-846 8082
SED-35	SE	N	-78.690079	43.181758	9/21/2005	0	0.17	X	X
SED-35B	SE	N	-78.690079	43.181758	9/21/2005	0.25	0.67	X	X
SED-37	SE	N	-78.690439	43.182211	9/21/2005	0	0.17	X	X
SED-37B	SE	N	-78.690439	43.182211	4/26/2005	0.8	1	X	X
SED-37BB	SE	N	-78.690439	43.182211	9/21/2005	0.17	0.58	X	X
SED-38	SE	N	-78.690898	43.182471	9/22/2005	0	0.17	X	X
SED-38B	SE	N	-78.690898	43.182471	9/22/2005	0.25	0.75	X	X
SED-39	SE	N	-78.690851	43.182522	9/22/2005	0	0.17	X	X
SED-39B	SE	N	-78.690851	43.182522	9/22/2005	0.25	0.58	X	X
SED-40	SE	N	-78.691286	43.182695	9/22/2005	0	0.17	X	X
SED-40B	SE	N	-78.691286	43.182695	9/22/2005	0.17	0.5	X	X
SED-42	SE	N	-78.688958	43.180527	9/15/2005	0	0.17	X	X
SED-43	SE	N	-78.689118	43.180750	9/15/2005	0	0.17	X	X
SED-43B	SE	N	-78.689118	43.180750	9/15/2005	0.25	0.75	X	X
SED-44	SE	N	-78.688222	43.177102	9/13/2005	0	0.17	X	X

Key

N = Normal sample

SE = Sediment

Table D-3 Sample Analyses for Sediment Samples Collected within the Creek Corridor for the NCSWCD Trackdown

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	INTERVAL SAMPLED, ft		ANALYSIS		
								METALS - SW-846 6020	PCB AROCLORS - SW-846 8082	TOTAL ORGANIC CARBON - LLOYD KAHN
Creek Corridor Sediment										
TRK-C-06-SD-A	SE	N	-78.691484	43.182482	8/24/2006	0	0.4	X	X	X
TRK-C-06-SD-B	SE	N	-78.691484	43.182482	8/24/2006	0.42	0.83	--	X	--
TRK-C-06-SD-C	SE	N	-78.691484	43.182482	8/24/2006	0.83	1.25	--	X	--
TRK-C-07-SD-A	SE	N	-78.692301	43.183010	8/24/2006	0	0.4	X	X	--
TRK-C-07-SD-B	SE	N	-78.692301	43.183010	8/24/2006	0.42	0.83	--	X	--
TRK-C-07-SD-C	SE	N	-78.692301	43.183010	8/24/2006	0.83	1.25	--	X	X
Creek Corridor Sediment -PCB Screening										
TRK-C-07-SD-C	SE	N	-78.692301	43.183010	8/24/2006	0.83	1.25	--	X	X
Creek Corridor Sediment -PCB Screening										
TRK-S01-SD	SE	N	-78.691219	43.182564	7/6/2006	0	0.5	--	X	--
TRK-S02-SD	SE	N	-78.691502	43.182659	7/6/2006	0	0.5	--	X	--
TRK-S03-SD	SE	N	-78.691546	43.182781	7/6/2006	0	0.5	--	X	--
TRK-S04-SD	SE	N	78.691549	43.182797	7/6/2006	0	0.5	--	X	--
TRK-S05-SD	SE	N	78.691578	43.182818	7/6/2006	0	0.5	--	X	--
TRK-S06-SD	SE	N	-78.691786	43.182929	7/6/2006	0	0.5	--	X	--
TRK-S07-SD	SE	N	-78.691789	43.182927	7/6/2006	0	0.5	--	X	--
TRK-S08-SD	SE	N	-78.691817	43.182941	7/6/2006	0	0.5	--	X	--
TRK-S09-SD	SE	N	-78.691875	43.182969	7/6/2006	0	0.5	--	X	--
TRK-S10-SD	SE	N	-78.691938	43.182992	7/6/2006	0	0.5	--	X	--
TRK-S11-SD	SE	N	-78.692303	43.182956	7/6/2006	0	0.5	--	X	--
TRK-S74-SD	SE	N	-78.691488	43.182585	7/28/2006	0	0.5	--	X	--
TRK-S75-SD	SE	N	-78.691731	43.182976	7/28/2006	0	0.5	--	X	--
TRK-S76-SD	SE	N	-78.692393	43.182885	7/28/2006	0	0.5	--	X	--
TRK-S77-SD	SE	N	-78.692440	43.182953	7/28/2006	0	0.5	--	X	--

Table D-4a Sample Analyses for Soil Samples Collected within the Creek Corridor, 89 Mill Street, and Upson Park for the NYSDEC SRI

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	INTERVAL SAMPLED, ft		ANALYSIS			
								METALS - SW-846 6020	PCB AROCLORS - SW-846 8082	PESTICIDES - SW-846 8081	SVOCs- SW-846 8270
Adjacent Soil Samples from 89 Mill Street											
18MC-SS18-Z1	SO	N	-78.687511	43.179182	6/6/2007	0	0.167	X	X	--	X
18MC-SS19-Z1	SO	N	-78.687571	43.179237	6/6/2007	0	0.167	X	X	--	X
18MC-SS20-Z1	SO	N	-78.687191	43.178508	6/6/2007	0	0.167	X	X	--	X
Creek Corridor Soil											
18MC-L01W-S04-Z1	SO	N	-78.689328	43.175120	4/18/2007	0	0.167	X	X	--	--
18MC-L01W-S04-Z2	SO	N	-78.689328	43.175120	4/18/2007	0.9	2	X	X	--	--
18MC-L01W-S04-Z3	SO	N	-78.689328	43.175120	4/18/2007	2	3	X	X	--	--
18MC-L01W-S05-Z1	SO	N	-78.689285	43.175180	4/18/2007	0	0.167	X	X	X	X
18MC-L01W-S05-Z2	SO	N	-78.689285	43.175180	4/18/2007	1	2	X	X	--	--
18MC-L01W-S05-Z3	SO	N	-78.689285	43.175180	4/18/2007	2	3	X	X	--	--
18MC-L01W-S06-Z1	SO	N	-78.688990	43.175426	4/18/2007	0	0.167	X	X	--	--
18MC-L01W-S06-Z2	SO	N	-78.688990	43.175426	4/18/2007	1	2	X	X	--	--
18MC-L02E-S04-Z1	SO	N	-78.687478	43.176694	4/20/2007	0	0.167	X	X	X	X
18MC-L02E-S04-Z2	SO	N	-78.687478	43.176694	4/20/2007	1	1.5	X	X	--	--
18MC-L02E-S05-Z1	SO	N	-78.687346	43.176870	4/20/2007	0	2	X	X	--	--
18MC-L02E-S05-Z2	SO	N	-78.687346	43.176870	4/20/2007	0.8	1.5	X	X	--	--
18MC-L02E-S05-Z2/D	SO	FD	-78.687346	43.176870	4/20/2007	0.8	1.5	X	X	--	--
18MC-L02W-S04-Z1	SO	N	-78.689316	43.175861	4/18/2007	0	0.167	X	X	X	X
18MC-L02W-S04-Z2	SO	N	-78.689316	43.175861	4/18/2007	1.5	2	X	X	--	--
18MC-L02W-S04-Z3	SO	N	-78.689316	43.175861	4/18/2007	2.5	3	X	X	--	--
18MC-L02W-S05-Z1	SO	N	-78.689154	43.175817	4/18/2007	0	0.167	X	X	--	--
18MC-L02W-S05-Z2	SO	N	-78.689154	43.175817	4/18/2007	0.2	1	X	X	--	--
18MC-L02W-S05-Z3	SO	N	-78.689154	43.175817	4/18/2007	1	2	X	X	--	--
18MC-L02W-S06-Z1	SO	N	-78.688783	43.175713	4/18/2007	0	0.167	X	X	--	--
18MC-L02W-S06-Z2	SO	N	-78.688783	43.175713	4/18/2007	1	2	X	X	--	--
18MC-L02W-S06-Z3	SO	N	-78.688783	43.175713	4/18/2007	2	2.5	X	X	--	--
18MC-L03E-S04-Z1	SO	N	-78.687900	43.177020	4/20/2007	0	0.167	X	X	--	--
18MC-L03E-S04-Z2	SO	N	-78.687900	43.177020	4/20/2007	0.5	2	X	X	--	--
18MC-L03E-S05-Z1	SO	N	-78.687757	43.177205	4/20/2007	0	0.167	X	X	X	X
18MC-L03E-S05-Z2	SO	N	-78.687757	43.177205	4/20/2007	0.5	1.2	X	X	--	--
18MC-L03E-S05-Z3	SO	N	-78.687757	43.177205	4/20/2007	1.3	2	X	X	--	--

