REMEDIAL INVESTIGATION SUMMARY REPORT - OPERABLE UNIT 3

REVERE SMELTING & REFINING CORPORATION
MIDDLETOWN, NEW YORK

JUNE 9, 2017

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REVERE SMELTING & REFINING CORPORATION
MIDDLETOWN, NEW YORK

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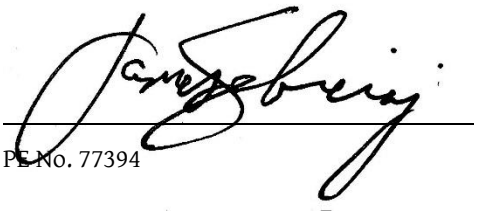
CERTIFICATION

I, James A. Sobieraj, certify that I am currently a New York State-registered professional engineer (License No. 77394) and that this Remedial Investigation Summary Report – Operable Unit 3 was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the New York State Department of Environmental Conservation's Technical Guidance for Site Investigation and Remediation (DER-10), dated May 2010.



PE No. 77394

06/09/2017

Date

1 INTRODUCTION

On behalf of Revere Smelting & Refining Corporation, WSP has prepared this Remedial Investigation (RI) Summary Report – Operable Unit 3 (OU3) for the Revere Smelting & Refining (Revere) site in Middletown, Orange County, New York (Figure 1). The Revere facility is a secondary lead smelter, and historical environmental investigations have identified impacts to environmental media as a result of operations at the site. The site has been listed in the Registry of Inactive Hazardous Waste Disposal Sites in New York State as Site #3-36-053. Lead and arsenic are the primary constituents of concern (COCs). This report was prepared in accordance with requirements outlined in the February 1, 2011, Order on Consent (Index # 3-20100528-80; Site #3-36-053) entered into by Revere, among other parties, and the New York State Department of Environmental Conservation (NYSDEC). The Order, as modified by the draft 2017 Statement of Basis for the Revere site, defines Operable Units (OUs) 1 to 4 as follows:

- OU1 – which is comprised of 9 contiguous tax parcels (Tax Parcels 41-1-70.22, 41-1-70.232, 41-1-71.22, 41-1-73.1, 41-1-73.22, 41-1-74.82, and 41-1-76 owned by Eco-Bat New York, LLC, and two offsite parcels 60-1-120 and 41-1-72.2) totaling 167 acres, less the plant facility and groundwater.
- OU2 – which represents the groundwater contamination outside the barrier wall surrounding the facility.
- OU3 – which represents all offsite media, other than groundwater, impacted by site activities.
- OU4 – which represents the plant Facility, including groundwater within the barrier wall surrounding the facility.

The draft 2017 Statement of Basis modified the boundaries of OU4 to include areas where contaminated soil still remains in the vicinity of the operating plant site that were not removed during the OU1 remediation project. OU4 was also expanded to include the main driveway entering the site from Ballard Road, to extend the boundary on the eastern and southern sides of the active facility to include those areas up to and including the barrier wall, and to add the wet electrostatic precipitator (WESP). In addition, groundwater within the barrier wall beneath the site is added to OU4. Based on these changes, OU1 and OU2 are subsequently reduced by the area added to OU4. OU1 and OU4 comprise approximately 167 acres, of which the modified OU4 is approximately 14.8 acres.

All activities addressed in this report were conducted in accordance with the NYSDEC's DER-10 Technical Guidance for Site Investigation and Remediation, dated May 2010 (NYSDEC 2010) (DER-10).

The Site Characterization Summary for Operable Unit 3 (SCS), prepared by the NYSDEC Division of Environmental Remediation (DER), determined that sufficient soil, sediment, and groundwater samples were collected within OU3 during the Remedial Investigation/Feasibility Study (RI/FS) investigation for OU1 and OU2, to warrant an additional RI/FS for OU3 (NYSDEC 2006). The NYSDEC's site characterization summary concluded that data gaps existed for OU3 with respect to lead in surface soils and sediments.

In July 2008, WSP proposed a scope of work to address those data gaps (WSP 2008a). An OU3-specific Health and Safety Plan (HASP), Field Sampling Plan (FSP), and Quality Assurance Project Plan (QAPP) were provided as appendices within the 2008 RI/FS work plan (WSP 2008a, WSP 2008b), and a QAPP addendum was provided in May 2011 as part of the RCRA Facility Investigation and Corrective Measures Study (RFI/CMS) work plan for OU4 (WSP 2011a). A Citizen Participation Plan (CPP) was also provided by WSP under separate cover (WSP 2008c), and the RI/FS work plan and CPP were approved by the NYSDEC in July 2008 (NYSDEC 2008). Subsequent modifications and phases of investigation in OU3 were proposed and completed as described in detail in Section 3.1.

In January 2015, the NYSDEC requested additional information to complete the RI/FS for OU3. On behalf of Revere, WSP submitted an additional RI/FS Work Plan – Operable Unit 3 dated May 4, 2015 (WSP 2015a), proposing additional floodplain soil and sediment sampling in the portions of OU3 south of Ballard Road. Prior to formal approval of the Work Plan, Revere received permission to collect soil and sediment samples on Tax Parcel 78-1-34.4 (758 E. Main Street). These samples were collected in September 2015, the NYSDEC provided approval of the Work Plan with modifications in November 2015, and Revere accepted the proposed modifications in November 2015. Upon receiving site access agreements with the remaining property owners and a highway work permit from the New York State Department of Transportation (NYSDOT), the outstanding field work for this phase of the OU3 RI was completed in October and November 2016. This report presents the data collected to complete the scope of work outlined in the May 2015 Work Plan, as well as historical data collected during prior phases of investigation within the limits of OU3.

Section 2 of this report presents background information on the site, including a site description, surrounding land use, geology, surface water hydrology, and standards, criteria, and guidance (SCGs) for data evaluation. Section 3 provides a summary of previous work completed for the OU3 RI/FS, as well as details regarding floodplain soil sampling, sediment sampling in Phillipsburg Creek, and sampling of transects within the Wallkill River. Section 4 includes the analytical results and a discussion of the nature and extent of contamination within OU3. Section 5 includes a description of previous work completed for the Fish and Wildlife Impact Analysis (FWIA) for OU3 as it pertains to OU3 as currently defined and steps moving forward to complete the FWIA. Section 6 presents a summary and conclusions regarding data collected to complete the OU3 RI, and presents the plan to conduct the OU3 FS. Finally, Section 7 presents a summary of references cited in this report.

2 SITE BACKGROUND

The following sections describe the site location, land uses, geology, and surface water hydrology as it pertains to OU3, and provide a brief history of previous RI work completed in OU3. Tax Parcels in OU3 where the RI was conducted1, including applicable zoning districts, are listed on Table 1.

2.1 SITE LOCATION AND DESCRIPTION

Revere operates a secondary lead smelting facility located at 65 Ballard Road, approximately 7 miles east of Middletown, in the Town of Wallkill, Orange County, New York (Figure 1). The Revere facility was constructed in 1970 and acquired by Revere in 1973. Revere manufactures lead and lead alloys. The major raw material is used lead acid batteries, such as the typical automotive battery. Other raw materials used in production include battery-manufacturing by-products, lead-bearing wastes from battery manufacturers, scrap metal from metal salvage yards, and virgin metal from metal brokers. In addition, Revere reclaims polypropylene from battery cases, and in the process, produces sodium sulfate.