Table D-4a Sample Analyses for Soil Samples Collected within the Creek Corridor, 89 Mill Street, and Upson Park for the NYSDEC SRI

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	INTERVAL SAMPLED, ft		ANALYSIS			
								METALS - SW-846 6020	PCB AROCLORS - SW-846 8082	PESTICIDES - SW-846 8081	SVOCs- SW-846 8270
18MC-L03W-S04-Z1	SO	N	-78.688941	43.176320	4/19/2007	0	0.167	X	X	X	X
18MC-L03W-S04-Z2	SO	N	-78.688941	43.176320	4/19/2007	2	3	X	X	--	--
18MC-L03W-S05-Z1	SO	N	-78.688862	43.176301	4/19/2007	0	0.167	X	X	--	--
18MC-L03W-S05-Z2	SO	N	-78.688862	43.176301	4/19/2007	2	3	X	X	--	--
18MC-L03W-S06-Z1	SO	N	-78.688501	43.176265	4/19/2007	0	0.167	X	X	--	--
18MC-L03W-S06-Z2	SO	N	-78.688501	43.176265	4/19/2007	1.5	2.5	X	X	--	--
18MC-L04W-S04-Z1	SO	N	-78.688644	43.176819	4/20/2007	0	0.167	X	X	X	X
18MC-L04W-S04-Z2	SO	N	-78.688644	43.176819	4/20/2007	1.5	2.3	X	X	--	--
18MC-L04W-S05-Z1	SO	N	-78.688244	43.176717	4/20/2007	0	0.167	X	X	--	--
18MC-L04W-S05-Z2	SO	N	-78.688244	43.176717	4/20/2007	0.7	1.5	X	X	--	--
18MC-L05W-S04-Z1	SO	N	-78.688146	43.176905	4/20/2007	0	0.167	X	X	X	X
18MC-L05W-S04-Z2	SO	N	-78.688146	43.176905	4/20/2007	0.7	1.5	X	X	--	--
18MC-L06-S04-Z1	SO	N	-78.688602	43.177398	4/23/2007	0	0.167	X	X	X	X
18MC-L06-S04-Z2	SO	N	-78.688602	43.177398	4/23/2007	0.5	1.2	X	X	--	--
18MC-L06-S05-Z1	SO	N	-78.688312	43.177465	4/23/2007	0	0.167	X	X	--	--
18MC-L06-S05-Z2	SO	N	-78.688312	43.177465	4/23/2007	1	2	X	X	--	--
18MC-L07-S04-Z1	SO	N	-78.688727	43.177787	4/23/2007	0	0.167	X	X	--	--
18MC-L07-S04-Z2	SO	N	-78.688727	43.177787	4/23/2007	2	3	X	X	--	--
18MC-L07-S05-Z1	SO	N	-78.688211	43.177874	4/23/2007	0	0.167	X	X	X	X
18MC-L07-S05-Z2	SO	N	-78.688211	43.177874	4/23/2007	1.8	2.5	X	X	--	--
18MC-L08-S04-Z1	SO	N	-78.688653	43.178465	4/23/2007	0	0.167	X	X	X	X
18MC-L08-S04-Z2	SO	N	-78.688653	43.178465	4/23/2007	1.8	2.5	X	X	--	--
18MC-L08-S05-Z1	SO	N	-78.688169	43.178501	4/23/2007	0	0.167	X	X	--	--
18MC-L08-S05-Z2	SO	N	-78.688169	43.178501	4/23/2007	0.9	1.5	X	X	--	--
18MC-L09-S04-Z1	SO	N	-78.688600	43.179029	4/23/2007	0	2	X	X	X	X
18MC-L09-S04-Z2	SO	N	-78.688600	43.179029	4/23/2007	1.5	2.5	X	X	--	--
18MC-L09-S05-Z1	SO	N	-78.688330	43.179104	4/23/2007	0	0.167	X	X	--	--
18MC-L09-S05-Z2	SO	N	-78.688330	43.179104	4/23/2007	1	2	X	X	--	--
18MC-L10-S04-Z1	SO	N	-78.688477	43.179638	4/23/2007	0	0.167	X	X	X	X
18MC-L10-S04-Z2	SO	N	-78.688477	43.179638	4/23/2007	1	2	X	X	--	--
18MC-L10-S05-Z1	SO	N	-78.688414	43.179685	4/23/2007	0	0.167	X	X	--	--
18MC-L10-S05-Z2	SO	N	-78.688414	43.179685	4/23/2007	1	2	X	X	--	--

Table D-4a Sample Analyses for Soil Samples Collected within the Creek Corridor, 89 Mill Street, and Upson Park for the NYSDEC SRI