The facility consists of several buildings, including the main smelter building, a crystallizer building, a containment building, a wastewater treatment building, six large storm water tanks, and employee and truck parking areas. In addition, a rail spur from the adjacent Norfolk and Southern Railroad right-of-way services the facility. The operational portion of the site (OU4) encompasses approximately 14.8 acres. Eco-Bat New York LLC (Eco-Bat) owns the operational property and contiguous undeveloped property to the north and east of the facility and undeveloped property south of the railroad right-of-way. The Eco-Bat properties consist of the tax parcels listed in the definition of OU1, which together with OU4 comprise approximately 167 acres. The undeveloped areas are in varying degrees of past disturbance that range from second growth forest, reverted farmlands, maintained lawns, and wetlands.

The facility is located in a combined rural and industrial area of south-central New York, approximately 6,000 feet northwest of the Wallkill River. North of the facility are open, overgrown fields, wetlands, and mature woodlands. North of the woodlands is a Lukoil service station. East of the facility is a combination of open, overgrown fields, wetlands, and mature woodlands. Old Dominion Freight Line, Inc., operates in a facility located approximately 0.25 mile southeast of the site. Interstate Highway 84 (I-84) is located approximately 0.6 mile south of the site. A Ball Aluminum can manufacturing facility is located west of the site across Ballard Road, and additional industrial development is located further west and south.

Revere completed construction of a Wet Electrostatic Precipitator (WESP) emissions control unit in OU1 in the former Eastern Fill Area (EFA) east of the main plant in 2016. The EFA was recently remediated by Revere, and an onsite containment cell was constructed as part of the Phase I Remedial Design/Remedial Action (RD/RA) for OU1 to dispose of arsenic and lead contaminated soils and sediments that had first been stabilized to meet the criteria of a non-hazardous waste. From 2014 through 2016, approximately 24 acres of wetlands and over 3,500 linear feet of streams in OU1 were remediated and restored as part of the Phase IIB RA.

2.2 GEOLOGY

The Revere facility lies within the Great Valley physiographic region of southeastern New York State. The Great Valley region is part of the Appalachian Valley and Ridge province, which lies northwest of the Hudson Highlands. The regional hydrogeologic system underlying the facility consists of Pleistocene-age glacial till deposits which overlie Ordovician-aged bedrock consisting primarily of shale, siltstone, and greywacke horizons. The glacial tills are generally poorly sorted and primarily consist of silt- or clay- sized particle matrix with minor sand and gravel horizons. The thickness of the till

[1] Tax year 2016 property data generated from the Orange County New York Image Mate Online real property search database at www.propertydata.orangecountygov.com

deposits in the Wallkill area may exceed 30 feet. The glacial till overlies shale bedrock that has been folded and faulted during several tectonic episodes.

2.3 SURFACE WATER HYDROLOGY

There are three active stream channels located on the Revere property which combined flow into OU3. One stream located on the western side of the facility (western stream) flows from north to south and crosses underneath the railroad tracks approximately 225 feet east of Ballard Road (Figure 2). The western stream continues to flow along a generally southern heading through OU1 south of the railroad tracks. Based upon visual observations of surface water flow, the western stream is assumed to be a net gaining stream. In the FWIA, the stream is classified as a marsh headwater stream characterized by well-defined patterns of alternating pool, riffle and run sections with moderate flow. The western stream is designated as a Class C, Standard C(T) water body (O'Brien & Gere 2007).

A pond located southeast of the facility operations in OU1 has a single discharge point (pond stream) which flows along a generally western heading from the pond for approximately 250 feet before changing to a more southern heading and crossing underneath the railroad tracks (approximately 700-feet east of Ballard Road). The pond stream intersects and supplements the flow from the western stream within OU1.

A third stream is located on Revere property approximately 500 feet east of the onsite pond (eastern stream). The eastern stream flows in a southerly direction and crosses underneath the railroad tracks and onto the SP Realty Associates II LLC property (Tax Parcel 60-1-120.2) approximately 1,900-feet east of Ballard Road and joins the western and pond streams south of their confluence in OU1 (Figure 2).

Combined, these streams continue on a generally southwestern heading in OU1, receiving storm water runoff from manufacturing and truck parking areas on both the 260 Matrix Ballard LLC (Tax Parcel 60-1-120.1) and the Old Dominion Freight Line, Inc. (Tax Parcel 60-1-120.3) properties, and cross underneath Ballard Road approximately 0.5 mile south of the entrance to the Revere facility into OU3. On the western side of Ballard Road, the combined stream travels along a southwestern heading within property owned by Crystal Run Newco LLC (referred to as the Galleria at Crystal Run Mall property; Tax Parcel 78-1-92), where it intersects with the discharge streams from three ponds located on the same property. Based on aerial imagery, this stream (henceforward referred to as Phillipsburg Creek) passes underneath I-84 approximately 0.3 mile southwest of the Ballard Road/I-84 overpass and continues towards the Wallkill River located approximately one mile south of the Revere facility. During previous sampling events, WSP noted at least two additional distinct surface water inputs to Phillipsburg Creek within the Galleria at Crystal Run Mall property. One of the intersecting streams appears to drain all or a portion of several commercial and industrial properties west of Ballard Road and north of the Galleria at Crystal Run Mall. A second intersecting stream appears to contain runoff from I-84 that drains from the elevated highway embankment to the south.

2.4 STANDARDS, CRITERIA, AND GUIDANCE

Based on previous phases of investigation in OU3 and remediation completed in OU1, the primary compounds and media of concern in OU3 are arsenic and lead concentrations above their respective Standards, Criteria, and Guidelines (SCGs) in soil and sediment. The following SCGs were evaluated as screening values where applicable during the RI process:

- The unrestricted use Soil Cleanup Objectives (SCOs) for soil constituents under 6 NYCRR Part 375-6.8(a)
- Soil Remedial goals (RGs) for Ecological Areas in OU1
- Sediment guidance values (SGVs) listed in the NYSDEC Commissioner's Policy 60 (CP-60) Screening and Assessment of Contaminated Sediment

The unrestricted use SCOs under 6 NYCRR Part 375-6.8(a) represent the generic standards developed by the NYSDEC for the protection of ecological resources. In accordance with DER-10, if concentrations in environmental media exceed the unrestricted use SCOs, SCOs based on protection of health should also be considered. Therefore, SCOs for unrestricted and restricted use are provided for comparison on data Tables 3 through 7 in this report.

The 2011 Consent Order defines Ecological Areas in OU1 as areas delineated as wetlands in the proximity of the Western Stream and within OU1 south of the railroad tracks to the east of Ballard Road, with the final definition of Ecological Areas dependent upon a wetland delineation approved by the NYSDEC during the design of the RA for OU1. During the Phase IIB RA, Ecological Areas were subject to site-specific remedial goals for soil of 13 mg/kg for arsenic and 400 mg/kg for lead, as derived from soil analytical data and biota tissue sampling as protective of ecological resources. Sediment Areas in OU1 were defined as permanent or nearly permanent water bodies and streams that were impacted by Revere's operations to the east of Ballard Road. Soil within Sediment Areas up to a depth of 2 feet was considered to be sediments (for cleanup criteria selection), while soil below 2 feet was remediated to the site-specific remedial goals for soil in Ecological Areas.

Given the extensive soil and sediment remediation completed in OU1 (upstream of OU3) and the similarities in predominant land usage and characteristics between OU1 and OU3 (i.e., densely wooded and undeveloped parcels), the OU1 site-specific soil RGs for lead and arsenic are utilized in this report along with the unrestricted SCOs for data evaluation.

Sediment sampling data throughout this report are compared to the SGVs in CP-60 as requested by the NYSDEC in their November 5, 2015 approval letter (NYSDEC 2015). Prior to the 2015/2016 OU3 RI work, sediment data were compared to lowest effect level (LEL) for all sediment constituents under Technical Guidance for Screening Contaminated Sediments (NYSDEC 1999). The LEL for lead was 31 mg/kg, while the LEL for arsenic was 6 mg/kg. CP-60 was published on June 24, 2014. Sediment remediation in OU1 was completed to achieve the LELs presented above.

Concentrations of contaminants in sediment that cause toxicity to receptors can vary greatly. The NYSDEC Freshwater SGVs are segregated by concentrations below which toxicity does not occur (Class A), above which toxicity consistently occurs (Class C), and a range in between where toxicity varies (Class B). For example, a given contaminant concentration in the Class B range may be toxic in one sediment sample but not in another. For arsenic and lead, these concentrations are as follows:

NYSDEC Freshwater Sediment Guidance Values		
Sediment Class	**Arsenic (mg/kg)**	**Lead (mg/kg)**
Class A	<10	<36
Class B	10-33	36-130
Class C	>33	>130
Previous Lowest Effect Level	6	31

3 OU3 REMEDIAL INVESTIGATION ACTIVITIES

RI activities in OU3 were first initiated in 2008 and were conducted in various phases through November 2016. Section 3.1 includes a timeline of previous submittals of data collected during the OU3 RI, while Sections 3.2 through 3.4 include information regarding sampling activities conducted during the most recent phase of RI activities.

For completeness, Table 2 includes a list of all surface soil and sediment samples that have been collected to date in OU3 west and south of Ballard Road. The table includes the horizontal coordinates for each sample location and sample depths. In accordance with the 2008 RI/FS work plan, work plan modifications, and subsequent work plans, a subset of the surface soil and sediment samples that were analyzed for lead and arsenic were submitted for Target Analyte List (TAL) metals analysis or the full Target Compound List (TCL)/TAL list analysis. Photographs of Phillipsburg Creek and the Wallkill River are provided in Appendix C.

3.1 SUMMARY OF PREVIOUS OU3 RI/FS WORK COMPLETED

The initial RI/FS work plan for OU3 was submitted to the NYSDEC in July 2008. At the time, OU3 was defined as all offsite environmental media and included areas north (North Border) and east (East-Forested Wetland) of the main plant, the offsite area west of Ballard Road (West of Site), and the portion of the site south of the railroad tracks. The area south of the railroad tracks was divided into two study areas to be sampled using a phased approach: the Southern Parcel and the South Outside Parcel. OU1 was defined as all onsite areas not included in OU4 and did not include the North Border, East-Forested Wetland, the Southern Parcel, or the South Outside Parcel. OU1 was redefined in the 2011 Order to include these four areas.

The following is a timeline of previous submittals and regulatory approvals for OU3 as defined before the 2011 Order:

- In July 2008, the NYSDEC approved the RI/FS work plan and the CPP. This work plan included a background soil evaluation; surface and subsurface soil sampling at six locations in the West of Site Area; a two-phased approach based on a grid-spacing of 50-feet in the Southern Parcel and South Outside Parcel (Phase I involved soil sampling at 100-foot node points, extending the sampling an additional 200-feet based on initial results; Phase II included soil sampling at 50-foot node points around locations with surface soils in excess of the lead screening level); soil sampling the East-Forested Wetland and North Border areas using the same gridded approach; sediment sampling in the western, eastern, pond, and combined streams using a 150-foot sampling interval; surface water sampling in the eastern, western, and combined streams; and groundwater sampling of newly installed wells in the South Outside Parcel. In addition, the work plan included Step 1 of the FWIA for OU3 (as previously defined).
- A public meeting was held in September 2008; soil, sediment, and surface water samples were collected on properties owned by Revere in September and October 2008; and interim sampling results were provided to the NYSDEC in December 2008 (WSP 2008c) and January 2009 (WSP 2009). As agreed to by the NYSDEC, no soil samples were collected on the developed portions of Tax Parcel 60-1-120. In addition to the sediment samples proposed in the work plan, two sediment samples were collected from Phillipsburg Creek approximately 100 and 250 feet south of I-84.
- Based on the results of the 2008 sampling, WSP proposed modifications to the scope of work in the RI/FS work plan, including further vertical delineation of lead in soil in the North Border, East-Forested Wetland, and Southern Parcel areas; sampling of the South Outside Parcel on a 250-foot node point frequency and at intervals consistent with the definition of surface soil in DER-10, additional sampling in the East Extended Study Area; and additional soil sampling of four transects in the South Parcel and three transects in the South Outside Parcel to refine the limits of heavily impacted soil near the pond and combined streams (WSP 2009). The NYSDEC approved these modifications with conditions in a letter dated April 7, 2009.
- In March 2010, WSP submitted an RI report for OU3 (as previously defined) detailing the results of investigation activities conducted from September 3, 2008, through December 16, 2009 (WSP 2010a). In a letter dated August 26,

2010, the NYSDEC provided comments on the March 16, 2010 RI report for OU3 (as previously defined) and included a requirement to submit a supplemental work plan to further characterize the contamination present in OU3 (as previously defined) and to complete the soil and sediment sampling scope of work approved under the March 6, 2009 RI Work Plan Modifications for OU3 (WSP 2009). Field investigation activities related to the supplemental work plan were conducted from October 12, 2010 through December 16, 2010. A large portion of the sampling was conducted in areas of the site that now fall under the definition of OU1.

— In October 2010, WSP submitted a FWIA for OU3 (as previously defined). The FWIA was conducted according to the 1994 NYSDEC guidance document entitled Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites. The FWIA included an evaluation of the potential impact of site-related constituents of concern on fish and wildlife resources (WSP 2010b).

Subsequent to the supplemental RI work plan, the February 2011 Order that redefined the limits of OU3 was signed. Therefore, prior RI work completed for OU3 (as previously defined) in the North Border, East-Forested Wetland, Southern Parcel, and South Outside Parcel areas became part of OU1. To minimize confusion, WSP presented the investigation findings for these areas in a report entitled, Remedial Investigation Report Addendum, Operable Unit 1, dated March 31, 2011 (WSP 2011b).

The following activities were completed after OU3 was redefined in the 2011 Order:

— Field work activities for the supplemental work plan were completed in October 2011, and the data that were applicable to OU3 were submitted to the NYSDEC in May 2012 (WSP 2012). In August 2012, the NYSDEC requested additional sediment sampling in Phillipsburg Creek downstream of the Galleria at Crystal Run Property (Tax Parcel 78-1-92). A subsequent sampling work plan including 9 additional sediment samples to investigate the potential historical contribution of lead from the drainage embankments north and south of I-84 and to further define the extent of lead, arsenic, and/or other metals in Phillipsburg Creek was submitted in September 2012 and approved by the NYSDEC in November 2012. Six composite sediment samples were included as part of the Step 2C FWIA; one from each stream reach.