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	INTERVAL SAMPLED, ft		ANALYSIS			
								METALS - SW-846 6020	PCB AROCLORS - SW-846 8082	PESTICIDES - SW-846 8081	SVOCs- SW-846 8270
18MC-L11-S04-Z1	SO	N	-78.688724	43.180166	4/24/2007	0	0.167	X	X	--	--
18MC-L11-S04-Z2	SO	N	-78.688724	43.180166	4/24/2007	0.5	1.5	X	X	--	--
18MC-L11-S05-Z1	SO	N	-78.688652	43.180192	4/24/2007	0	0.167	X	X	X	X
18MC-L11-S05-Z2	SO	N	-78.688652	43.180192	4/24/2007	0.6	1.4	X	X	--	--
18MC-L13-S04-Z1	SO	N	-78.689706	43.181017	4/24/2007	0	0.167	X	X	X	X
18MC-L13-S04-Z2	SO	N	-78.689706	43.181017	4/24/2007	1	1.5	X	X	--	--
18MC-L16W-S04-Z1	SO	N	-78.691243	43.182096	4/24/2007	0	0.167	X	X	X	X
18MC-L16W-S04-Z2	SO	N	-78.691243	43.182096	4/25/2007	0.7	1.5	X	X	--	--
18MC-L16W-S05-Z1	SO	N	-78.691148	43.182162	4/24/2007	0	0.167	X	X	--	--
18MC-L16W-S05-Z2	SO	N	-78.691148	43.182162	4/24/2007	0.5	1.4	X	X	--	--
18MC-L17-S04-Z1	SO	N	-78.691614	43.182384	4/25/2007	0	0.167	X	X	--	--
18MC-L17-S04-Z2	SO	N	-78.691614	43.182384	4/25/2007	0.5	1.3	X	X	--	--
18MC-L17-S05-Z1	SO	N	-78.691490	43.182452	4/25/2007	0	0.167	X	X	X	X
18MC-L17-S05-Z2	SO	N	-78.691490	43.182452	4/25/2007	0.5	1.5	X	X	--	--
18MC-L17-S06-Z1	SO	N	-78.691160	43.182700	4/25/2007	0	0.167	X	X	--	--
18MC-L17-S07-Z1	SO	N	-78.691046	43.182809	4/25/2007	0	0.167	X	X	--	--
18MC-L18-S04-Z1	SO	N	-78.691956	43.182562	4/25/2007	0	0.167	X	X	--	--
18MC-L18-S04-Z2	SO	N	-78.691956	43.182562	4/25/2007	0.5	1	X	X	--	--
18MC-L18-S05-Z1	SO	N	-78.691982	43.182873	4/25/2007	0	0.167	X	X	--	--
18MC-L18-S05-Z2	SO	N	-78.691982	43.182873	4/25/2007	0.5	1.5	X	X	--	--
18MC-L18-S05-Z2/D	SO	FD	-78.691982	43.182873	4/25/2007	0.5	1.5	X	X	--	--
18MC-L18-S06-Z1	SO	N	-78.691995	43.183082	4/25/2007	0	0.167	X	X	--	--
18MC-L18-S06-Z2	SO	N	-78.691995	43.183082	4/25/2007	0.7	1.3	X	X	--	--
18MC-L18-S07-Z1	SO	N	-78.691987	43.183140	4/25/2007	0	0.167	X	X	X	X
18MC-L18-S07-Z2	SO	N	-78.691987	43.183140	4/25/2007	0.8	1.6	X	X	--	--
18MC-MW01-Z1	SO	N	-78.688718	43.180381	6/21/2007	3	4	X	X	--	X
18MC-MW01-Z2	SO	N	-78.688718	43.180381	6/21/2007	12	14	X	X	--	X
18MC-MW04-Z1	SO	N	-78.688269	43.179675	6/22/2007	16	18	X	X	--	X
18MC-MW04-Z2	SO	N	-78.688269	43.179675	6/22/2007	24	26	X	X	--	X
18MC-MW05-Z1	SO	N	-78.688632	43.179122	6/15/2007	4	6	X	X	--	X
18MC-MW05-Z2	SO	N	-78.688632	43.179122	6/15/2007	12	14	X	X	--	X
18MC-MW06-Z1	SO	N	-78.687823	43.179107	6/20/2007	8	10	X	X	--	X

Table D-4a Sample Analyses for Soil Samples Collected within the Creek Corridor, 89 Mill Street, and Upson Park for the NYSDEC SRI

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	INTERVAL SAMPLED, ft		ANALYSIS			
								METALS - SW-846 6020	PCB AROCLORS - SW-846 8082	PESTICIDES - SW-846 8081	SVOCs- SW-846 8270
18MC-MW06-Z2	SO	N	-78.687823	43.179107	6/20/2007	18	22	X	X	--	X
18MC-MW06-Z2/D	SO	FD	-78.687823	43.179107	6/20/2007	18	22	X	X	--	X
18MC-MW08-Z1	SO	N	-78.688065	43.177702	6/11/2007	6	10	X	X	--	X
18MC-MW08-Z2	SO	N	-78.688065	43.177702	6/11/2007	10	14	X	X	--	X
18MC-MW08-Z2/D	SO	FD	-78.688065	43.177702	6/11/2007	10	14	X	X	--	X
18MC-MW09-Z1	SO	N	-78.688835	43.177929	6/18/2007	8	9	X	X	--	X
18MC-MW10-Z1	SO	N	-78.687949	43.177264	6/20/2007	10	11	X	X	--	X
18MC-MW10-Z2	SO	N	-78.687949	43.177264	6/20/2007	12	13	X	X	--	X
18MC-MW11-Z1	SO	N	-78.686893	43.177550	6/8/2007	8	10	X	X	--	X
18MC-MW12-Z1	SO	N	-78.687384	43.177057	6/6/2007	10	14	X	X	--	X
18MC-MW12-Z2	SO	N	-78.687384	43.177057	6/7/2007	12	16	X	X	--	X
18MC-MW13-Z1	SO	N	-78.686859	43.176728	6/7/2007	6	10	X	X	--	X
18MC-MW14-Z1	SO	N	-78.688593	43.176933	6/19/2007	12	14	X	X	--	X
18MC-MW15-Z1	SO	N	-78.689143	43.176265	6/12/2007	10	12	X	X	--	X
18MC-MW16-Z1	SO	N	-78.689840	43.175910	6/12/2007	8	10	X	X	--	X
18MC-MW17-Z1	SO	N	-78.689465	43.174775	6/5/2007	16	18	X	X	--	X
18MC-SB01-Z1	SO	N	-78.688571	43.180310	6/8/2007	6	10	X	X	--	--
18MC-SB01-Z1/D	SO	FD	-78.688571	43.180310	6/8/2007	6	10	X	X	--	--
18MC-SB01-Z2	SO	N	-78.688571	43.180310	6/8/2007	16	18	X	X	--	--
18MC-SB02-Z1	SO	N	-78.688378	43.179930	6/8/2007	6	8	X	X	--	--
18MC-SB02-Z2	SO	N	-78.688378	43.179930	6/8/2007	12	16	X	X	--	--
18MC-SB03-Z1	SO	N	-78.688126	43.179051	4/27/2007	2.4	2.9	X	X	--	--
18MC-SB03-Z2	SO	N	-78.688126	43.179051	4/27/2007	8	8.6	X	X	--	--
18MC-SB04-Z1	SO	N	-78.688530	43.178729	4/27/2007	2	2.5	X	X	--	--
18MC-SB05-Z1	SO	N	-78.688188	43.177979	4/27/2007	0.5	1.5	X	X	--	--
18MC-SB05-Z2	SO	N	-78.688188	43.177979	4/27/2007	5.5	6.5	X	X	--	--
18MC-SB05-Z3	SO	N	-78.688188	43.177979	4/27/2007	14	14.5	X	X	--	--
18MC-SB06-Z1	SO	N	-78.687558	43.177134	4/26/2007	1.5	2	X	X	--	--
18MC-SB06-Z2	SO	N	-78.687558	43.177134	4/26/2007	14	14.5	X	X	--	--
18MC-SB10-Z1	SO	N	-78.686984	43.176668	4/26/2007	1.5	2	X	X	--	--
18MC-SB10-Z1/D	SO	FD	-78.686984	43.176668	4/26/2007	1.5	2	X	X	--	--
18MC-SB10-Z2	SO	N	-78.686984	43.176668	4/26/2007	10.5	11.5	X	X	--	--