— WSP submitted the additional sediment sampling data to the NYSDEC in March 2013 for review (WSP 2013). The NYSDEC requested additional sampling of Phillipsburg Creek further downstream in June 2013. A work plan was submitted in July 2013 that included up to 14 additional sediment samples. The additional samples were collected in May 2014 and the data submitted to the NYSDEC in July 2014. As shown on Figure 2, both lead (17.0 mg/kg) and arsenic (5.6 mg/kg) were detected below the previous screening values of 31 and 6 mg/kg, respectively, in the furthest downgradient sample collected to date (WSP-SED-55).

In January 2015, the NYSDEC requested additional sediment and floodplain sampling in OU3. On behalf of Revere, WSP submitted an additional RI/FS Work Plan – Operable Unit 3 dated May 4, 2015, proposing floodplain soil and sediment sampling in the portions of OU3 west and south of Ballard Road. Prior to formal approval of the Work Plan, Revere received permission to collect soil and sediment samples at the 758 E. Main Street property. These samples were collected in September 2015, the NYSDEC provided approval of the Work Plan with modifications in November 2015, and Revere accepted the proposed modifications in November 2015. Upon receiving site access agreements with the remaining property owners and a NYSDOT highway work permit to complete the sampling in the highway rights-of-way, the outstanding field work for this phase of the OU3 RI was completed in October and November 2016.

All samples collected during this phase of the OU3 RI were shipped on ice to SGS Accutest Inc., of Dayton, New Jersey for analysis in accordance with the July 2008 QAPP Revision No. 1 (WSP 2008b). In late March 2017, Laboratory Data Consultants, Inc. of Carlsbad, California, completed the validation of the samples collected in 2015 and 2016. Horizontal measurements of the floodplain soil and sediment sampling locations were collected using a Trimble GeoExplorer® 6000 Series™ Global Positioning System (GPS) receiver. Horizontal measurements are referenced to the New York State Plane coordinate system (NAD-83; Table 2).

3.2 2015/2016 OU3 FLOODPLAIN SOIL SAMPLING

WSP collected 223 surface soil samples, including 13 blind duplicates, at 76 locations within the floodplain of Phillipsburg Creek as shown on Figure 2. Samples WSP-OU3-65 through WSP OU3-70 collected on the 758 E. Main Street property were obtained from 0 to 2, 2 to 6, and 6 to 12 inches, while the remaining subset of samples were collected from 0 to 6, 6 to 12,

and 12 to 24 inches or until refusal. All samples were collected in accordance with WSP's Standard Operating Procedures (SOPSs) using decontaminated steel shovels or hand augers. Sampling equipment was decontaminated between locations and intervals using distilled water and non-phosphate soap. Quality assurance/quality control (QA/QC) samples, including blind duplicates, matrix spike/matrix spike duplicates, trip blanks, and equipment blanks, were collected in accordance with the QAPP for the Revere site.

Soil samples were collected from each side of Phillipsburg Creek approximately 50-feet perpendicular to the stream channel at the approximate locations of previous sediment samples as shown on Figure 2. Similar to the sediment sampling, this corresponded to a sampling frequency of one set of samples per every 150 linear feet of stream. If the 100-year floodplain was less than 50-feet from the stream bank, the soil sample was collected at the limit of the 100-year floodplain. Any removed soil remaining after sampling was returned to its original boring location.

In accordance with the Work Plan, 184 of the collected samples, including 13 blind duplicates, were analyzed according to following procedures:

- Samples from all three intervals at each location on the 758 E. Main Street property were analyzed for arsenic and lead using Environmental Protection Agency (EPA) Method 6010B.
- Samples from the shallow (0 to 6-inch) and middle (6 to 12-inch) intervals at each location on the remaining properties were initially analyzed for arsenic and lead using EPA Method 6010B. A laboratory hold was placed on the analysis of the deeper (12 to 24-inch) interval samples pending the results of the overlying samples.
- If the concentrations in the 6 to 12-inch sample exceeded the unrestricted use SCO of 63 mg/kg for lead, then the 12-24-inch sample from that location, if collected, was analyzed for lead.
- If the concentrations in the 6 to 12-inch sample exceeded the unrestricted use SCO of 13 mg/kg for arsenic, then the 12-24-inch sample from that location, if collected, was analyzed for arsenic.
- Seven samples (5 percent) and two blind duplicates were analyzed for TAL metals using EPA Method 6010B/7471.
- Three samples (2 percent) and one blind duplicate were analyzed for VOCs by EPA Method 8260, SVOCs by EPA method 8270C, pesticides by EPA Method 8081, and PCBs by EPA Method 8082.

The validated results of the soil sampling can be found in Tables 3 through 7, while full analytical laboratory reports can be found on DVD in Appendix A. A data usability summary report is included in Appendix B. Validated EQuIS-formatted electronic data deliverables will be provided to the NYSDEC via electronic mail upon submission of this report.

3.3 2015/2016 OU3 PHILLIPSBURG CREEK SEDIMENT SAMPLING

Samples WSP-SED-01 and WSP-SED-27 through WSP-SED-64 were previously collected from 38 locations in the Phillipsburg Creek west and south of Ballard Road during prior OU3 RI phases. For all phases of the OU3 RI, an approximate interval of 150 feet along the stream reach was used to guide the placement of sampling locations. Sampling locations were adjusted as necessary to obtain sediments from depositional areas within the stream. Sediment samples were collected from 0 to 3 inches unless otherwise noted.

In 2015 and 2016, sediment samples were collected at 9 additional locations along Phillipsburg Creek as shown on Figure 3. In September 2015, three sediment samples (WSP-SED-66 through WSP-SED-68) were collected from Phillipsburg Creek south of the most recent downstream sample (WSP-SED-55) on the 758 E. Main Street property (Figure 3). In October and November 2016, eight additional samples were collected from multiple intervals (0 to 6 inches or 6 to 12 inches) from five locations as requested by the NYSDEC (WSP-SED-32, WSP-SED-37, WSP-SED-51, WSP-SED-52, and WSP-SED-57). Due to obstructions, WSP was unable to collect sediment samples from the 6 to 12-inch intervals from locations WSP-SED-51 and WSP-SED-52 and the 12 to 24-inch interval at any location. Blind duplicate samples were collected for QA/QC purposes from the 0 to 6-inch interval at locations WSP-SED-51 and WSP-SED-57.

The NYSDEC requested additional sampling in the portion of Phillipsburg Creek that was re-aligned by the NYSDOT during roadway construction east of the Orange Regional Medical Center. One sample (WSP-SED-65) was collected from the current restored stream channel; however, the NYSDEC requested a second sample be collected from the temporary

channel created by the NYSDOT during construction in 2014 (proposed location WSP-SED-69). In October 2016, this temporary channel was no longer visible and was backfilled by the NYSDOT with general fill as part of the final surface restoration. Therefore, with the approval of the NYSDEC a sediment sample was not collected from this channel but a soil sample was collected at this location instead (WSP-OU3-83).

All samples were collected in accordance with WSP's SOPs using decontaminated steel shovels or stainless steel spoons. All non-disposable sampling equipment was decontaminated using distilled water and non-phosphate soap in between sampling locations. All samples were analyzed for lead and arsenic using EPA Method 6010B, with the exception of the sample collected from WSP-SED-57, which was analyzed for TAL metals.

For completeness, results from all sediment samples collected from Phillipsburg Creek are included in Tables 8 and 9. Full analytical laboratory reports from the most recent sampling event can be found on DVD in Appendix A, while a data usability summary report is included in Appendix B. Validated EQuIS-formatted electronic data deliverables will be provided to the NYSDEC via electronic mail upon submission of this report. Laboratory reports from prior sediment sampling events can be found in appendices included in previous submittals (WSP 2009, WSP 2010a, WSP 2012, WSP 2013, and WSP 2014).

3.4 OU3 WALLKILL RIVER TRANSECT SAMPLING

At the request of the NYSDEC, soil and sediment samples were collected from six transects spanning the Wallkill River in October and November 2016 (Figure 4). One transect was located at the confluence of Phillipsburg Creek with the Wallkill River, one transect was located approximately 150 feet upstream of the confluence, and four transects were located at approximately 150-foot intervals downstream of the confluence. Each transect included soil samples collected from 0 to 6, 6 to 12, and 12 to 24 inches approximately 50 feet from the edge of either bank of the river, and sediment samples from similar intervals at three locations of depositional areas within the river itself. At the time of the event, the water level in the river was at normal low levels (see photographs in Appendix C), allowing WSP personnel to wade across the river to collect the samples.

WSP was able to collect soil samples from all of the proposed sampling locations and intervals for all transects with the exception of the deepest (12 to 24-inch) interval at locations WSP-OU3-78 and WSP-OU3-80 due to auger refusal. However, within the river, WSP experienced difficulty collecting sediment samples from below the 0 to 6-inch interval due to rocky conditions and borehole collapse. Therefore, WSP collected all of the sediment samples from the 0 to 6-inch interval in October 2016 using decontaminated hand augers or an AMS soil core sampler with a slide hammer, and then later returned with additional equipment in an attempt to isolate the deeper sediments during sample collection. WSP attempted various methodologies to collect sediment samples from deeper intervals (including driving temporary PCV casing and using a post-hole digger) at locations WSP-SED-70, WSP-SED-73A, WSP-SED-76, and WSP-SED-79A; however, was unsuccessful due to surrounding water infiltrating the borehole and/or rocky conditions. Ultimately, sediment samples were collected from the 6 to 12-inch interval at these locations using a decontaminated shovel to dig a large enough hole such that the samples could be collected from the deeper intervals without sloughing from the shallower interval.

4 NATURE AND EXTENT OF CONTAMINATION

The following sections present the analytical results of the soil and sediment sampling conducted as part of the OU3 RI. Lead is the primary compound detected above the RGs for soil or SGVs for Class A sediments in samples from OU3.

4.1 OU3 RI PHILLIPSBURG CREEK FLOODPLAIN SOIL SAMPLING

As shown on Table 3 and Figure 2, arsenic and lead were detected in the 100-year floodplain of Phillipsburg Creek at concentrations ranging from 2.0 to 32.7 and 11.1 to 3,090 mg/kg, respectively. Twenty samples from 6 to 12 inches contained either arsenic or lead above the unrestricted SCOs; therefore, ten additional samples from 12 to 24 inches were analyzed for arsenic or lead. The remaining ten samples were not available for analysis due to auger refusal during collection.

Arsenic and lead were detected above the Ecological Area RGs of 16 and 400 mg/kg, respectively, at 12 locations during the 2015/2016 sampling. The maximum arsenic and lead concentrations in floodplain soil (32.7 and 3,090 mg/kg, respectively) were found at WSP-OU3-03, which is located adjacent to the storm water retention ponds on the Galleria at Crystal Run property (Tax Parcel 78-1-92). Five of the 12 locations with arsenic and lead above the Ecological Area RGs are located on this tax parcel.

As can be seen on Figure 2, the concentrations of arsenic and lead in floodplain soil generally decrease as the distance from the Revere site increases. Downgradient of I-84, arsenic or lead was detected above the Ecological Area RGs at only 6 of 61 locations, with the highest concentrations detected at location WSP-OU3-38.

Arsenic or lead were only detected above the Ecological Area RGs in two locations below 12 inches (WSP-OU3-24 and WSP-OU3-60). WSP-OU3-24 is located adjacent to I-84 and the lead results at this location are markedly different from the samples collected from upstream locations on both sides of the stream. The lead concentrations at WSP-OU3-24 are two orders of magnitude higher than concentrations in adjacent samples (e.g., WSP-OU3-20 and WSP-OU3-22), and elevated concentrations persist at deeper intervals for WSP-OU3-24, whereas, the concentrations decline with depth for upstream locations. These data indicate a source other than the Revere site, likely contaminated fill or lead deposition associated with I-84. Elevated concentrations of lead detected at location WSP-OU3-60 may have also been greatly influenced by recent roadway construction by the NYSDOT. A temporary stream channel was created during roadway work conducted in 2013/2014, and after construction was completed the stream channel was restored to the original alignment. This location may have been significantly disturbed by the construction work and likely does not represent natural depositional conditions based on results for nearby sampling locations.

Seven floodplain soil samples and one blind duplicate were submitted for TAL metals analysis (Table 4). In addition, two floodplain soil samples (WSP-OU3-11 and WSP-OU3-35) were submitted for the full TCL/TAL list (Tables 5 through 7). The samples collected from locations WSP-OU3-18, WSP-OU3-38, and WSP-OU3-67 contained metals (arsenic, lead, manganese, and zinc) above the unrestricted use SCOs, but only arsenic and lead were detected above the OU1 RGs at location WSP-OU3-38. The elevated concentration of manganese above unrestricted SCOs provides further evidence that the lead concentrations detected at WSP-OU3-38 are attributable to a source other than the Revere site, as manganese is not a contaminant of concern for the Revere site. VOCs, SVOCs, pesticides, or PCBs were not detected above the unrestricted SCOs at any location.

4.2 OU3 RI PHILLIPSBURG CREEK SEDIMENT SAMPLING

Throughout the OU3 RI, sediment samples were collected at 45 locations along Phillipsburg Creek, generally west and south of Ballard Road. Prior to 2011, sediment samples were only analyzed for lead (with the exception of samples WSP-SED-I-84-01 and WSP-SED-29, which were also analyzed for TAL metals). Since 2011, all sediment samples have been analyzed for arsenic and lead. In total, ten samples and two blind duplicates have been submitted for TAL metals analysis (Table 9).

One sediment sample (WSP-SED-01) was collected just north of the culvert before the stream crosses under Ballard Road in September 2008, while two additional sediment samples (WSP-SED-I84-01 and WSP-SED-I84-02) were collected south of I-84 in October 2008. All three samples contained lead above the previous screening value for lead of 31 mg/kg, while sample WSP-SED-I-84-OU1, the only sample in this group analyzed for TAL metals, also contained arsenic above the previous screening value for arsenic of 6 mg/kg. Eleven samples were then collected in 2009 from Phillipsburg Creek on the Galleria at Crystal Run Mall property (WSP-SED-27 through WSP-SED-37). Similar to the initial three samples, all of the sediment samples from that reach of Phillipsburg Creek contained lead above the previous screening value of 31 mg/kg.

In October 2011, WSP collected six sediment samples (WSP-SED-38 through WSP-SED-43) on Galleria at Crystal Run Mall property to evaluate the potential metals attributable to the Revere facility and those attributable to offsite and historical sources. While the concentrations of metals in these samples were generally lower than those detected during the previous sampling events, the NYSDEC requested further downgradient investigation.