Table D-4a Sample Analyses for Soil Samples Collected within the Creek Corridor, 89 Mill Street, and Upson Park for the NYSDEC SRI

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	INTERVAL SAMPLED, ft		ANALYSIS			
								METALS - SW-846 6020	PCB AROCLORS - SW-846 8082	PESTICIDES - SW-846 8081	SVOCs- SW-846 8270
18MC-SB11-Z1	SO	N	-78.689039	43.176551	6/25/2007	3	4	X	X	--	--
18MC-SB12-Z1	SO	N	-78.689362	43.176397	4/26/2007	6	6.8	X	X	--	--
18MC-SB12-Z2	SO	N	-78.689362	43.176397	4/26/2007	8.5	11.6	X	X	--	--
18MC-SB13-Z1	SO	N	-78.689866	43.175708	4/26/2007	0.5	2	X	X	--	--
18MC-SB13-Z2	SO	N	-78.689866	43.175708	4/26/2007	4	6	X	X	--	--
18MC-SB14-Z1	SO	N	-78.689511	43.175552	4/26/2007	8	10.2	X	X	--	--
18MC-SB14-Z2	SO	N	-78.689511	43.175552	4/26/2007	10.2	11.5	X	X	--	--
18MC-SB15-Z1	SO	N	-78.688189	43.177432	4/27/2007	1.5	2	X	X	--	--
18MC-SB15-Z2	SO	N	-78.688189	43.177432	4/27/2007	10	11	X	X	--	--
18MC-SB15-Z2/D	SO	FD	-78.688189	43.177432	4/27/2007	10	11	X	X	--	--
18MC-SS01-Z1	SO	N	-78.688718	43.180381	4/16/2007	0	0.167	X	X	X	X
18MC-SS03-Z1	SO	N	-78.688443	43.179753	4/16/2007	0	0.167	X	X	X	X
18MC-SS04-Z1	SO	N	-78.688269	43.179675	4/16/2007	0	0.167	X	X	X	X
18MC-SS05-Z1	SO	N	-78.688825	43.179200	4/16/2007	0	0.167	X	X	X	X
18MC-SS07-Z1	SO	N	-78.688697	43.178305	4/16/2007	0	0.167	X	X	X	X
18MC-SS08-Z1	SO	N	-78.688065	43.177702	4/16/2007	0	0.167	X	X	X	X
18MC-SS09-Z1	SO	N	-78.688835	43.177929	4/16/2007	0	0.167	X	X	X	X
18MC-SS10-Z1	SO	N	-78.687949	43.177264	4/16/2007	0	0.167	X	X	X	X
18MC-SS13-Z1	SO	N	-78.686859	43.176728	4/16/2007	0	0.167	X	X	X	X
18MC-SS14-Z1	SO	N	-78.688593	43.176933	4/16/2007	0	0.167	X	X	X	X
18MC-SS15-Z1	SO	N	-78.689143	43.176265	4/16/2007	0	0.167	X	X	X	X
Upland Soil											
18MC-MW02-Z1	SO	N	-78.688285	43.180014	6/12/2007	6	10	X	X	--	X
18MC-MW02-Z2	SO	N	-78.688285	43.180014	6/25/2007	20	22	X	X	--	X
18MC-SB07-Z1	SO	N	-78.687362	43.177199	4/26/2007	1	1.7	X	X	--	--
18MC-SB07-Z2	SO	N	-78.687362	43.177199	4/26/2007	10	10.5	X	X	--	--
18MC-SB08-Z1	SO	N	-78.686746	43.177133	4/26/2007	0.5	1.2	X	X	--	--
18MC-SB08-Z2	SO	N	-78.686746	43.177133	4/26/2007	6.5	7.2	X	X	--	--
18MC-SB09-Z1	SO	N	-78.686770	43.176961	4/26/2007	0.5	1.5	X	X	--	--
18MC-SB09-Z2	SO	N	-78.686770	43.176961	4/26/2007	3	3.5	X	X	--	--
18MC-SS02-Z1	SO	N	-78.688264	43.180178	4/16/2007	0	0.167	X	X	X	X
18MC-SS06-Z1	SO	N	-78.687823	43.179107	4/16/2007	0	0.167	X	X	X	X

Table D-4a Sample Analyses for Soil Samples Collected within the Creek Corridor, 89 Mill Street, and Upson Park for the NYSDEC SRI

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	INTERVAL SAMPLED, ft		ANALYSIS			
								METALS - SW-846 6020	PCB AROCLORS - SW-846 8082	PESTICIDES - SW-846 8081	SVOCs- SW-846 8270
18MC-SS11-Z1	SO	N	-78.686893	43.177550	4/16/2007	0	0.167	X	X	X	X
18MC-SS12-Z1	SO	N	-78.687384	43.177057	4/16/2007	0	0.167	X	X	X	X
Upson Park Public Area											
18MC-SS16-Z1	SO	N	-78.689840	43.175910	4/16/2007	0	0.167	X	X	X	X
18MC-SS17-Z1	SO	N	-78.689465	43.174775	4/16/2007	0	0.167	X	X	X	X
18MC-SS17-Z1/D	SO	FD	-78.689465	43.174775	4/16/2007	0	0.167	X	X	X	X

Key

FD = Field duplicate

N = Normal sample

SO = Soil

Table D-4b Sample Analyses for Groundwater Samples Collected within the Creek Corridor for the NYSDEC SRI

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	SCREEN INTERVAL, ft bgs		ANALYSIS				
								METALS - SW-846 6020	XPCB AROCLORS- SW-846 8082	PESTICIDES - SW-846 8081	SVOCs- SW-846 8270	VOCs - SW-846 8260
Creek Corridor Groundwater												
18MC-MW01	WG	N	-78.688718	43.180381	7/9/2007	12	22	X	X	X	X	X
18MC-MW01/D	WG	FD	-78.688718	43.180381	7/9/2007	12	22	X	X	X	X	X
18MC-MW01-FLT	WG	N	-78.688718	43.180381	7/9/2007	12	22	X	--	--	--	--
18MC-MW01-FLT/D	WG	FD	-78.688718	43.180381	7/9/2007	12	22	X	--	--	--	--
18MC-MW02	WG	N	-78.688264	43.180178	7/9/2007	18	28	X	X	X	X	X
18MC-MW02-FLT	WG	N	-78.688264	43.180178	7/9/2007	18	28	X	--	--	--	--
18MC-MW04	WG	N	-78.688269	43.179675	7/9/2007	16	26	X	X	X	X	X
18MC-MW04-FLT	WG	N	-78.688269	43.179675	7/9/2007	16	26	X	--	--	--	--
18MC-MW05	WG	N	-78.688632	43.179122	7/10/2007	13	23	X	X	X	X	X
18MC-MW05	WG	N	-78.688632	43.179122	2/11/2009	13	23	--	--	--	--	X
18MC-MW05-FLT	WG	N	-78.688632	43.179122	7/10/2007	13	23	X	--	--	--	--
18MC-MW06	WG	N	-78.687823	43.179107	7/9/2007	15	25	X	X	X	X	X
18MC-MW06-FLT	WG	N	-78.687823	43.179107	7/9/2007	15	25	X	--	--	--	--
18MC-MW08	WG	N	-78.688065	43.177702	7/11/2007	6	16	X	X	X	X	X
18MC-MW08-FLT	WG	N	-78.688065	43.177702	7/11/2007	6	16	X	--	--	--	--
18MC-MW10	WG	N	-78.687949	43.177264	7/10/2007	7	17	X	X	X	X	X
18MC-MW10-FLT	WG	N	-78.687949	43.177264	7/10/2007	7	17	X	--	--	--	--
18MC-MW11	WG	N	-78.686893	43.177550	7/10/2007	8.5	13.5	X	X	X	X	X
18MC-MW11-FLT	WG	N	-78.686893	43.177550	7/10/2007	8.5	13.5	X	--	--	--	--
18MC-MW12	WG	N	-78.687384	43.177057	7/11/2007	9.5	14.5	X	X	X	X	X
18MC-MW12-FLT	WG	N	-78.687384	43.177057	7/11/2007	9.5	14.5	X	--	--	--	--
18MC-MW13	WG	N	-78.686859	43.176728	7/10/2007	4	9	X	X	X	X	X
18MC-MW13-FLT	WG	N	-78.686859	43.176728	7/10/2007	4	9	X	--	--	--	--
18MC-MW14	WG	N	-78.688593	43.176933	7/11/2007	20	25	X	X	X	X	X
18MC-MW14	WG	N	-78.688593	43.176933	2/11/2009	20	25	--	--	--	--	X
18MC-MW14-FLT	WG	N	-78.688593	43.176933	7/11/2007	20	25	X	--	--	--	--
18MC-MW15	WG	N	-78.689143	43.176265	7/11/2007	16.7	21.7	X	X	X	X	X
18MC-MW15	WG	N	-78.689143	43.176265	2/11/2009	16.7	21.7	--	--	--	--	X
18MC-MW15/D	WG	FD	-78.689143	43.176265	2/11/2009	16.7	21.7	--	--	--	--	X
18MC-MW15-FLT	WG	N	-78.689143	43.176265	7/11/2007	16.7	21.7	X	--	--	--	--
18MC-MW16	WG	N	-78.689840	43.175910	7/11/2007	15	25	X	X	X	X	X
18MC-MW16	WG	N	-78.689840	43.175910	2/11/2009	15	25	--	--	--	--	X

Table D-4b Sample Analyses for Groundwater Samples Collected within the Creek Corridor for the NYSDEC SRI

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	SCREEN INTERVAL, ft bgs		ANALYSIS				
								METALS - SW-846 6020	XPCB AROCLORS- SW-846 8082	PESTICIDES - SW-846 8081	SVOCs- SW-846 8270	VOCs - SW-846 8260
18MC-MW16-FLT	WG	N	-78.689840	43.175910	7/11/2007	15	25	X	--	--	--	--
18MC-MW17	WG	N	-78.689465	43.174775	7/11/2007	16	26	X	X	X	X	X
18MC-MW17-FLT	WG	N	-78.689465	43.174775	7/11/2007	16	26	X	--	--	--	--

Key

FD = Field duplicate

N = Normal sample

WG = Groundwater

Table D-4c Sample Analyses for Sediment Samples Collected within the Creek Corridor and Barge Canal for the NYSDEC SRI