Subsequent investigations were completed in 2013 and 2014, and although concentrations decreased as the distance from the Revere property increased, samples collected as far downstream as just north of the 758 E. Main Street property contained lead above the previous screening value of 31 mg/kg for lead. The delineation of lead and arsenic in OU3 sediments was to be considered complete when two consecutive samples contain lead and arsenic at concentrations below the screening values. While the most downstream sample (WSP-SED-55) met the previous screening value criteria, adjacent upstream sample WSP-SED-64 contained lead at 124 mg/kg, prompting subsequent investigation further downstream.

In 2015 and 2016, one additional sample (WSP-SED-65) was collected on the NYSDOT property, while three sediment samples were collected at 758 E. Main Street. The NYSDEC also requested sediment samples from multiple intervals at five locations within Phillipsburg Creek (Figure 3). At this time, the NYSDEC indicated that the sediment screening criteria shall be the NYSDEC Freshwater Guidance Values. These values are segregated by concentrations below which toxicity does not occur (Class A), above which toxicity consistently occurs (Class C), and a range in between where toxicity varies (Class B). As shown on Tables 8 through 12 and Figure 3, WSP evaluated the data collected to date against the new sediment guidance values (SGVs). Concentrations in bold exceed the applicable Class A criteria, while shaded concentrations exceed Class B criteria.

As shown on Tables 8 and 9, Class A criteria were exceeded for arsenic, cadmium, copper, lead, nickel, and zinc. However, Class B criteria were only exceeded for arsenic and lead. Arsenic was detected above the Class A criteria of 10 mg/kg in 29 out 46 samples (including blind duplicates), but above the Class B criteria of 33 mg/kg in only 5 samples. The arsenic concentration above the Class A criteria ranged from 10.2 to 159 mg/kg, with the highest concentrations at locations WSP-SED-51 and WSP-SED-52. All 5 samples that contained arsenic above the Class B criteria were located in the reach of Phillipsburg Creek south of Interstate I-84 and east of Route 17.

Lead was detected above the Class A criteria of 36 mg/kg in 47 out 58 samples (including blind duplicates), but above the Class B criteria of 130 mg/kg in only 32 samples. The lead concentration above the Class A criteria ranged from 37.3 to 5,890 mg/kg, with the highest concentrations at locations WSP-SED-32 (4,550 mg/kg), WSP-SED-51 (5,890 mg/kg), and WSP-SED-52 (3,420 mg/kg). It should be noted that all three of these locations were resampled in 2016 and the concentrations decreased to 80.3, 552, and 75.9 respectively, which may be attributable to the increase in thickness of the sampling interval (from 0 to 3 inches or 0 to 6 inches) and a decrease in upstream deposition since soil and sediment in OU1 were remediated during the Phase IIB RA. None of the samples collected from the six most downstream locations (WSP-SED-55 and WSP-SED-64 through WSP-SED-68) contained lead above the Class B criterion, and only 5 out of the 8 remaining locations south of Route 17 contained lead above the Class B criterion.

4.3 WALLKILL RIVER TRANSECTS

At the request of the NYSDEC, soil and sediment samples were collected from 6 transects spanning the Wallkill River. Each transect consisted of soil samples collected in the 100-year floodplain on both banks of the river, and three sediment sampling locations in depositional areas of the river in between. As shown on Tables 5 through 7 and 10 through 12, VOCs, SVOCs, and PCBs were not detected above the unrestricted use SCOs in any soil samples or above the Class A SGVs in sediment samples collected from the Wallkill River transects. Several pesticides (4,4'-DDD, 4,4'-DDE, and 4,4'-DDT) were detected slightly above the unrestricted use SCOs in soil but well below the residential use SCOs, and pesticides were not detected above the Class A SGVs in any sediment samples. These presence of these compounds in soil is likely due to ubiquitous use historically and are not site-related.

Arsenic was only detected above the unrestricted use SCOs in soil at two locations (WSP-OU3-73 and WSP-OU3-76) and zinc was detected at one location (WSP-OU3-80; 110 mg/kg) above the unrestricted use SCOs, while lead was detected above the unrestricted use SCOs at five locations. The arsenic concentrations also slightly exceeded the OU1 RG of 16 mg/kg (18.8 to 34.4 mg/kg) for Ecological Areas at these locations, while none of the lead concentrations exceeded the OU1 RG of 400 mg/kg for Ecological Areas.

Arsenic was detected above the Class A SGV in sediment at six locations in the Wallkill River, but none of the concentrations exceeded the Class B SGV (Table 8). The highest concentration of arsenic in sediment samples from the Wallkill River was 12.4 mg/kg, which is at the lower end of the Class B SGV range of 10 to 33 mg/kg for arsenic. Nickel, silver, and zinc were detected above the Class A SGVs in the Wallkill River sediments; however, only the concentrations of silver, which is not a site-related compound, exceeded the Class B SGV and the concentrations of nickel and zinc were at the lower end of the Class B SGV range. Lead was detected above the Class A SGV at four locations, but the concentrations did not exceed the Class B SGV at any location and with the exception of location WSP-SED-84 (107 mg/kg), were generally in the lower end of the Class B SGV range at concentrations ranging from 39.0 to 76.1 mg/kg.

5 FISH AND WILDLIFE IMPACT ANALYSIS

A FWIA was conducted on behalf of the NYSDEC as part of the RI/FS for OU1 (O'Brien & Gere 2007) in accordance with the 1994 document entitled Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites (NYSDEC 1994) and DER-10 Section 3.10. The study area for the FWIA for OU1 was defined as the site property and the area within a 0.5-mile radius of the site, which included all of the proposed initial sampling locations in the RI/FS work plan for OU3 (as previously defined; WSP 2008). As such, WSP incorporated some of the analysis approved by the NYSDEC for the OU1 FWIA into the OU3 FWIA (as previously defined) submitted by WSP in October 2010 (WSP 2010b). WSP conducted an independent site reconnaissance effort for the OU3 FWIA (as previously defined), and some conclusions related to habitat definition and assessment differ between the two documents.

WSP proposes advancing the OU3 FWIA based on the revised limits of OU3 as defined by the 2015/2016 sampling. The study area for the OU3 FWIA will include Phillipsburg Creek and the associated 100-year floodplain west of Ballard Road to the Wallkill River. Low concentrations of arsenic are present in surficial soil on the property located at the confluence of Phillipsburg Creek and the Wallkill River (Tax Parcel 78-1-34.4) and in two samples in the 100-year floodplain of the Wallkill River; however, lead is not present in these samples at concentrations above the OU1 remedial goals for Ecological Areas. While arsenic and lead were detected in sediments above the Class A SGVs at 7 locations, neither was detected above the Class B SGVs in any sediment samples collected in the Wallkill River. Therefore, WSP proposes defining the initial study area to extend to the confluence of Phillipsburg Creek with the Wallkill River but not within the river itself.

The following sections describe previous work completed in OU3 for the FWIA, and the proposed next steps for completing the OU3 FWIA.