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	INTERVAL SAMPLED, ft		ANALYSIS					
								TOTAL SOLIDS	METALS - SW-846 6020	PCB AROCLORS - SW-846 8082	PESTICIDES - SW-846 8081	SVOCs- SW-846 8270	TOTAL ORGANIC CARBON - LLOYD KAHN
Barge Canal Sediment													
18MC-BC01-Z1	SE	N	-78.690376	43.173113	6/14/2007	0	0.167	--	X	X	--	--	--
18MC-BC02-Z1	SE	N	-78.689693	43.173883	6/14/2007	0	0.167	--	X	X	--	--	--
18MC-BC03-Z1	SE	N	-78.688520	43.174808	6/15/2007	0	0.167	--	X	X	X	X	X
18MC-BC03-Z1/D	SE	FD	-78.688520	43.174808	6/15/2007	0	0.167	--	X	X	X	X	X
18MC-BC04-Z1	SE	N	-78.687489	43.175505	6/14/2007	0	0.167	--	X	X	--	--	--
18MC-BC05-Z1	SE	N	-78.686340	43.176278	6/15/2007	0	0.167	--	X	X	--	X	X
18MC-BC06-Z1	SE	N	-78.684767	43.177370	6/13/2007	0	0.167	--	X	X	--	--	--
Creek Corridor Sediment													
18MC-AS-S01-Z1	SE	N	-78.687071	43.176480	4/25/2007	0	0.167	--	X	X	X	X	--
18MC-AS-S01-Z2	SE	N	-78.687071	43.176480	4/25/2007	0.8	1.5	--	X	X	X	X	--
18MC-L01E-S01-Z1	SE	N	-78.686722	43.176616	4/20/2007	0	0.167	X	X	X	X	X	X
18MC-L01E-S03-Z1	SE	N	-78.686559	43.176660	4/20/2007	0	0.167	X	X	X	X	X	X
18MC-L01E-S03-Z2	SE	N	-78.686559	43.176660	4/20/2007	0.5	1.2	--	X	X	--	--	--
18MC-L01W-S01-Z1	SE	N	-78.689167	43.175300	4/18/2007	0	0.167	X	X	X	--	--	X
18MC-L01W-S01-Z2	SE	N	-78.689167	43.175300	4/18/2007	0.5	1	X	X	X	--	--	X
18MC-L01W-S02-Z1	SE	N	-78.689101	43.175326	4/18/2007	0	0.167	--	X	X	X	X	--
18MC-L01W-S02-Z2	SE	N	-78.689101	43.175326	4/18/2007	1	2	--	X	X	X	X	--
18MC-L01W-S03-Z1	SE	N	-78.689115	43.175350	4/18/2007	0.3	1	--	X	X	--	--	--
18MC-L02E-S01-Z1	SE	N	-78.687418	43.176755	4/20/2007	0.8	1.5	--	X	X	--	--	--
18MC-L02E-S02-Z1	SE	N	-78.687387	43.176785	4/20/2007	0	0.5	X	X	X	X	X	X
18MC-L02E-S03-Z1	SE	N	-78.687381	43.176807	4/20/2007	0.5	1	--	X	X	--	--	--
18MC-L02W-S01-Z1	SE	N	-78.689008	43.175769	4/18/2007	1	2	--	X	X	--	--	--
18MC-L02W-S01-Z2	SE	N	-78.689008	43.175769	4/18/2007	2	3.2	--	X	X	--	--	--
18MC-L02W-S02-Z1	SE	N	-78.688986	43.175761	4/18/2007	0	2	X	X	X	X	X	X
18MC-L02W-S02-Z2	SE	N	-78.688986	43.175761	4/18/2007	1	2	X	X	X	--	--	X
18MC-L02W-S02-Z2/D	SE	FD	-78.688986	43.175761	4/18/2007	1	2	X	X	X	--	--	X
18MC-L02W-S03-Z1	SE	N	-78.688894	43.175734	4/18/2007	0	2	--	X	X	--	--	--
18MC-L02W-S03-Z2	SE	N	-78.688894	43.175734	4/18/2007	3.2	4	--	X	X	--	--	--

Table D-4c Sample Analyses for Sediment Samples Collected within the Creek Corridor and Barge Canal for the NYSDEC SRI

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	INTERVAL SAMPLED, ft		ANALYSIS					
								TOTAL SOLIDS	METALS - SW-846 6020	PCB AROCLORS - SW-846 8082	PESTICIDES - SW-846 8081	SVOCs- SW-846 8270	TOTAL ORGANIC CARBON - LLOYD KAHN
18MC-L03E-S01-Z1	SE	N	-78.687866	43.177129	4/20/2007	0.5	1.5	--	X	X	--	--	--
18MC-L03E-S02-Z1	SE	N	-78.687834	43.177156	4/20/2007	0	2	X	X	X	X	X	X
18MC-L03E-S03-Z1	SE	N	-78.687815	43.177191	4/20/2007	0.7	1.7	--	X	X	--	--	--
18MC-L03E-S03-Z1/D	SE	FD	-78.687815	43.177191	4/20/2007	0.7	1.7	--	X	X	--	--	--
18MC-L03W-S01-Z1	SE	N	-78.688786	43.176282	4/19/2007	0.8	1.8	--	X	X	--	--	--
18MC-L03W-S02-Z1	SE	N	-78.688713	43.176267	4/19/2007	0	2	X	X	X	X	X	X
18MC-L03W-S03-Z1	SE	N	-78.688638	43.176246	4/19/2007	2	3	--	X	X	--	--	--
18MC-L04W-S01-Z1	SE	N	-78.688521	43.176787	4/19/2007	0.5	1.5	--	X	X	--	--	--
18MC-L04W-S02-Z1	SE	N	-78.688407	43.176766	4/20/2007	0	2	X	X	X	X	X	X
18MC-L04W-S02-Z2	SE	N	-78.688407	43.176766	4/20/2007	1	2	X	X	X	X	X	X
18MC-L04W-S03-Z1	SE	N	-78.688311	43.176747	4/20/2007	1	2	--	X	X	--	--	--
18MC-L05W-S01-Z1	SE	N	-78.688403	43.177041	4/19/2007	1	2	--	X	X	--	--	--
18MC-L05W-S02-Z1	SE	N	-78.688340	43.177020	4/19/2007	0	2	X	X	X	X	X	X
18MC-L05W-S02-Z2	SE	N	-78.688340	43.177020	4/19/2007	1.5	3	X	X	X	X	X	X
18MC-L05W-S03-Z1	SE	N	-78.688259	43.176983	4/19/2007	0	0.5	--	X	X	--	--	--
18MC-L05W-S03-Z2	SE	N	-78.688259	43.176983	4/19/2007	1	1.5	--	X	X	--	--	--
18MC-L05W-S03-Z3	SE	N	-78.688259	43.176983	4/19/2007	2	2.5	--	X	X	--	--	--
18MC-L06-S01-Z1	SE	N	-78.688562	43.177462	4/23/2007	1	1.5	--	X	X	--	--	--
18MC-L06-S02-Z1	SE	N	-78.688457	43.177469	4/19/2007	0	2	X	X	X	X	X	X
18MC-L06-S02-Z2	SE	N	-78.688457	43.177469	4/19/2007	1	2	X	X	X	X	X	X
18MC-L06-S03-Z1	SE	N	-78.688398	43.177487	4/19/2007	0.5	1.2	--	X	X	--	--	--
18MC-L06-S03-Z1/D	SE	FD	-78.688398	43.177487	4/19/2007	0.5	1.2	--	X	X	--	--	--
18MC-L06-S03-Z2	SE	N	-78.688398	43.177487	4/19/2007	1.5	2.5	--	X	X	--	--	--
18MC-L07-S01-Z1	SE	N	-78.688596	43.177806	4/23/2007	3	3.5	--	X	X	--	--	--
18MC-L07-S01-Z1/D	SE	FD	-78.688596	43.177806	4/23/2007	3	3.5	--	X	X	--	--	--
18MC-L07-S02-Z1	SE	N	-78.688449	43.177854	4/23/2007	0	0.8	X	X	X	X	X	X
18MC-L07-S03-Z1	SE	N	-78.688255	43.177870	4/23/2007	1.5	2.5	--	X	X	--	--	--
18MC-L08-S01-Z1	SE	N	-78.688506	43.178489	4/23/2007	0.5	1.5	--	X	X	--	--	--

Table D-4c Sample Analyses for Sediment Samples Collected within the Creek Corridor and Barge Canal for the NYSDEC SRI