5.1 PREVIOUS FWIA WORK COMPLETED IN OU3

The study area for the OU3 FWIA (as previously defined) was defined as the area of impacted soil and sediments within OU3 and the area within a 0.5 mile and 2 mile radii of the known boundary of impact. In October 2008, a site reconnaissance was performed to determine the covertypes, fish, and wildlife present within the study area (as previously defined). WSP incorporated the physical boundaries of the covertypes as presented in the OU1 FWIA and only changed the covertype description in instances where the October 2008 field assessment differed from the assessment described in the OU1 FWIA. WSP was unable to directly confirm covertype descriptions beyond the boundaries of those properties owned by Revere due to access issues. However, covertype descriptions were inferred beyond the boundaries of Revere-owned property based on observations made in the OU1 FWIA and during the October 2008 field assessment. Each covertype was described in detail in the Step 1 FWIA for OU3 (as previously defined).

The presence of fish and wildlife in the study area was assessed through coordination/inquiry with regulatory agencies, a literature review, and the study area reconnaissance. Wildlife was identified based on actual sightings; audible indicators such as bird songs; or other indicators (spore) such as tracks, burrows, or scat. Several benthic macroinvertebrate, fish, amphibian, reptile, avian, and mammal species were observed frequenting the site and/or the study area at the time of the site reconnaissance. Potential wildlife species that would typically utilize some or all of the habitat components were also identified. Evidence of physical or chemical stressors to flora or fauna inhabiting the site was observed. Finally, other environmental features and fish and wildlife resources, such as significant habitats and rare natural communities, rare (threatened or endangered) plant and animal species, regulated state and federal wetlands, and special surface waters that are present within 0.5 miles of the site were identified.

Based on the information collected in Step 1, both contaminant-specific and site-specific criteria applicable to the remediation of fish and wildlife resources were identified. The Step 1 FWIA was provided to the NYSDEC in February 2009, and the NYSDEC determined a Step 2 FWIA was necessary to determine the extent and magnitude of the potential for toxic effects from the exposure to lead for fish and wildlife receptors. The Step 2A (Pathway Analysis), Step 2B (Criteria-Specific Analysis), and Step 2C (Toxic Effect Analysis) of the FWIA were completed and presented to the NYSDEC in the FWIA in October 2010 (WSP 2010).

5.2 PROPOSED OU3 FWIA

Step 1 (Site Description) of the 1994 NYSDEC guidance document is the initial step in completing the FWIA. The purpose of Step 1 of an FWIA is to characterize the physical and biological characteristics of a site. Because much of OU3 as currently defined is similar to OU1 (i.e., OU3 as previously defined), elements of the FWIA previously completed will be incorporated into the FWIA for OU3. WSP will incorporate the new study area limits into a separate FWIA for OU3, maintaining some of the content of Steps 1 (Study Area Characterization and Description of Fish and Wildlife Resources), 2A (Pathway Analysis), and Step 2B (Criteria-Specific Analysis) from the OU1 FWIA. Based on the pathway analysis and criteria-specific analysis, WSP will evaluate whether the existing toxic effect analysis (Step 2C) conducted upstream in OU1 is sufficient for the revised OU3 study area.

6 SUMMARY AND CONCLUSIONS

The primary transport mechanism for arsenic and lead found in floodplain soils and sediments within the OU3 study area appears to be sediment transport via surface water flow within Phillipsburg Creek. The arsenic and lead concentrations detected in soil and sediments exhibit a general pattern of decreasing concentration with increased distance from the facility.

Arsenic and lead were detected in floodplain soil samples at concentrations exceeding the OU1 RGs for Ecological Areas at 12 locations, with the highest concentrations detected north of I-84. Sediment samples from Phillipsburg Creek upstream of the 758 E. Main Street property contained concentrations above the Class B SGVs of 33 and 130 mg/kg, respectively. The highest lead concentrations were detected in upstream sediments on the Galleria at Crystal Run Mall property in samples collected in 2009 before the Phase IIB RD/RA was completed. Subsequent samples collected in 2016 at the same location were an order of magnitude less, demonstrating the positive effects of the OU1 remediation. Sediment containing lead above the Class B SGVs are not present on the 758 E. Main Street property just north of the confluence with the Wallkill River. Finally, impacts to the Wallkill River from site operations appear to be limited as arsenic was detected in soil above the OU1 Ecological Area RG at two locations but lead was not detected above the OU1 Ecological Area RG at any location in soil, and arsenic and lead were not detected above the Class B SGVs at any location and were generally detected at concentrations in the lower end of the Class B SGV range.

Based on the RI results, WSP draws the following conclusions:

- Limited impacts to offsite soils and sediments in OU3 have occurred as the result of historical facility operations. Although other metals have been detected at concentrations above Ecological Area RGs and the Class B SGVs, lead is the primary constituent of concern and the clear indicator parameter of facility-related impacts.
- Impacts to floodplain soil are generally limited to north of I-84, while impacts to sediments are limited to upstream of the 758 E. Main Street property.
- VOCs, SVOCs, pesticides, and PCBs are not constituents of concern in OU3.
- The OU3 study area is defined by the section of Phillipsburg Creek west of Ballard Road and upstream of the confluence with the Wallkill River.
- The 2015/2016 data collected are sufficient to demonstrate completion the OU3 RI, with the exception of the completion of the FWIA scope of work referenced in Section 5.2. The completion of the FWIA will progress concurrently with the development of the OU3 Feasibility Study.

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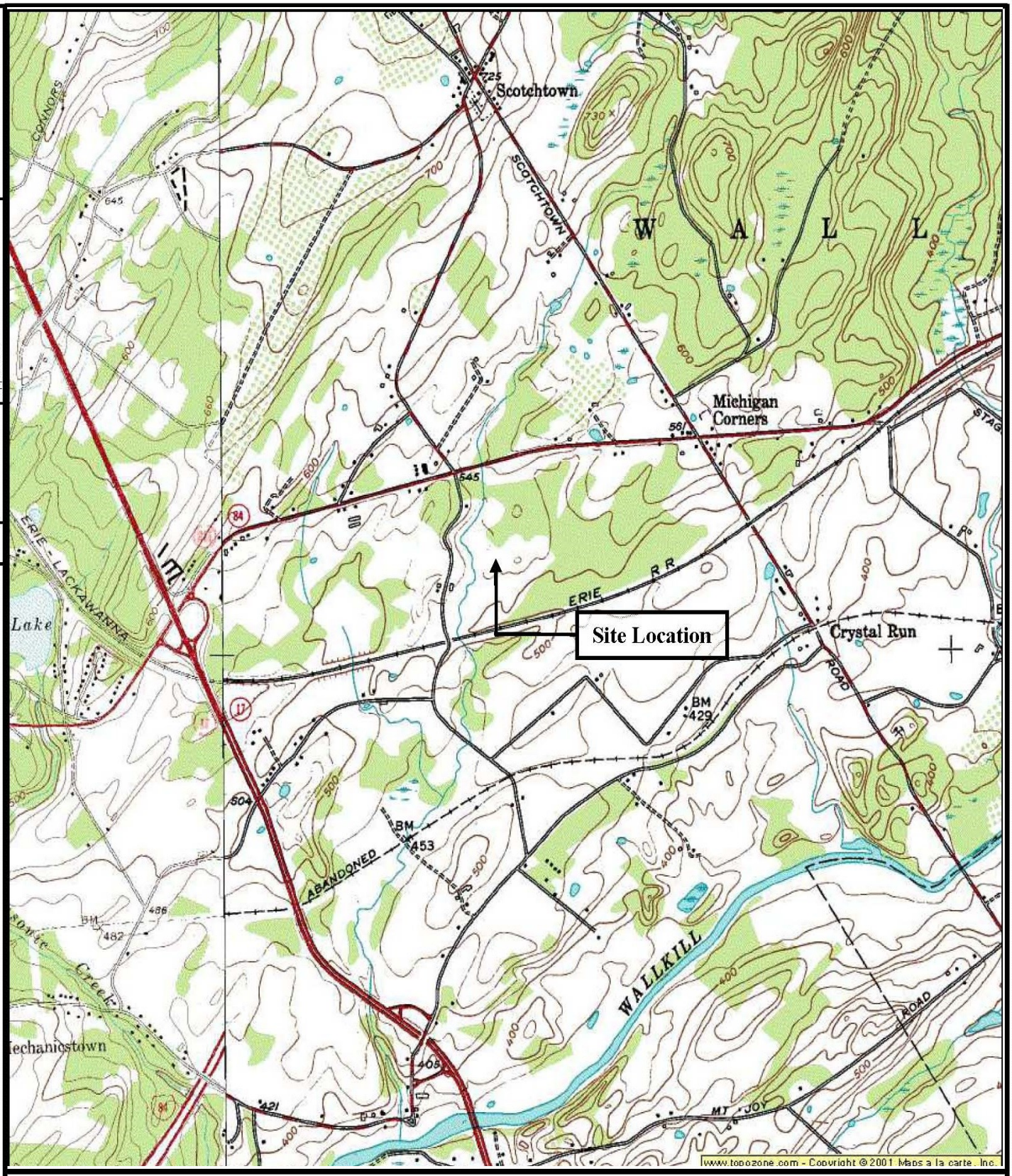
FIGURES