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	INTERVAL SAMPLED, ft		ANALYSIS					
								TOTAL SOLIDS	METALS - SW-846 6020	PCB AROCLORS - SW-846 8082	PESTICIDES - SW-846 8081	SVOCs- SW-846 8270	TOTAL ORGANIC CARBON - LLOYD KAHN
18MC-L08-S02-Z1	SE	N	-78.688245	43.178550	4/23/2007	0.4	1	X	X	X	X	X	X
18MC-L08-S03-Z1	SE	N	-78.688162	43.178535	4/23/2007	0.5	1.5	--	X	X	--	--	--
18MC-L09-S01-Z1	SE	N	-78.688505	43.179046	4/23/2007	0.5	1.2	--	X	X	--	--	--
18MC-L09-S02-Z1	SE	N	-78.688446	43.179056	4/23/2007	0	2	X	X	X	X	X	X
18MC-L09-S02-Z2	SE	N	-78.688446	43.179056	4/23/2007	0.8	1.5	X	X	X	X	X	X
18MC-L09-S03-Z1	SE	N	-78.688395	43.179070	4/23/2007	1.5	2.5	--	X	X	--	--	--
18MC-L10-S01-Z1	SE	N	-78.688721	43.179561	4/23/2007	0.5	1.5	--	X	X	--	--	--
18MC-L10-S01-Z1/D	SE	FD	-78.688721	43.179561	4/23/2007	0.5	1.5	--	X	X	--	--	--
18MC-L10-S03-Z1	SE	N	-78.688582	43.179644	4/23/2007	0.5	0.9	--	X	X	--	--	--
18MC-L11-S01-Z1	SE	N	-78.688892	43.180130	4/24/2007	1	1.6	--	X	X	--	--	--
18MC-L11-S02-Z1	SE	N	-78.688828	43.180140	4/24/2007	0.5	0.9	X	X	X	X	X	X
18MC-L11-S03-Z1	SE	N	-78.688791	43.180152	4/24/2007	0.5	0.8	--	X	X	--	--	--
18MC-L12-S01-Z1	SE	N	-78.689247	43.180602	4/24/2007	1	1.6	--	X	X	--	--	--
18MC-L12-S02-Z1	SE	N	-78.689169	43.180648	4/24/2007	0.5	0.9	X	X	X	X	X	X
18MC-L12-S03-Z1	SE	N	-78.689130	43.180671	4/24/2007	0.8	1.7	--	X	X	--	--	--
18MC-L13-S01-Z1	SE	N	-78.689548	43.181071	4/24/2007	0.8	1.5	--	X	X	--	--	--
18MC-L13-S02-Z1	SE	N	-78.689418	43.181118	4/24/2007	0.5	1	X	X	X	X	X	X
18MC-L13-S03-Z1	SE	N	-78.689343	43.181150	4/24/2007	0.5	1	--	X	X	--	--	--
18MC-L14E-S01-Z1	SE	N	-78.689792	43.181599	4/24/2007	0.5	0.8	--	X	X	--	--	--
18MC-L14E-S02-Z1	SE	N	-78.689787	43.181552	4/24/2007	0	2	X	X	X	X	X	X
18MC-L14E-S02-Z2	SE	N	-78.689787	43.181552	4/24/2007	1	1.5	X	X	X	X	X	X
18MC-L14E-S03-Z1	SE	N	-78.689756	43.181525	4/24/2007	0.8	1.2	--	X	X	--	--	--
18MC-L14W-S01-Z1	SE	N	-78.690371	43.181213	4/24/2007	0.9	2	--	X	X	--	--	--
18MC-L14W-S02-Z1	SE	N	-78.690301	43.181300	4/24/2007	0	2	X	X	X	X	X	X
18MC-L14W-S03-Z1	SE	N	-78.690292	43.181302	4/24/2007	0.5	1.2	--	X	X	--	--	--
18MC-L14W-S03-Z2	SE	N	-78.690292	43.181302	4/24/2007	1.8	2.3	--	X	X	--	--	--
18MC-L15E-S01-Z1	SE	N	-78.690168	43.181885	4/24/2007	0.5	0.9	--	X	X	--	--	--
18MC-L15E-S01-Z1/D	SE	FD	-78.690168	43.181885	4/24/2007	0.5	0.9	--	X	X	--	--	--

Table D-4c Sample Analyses for Sediment Samples Collected within the Creek Corridor and Barge Canal for the NYSDEC SRI

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	INTERVAL SAMPLED, ft		ANALYSIS					
								TOTAL SOLIDS	METALS - SW-846 6020	PCB AROCLORS - SW-846 8082	PESTICIDES - SW-846 8081	SVOCs- SW-846 8270	TOTAL ORGANIC CARBON - LLOYD KAHN
18MC-L15E-S02-Z1	SE	N	-78.690129	43.181900	4/24/2007	0	2	X	X	X	X	X	X
18MC-L15E-S03-Z1	SE	N	-78.690102	43.181912	4/24/2007	0.5	1	--	X	X	--	--	--
18MC-L15W-S01-Z1	SE	N	-78.690692	43.181807	4/24/2007	0.3	1.2	--	X	X	--	--	--
18MC-L15W-S03-Z1	SE	N	-78.690585	43.181820	4/24/2007	0.3	0.8	--	X	X	--	--	--
18MC-L16E-S01-Z1	SE	N	-78.690675	43.182410	4/24/2007	0.4	1	--	X	X	--	--	--
18MC-L16E-S02-Z1	SE	N	-78.690657	43.182423	4/24/2007	0	0.5	X	X	X	X	X	X
18MC-L16E-S03-Z1	SE	N	-78.690640	43.182437	4/24/2007	0.5	1	--	X	X	--	--	--
18MC-L16W-S01-Z1	SE	N	-78.691039	43.182229	4/24/2007	0.2	0.8	--	X	X	--	--	--
18MC-L16W-S03-Z1	SE	N	-78.690916	43.182324	4/25/2007	0.5	1	--	X	X	--	--	--
18MC-L17-S01-Z1	SE	N	-78.691374	43.182551	4/25/2007	0.4	0.8	--	X	X	--	--	--
18MC-L17-S02-Z1	SE	N	-78.691321	43.182607	4/25/2007	0.5	1	X	X	X	X	X	X
18MC-L17-S03-Z1	SE	N	-78.691267	43.182639	4/25/2007	0.5	1	--	X	X	--	--	--
18MC-L18-S01-Z1	SE	N	-78.692000	43.182945	4/25/2007	0.3	0.9	--	X	X	--	--	--
18MC-L18-S02-Z1	SE	N	-78.691983	43.183017	4/25/2007	0.2	0.9	X	X	X	X	X	X
18MC-L18-S02-Z2	SE	N	-78.691983	43.183017	4/25/2007	1.2	1.8	X	X	X	X	X	X
Upstream Sediment													
18MC-UP-S01-Z1	SE	N	-78.674866	43.171187	4/25/2007	0.1	0.8	X	X	X	X	X	X
18MC-UP-S01-Z2	SE	N	-78.674866	43.171187	4/25/2007	1.1	1.8	X	X	X	X	X	X

Key

FD = Field duplicate

N = Normal sample

SE = Sediment

Table D-5a Sample Analyses for Surface Water Samples Collected within the Creek Corridor and Barge Canal for the NYSDEC SRI Addendum

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	SCREEN INTERVAL, ft bgs		ANALYSIS: TOTAL SOLIDS	COMMENTS
Canal Water- Surface Water									
BC-AC-W-BD	WS	N			11/4/2008			X	Canal Water at Confluence
BC-AC-WF-BD	WS	N			11/4/2008			X	Canal Water at Confluence
BC-NS-W-BD	WS	N			11/4/2008			X	Canal Water Near Spillway
BC-NS-W-D	WS	N			11/19/2008			X	Canal Water Near Spillway
BC-NS-W-D/D	WS	FD			11/19/2008			X	Canal Water Near Spillway
BC-NS-WF-BD	WS	N			11/4/2008			X	Canal Water Near Spillway
BC-NS-WF-D	WS	N			11/19/2008			X	Canal Water Near Spillway
BC-NS-WF-D/D	WS	FD			11/19/2008			X	Canal Water Near Spillway
BC-DD-W-BD	WS	N			11/5/2008			X	Canal Water Near the Dry Dock
BC-DD-W-D	WS	N			11/19/2008			X	Canal Water Near the Dry Dock
BC-DD-WF-BD	WS	N			11/5/2008			X	Canal Water Near the Dry Dock
BC-DD-WF-D	WS	N			11/19/2008			X	Canal Water Near the Dry Dock
BC-NL-W-BD	WS	N			11/5/2008			X	Canal Water Near the Locks
BC-NL-WF-BD	WS	N			11/5/2008			X	Canal Water Near the Locks
BC-NL-WF-LD	WS	N			11/5/2008			X	Canal Water Near the Locks
BC-NL-W-LD	WS	N			11/5/2008			X	Canal Water Near the Locks
Creek Corridor Surface Water - East Branch									
18MC-EB-W-AD	WS	N			12/1/2008			X	
18MC-EB-W-BD	WS	N			11/4/2008			X	
18MC-EB-W-D	WS	N			11/19/2008			X	
18MC-EB-WF-AD	WS	N			12/1/2008			X	
18MC-EB-WF-BD	WS	N			11/4/2008			X	
18MC-EB-WF-D	WS	N			11/19/2008			X	
18MC-EB-WF-LD	WS	N			11/5/2008			X	
18MC-EB-W-LD	WS	N			11/5/2008			X	
Creek Corridor Surface Water - West Branch									
18MC-WB-W-AD	WS	N			12/1/2008			X	
18MC-WB-W-BD	WS	N			11/4/2008			X	
18MC-WB-W-D	WS	N			11/19/2008			X	
18MC-WB-WF-AD	WS	N			12/1/2008			X	
18MC-WB-WF-BD	WS	N			11/4/2008			X	
18MC-WB-WF-D	WS	N			11/19/2008			X	
18MC-WB-WF-LD	WS	N			11/5/2008			X	
18MC-WB-WF-LD/D	WS	FD			11/5/2008			X	
18MC-WB-W-LD	WS	N			11/5/2008			X	
18MC-WB-W-LD/D	WS	FD			11/5/2008			X	

Table D-5b Sample Analyses for Sediment Samples Collected within the Barge Canal for the NYSDEC SRI Addendum

SAMPLE NAME	SAMPLE MATRIX	SAMPLE TYPE	X-COORDINATES	Y-COORDINATES	SAMPLE DATE	INTERVAL SAMPLED, ft		ANALYSIS			COMMENTS
								METALS - SW-846 6020	PCB AROCLORS - SW-846 8082	TOTAL ORGANIC CARBON - LLOYD KAHN	
Barge Canal Sediment											
BC-L02-S01-Z1	SE	N	-78.690901	43.172779	12/6/2008	0	0.167	X	X	X	
BC-L02-S01-Z2	SE	N	-78.690901	43.172779	12/6/2008	0.167	0.333	X	X	X	
BC-L02-S02-Z1	SE	N	-78.690752	43.172696	12/6/2008	0	0.167	X	X	X	
BC-L02-S02-Z2	SE	N	-78.690752	43.172696	12/6/2008	0.167	0.5	X	X	X	
BC-L02-S02-Z2/D	SE	FD	-78.690752	43.172696	12/6/2008	0.167	0.5	X	X	X	Field Duplicate
BC-L02-S03-Z1	SE	N	-78.690609	43.172619	12/6/2008	0	0.167	X	X	X	
BC-L02-S03-Z2	SE	N	-78.690609	43.172619	12/6/2008	0.167	1	X	X	X	
BC-L03-S01-Z1	SE	N	-78.688504	43.175005	12/6/2008	0	0.167	X	X	X	
BC-L03-S01-Z2	SE	N	-78.688504	43.175005	12/6/2008	0.167	3.167	X	X	X	
BC-L03-S02-Z1	SE	N	-78.688388	43.174923	12/6/2008	0	0.167	X	X	X	
BC-L03-S02-Z2	SE	N	-78.688388	43.174923	12/6/2008	0.167	1.583	X	X	X	
BC-L03-S03-Z1	SE	N	-78.688273	43.174846	12/6/2008	0	0.167	X	X	X	
BC-L03-S03-Z2	SE	N	-78.688273	43.174846	12/6/2008	0.167	2.917	X	X	X	
BC-L04-S01-Z1	SE	N	-78.686807	43.176162	12/6/2008	0	0.167	X	X	X	
BC-L04-S01-Z2	SE	N	-78.686807	43.176162	12/6/2008	0.167	0.417	X	X	X	
BC-L04-S02-Z1	SE	N	-78.686687	43.176066	12/5/2008	0	0.167	X	X	X	
BC-L04-S02-Z1A	SE	N	-78.686687	43.176066	12/5/2008	0	0.167	X	X	--	
BC-L04-S02-Z1B	SE	N	-78.686687	43.176066	12/5/2008	0	0.167	X	X	--	
BC-L04-S02-Z1C	SE	N	-78.686687	43.176066	12/5/2008	0	0.167	X	X	--	
BC-L04-S02-Z1D	SE	N	-78.686687	43.176066	12/5/2008	0	0.167	X	X	--	
BC-L04-S02-Z2	SE	N	-78.686687	43.176066	12/6/2008	0.167	0.417	X	X	X	
BC-L04-S02-Z2/D	SE	FD	-78.686687	43.176066	12/6/2008	0.167	0.417	X	X	X	Field Duplicate
BC-L04-S03-Z1	SE	N	-78.686561	43.175971	12/6/2008	0	0.167	X	X	X	
BC-L04-S03-Z2	SE	N	-78.686561	43.175971	12/6/2008	0.167	0.167	X	X	X	

E Toxicity Reports

This appendix is provided on the attached CD.