DWG Name:

Checked: Approved:

Drawn By: A

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GOSHEN, NEW YORK
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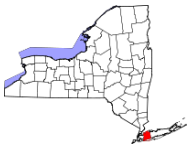
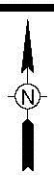




0 1000 2000 4000
SCALE, FEET

WSP USA
75 Arlington Street, 9th Floor
Boston, Massachusetts 02116
(617) 426-7330

FIGURE 1

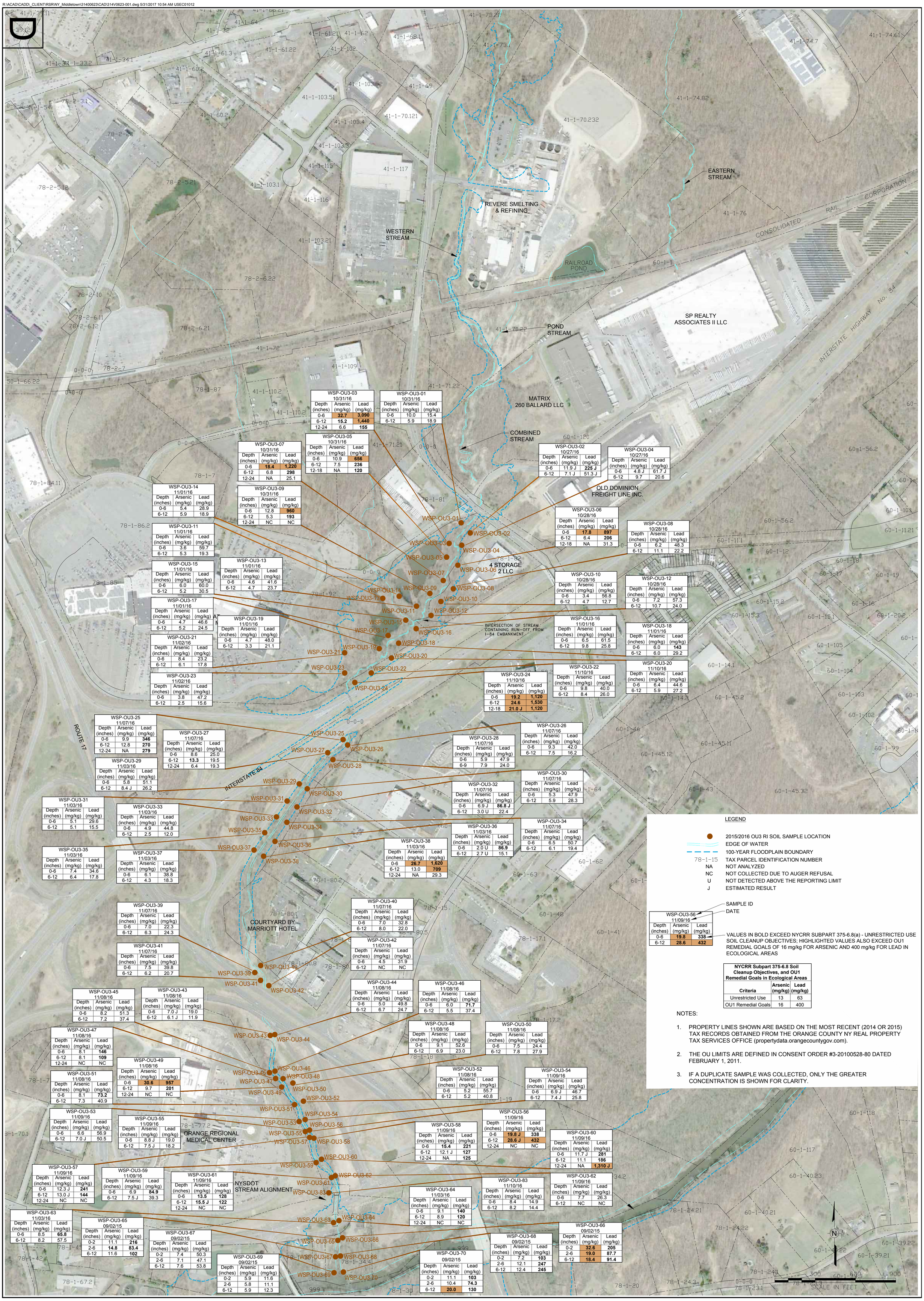
SITE LOCATION MAP

REVERE SMELTING & REFINING FACILITY
MIDDLETOWN, NEW YORK

PREPARED FOR

REVERE SMELTING & REFINING CORPORATION
DALLAS, TEXAS

R:\ACAD\CADD_CLIENT\RSR\NY_Middletown\31400623\CAD\314V0623-001.dwg 5/31/2017 10:54 AM USEC01012



WSP-OU3-01
10/31/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	10.0	15.4
6-12	5.9	18.9

WSP-OU3-02
10/27/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	11.9 J	**225 J**
6-12	7.1 J	51.3 J

WSP-OU3-03
10/31/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	**32.7**	**3,090**
6-12	**15.2**	**1,440**
12-24	6.6	**155**

WSP-OU3-04
10/27/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	4.8 J	61.7 J
6-12	9.7	20.6

WSP-OU3-05
10/31/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	10.9	**656**
6-12	7.5	**236**
12-18	NA	**120**

WSP-OU3-06
10/28/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	**17.8**	**897**
6-12	6.4	**206**
12-18	NA	31.3

WSP-OU3-07
10/31/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	**18.4**	**1,220**
6-12	6.8	**298**
12-24	NA	25.1

WSP-OU3-08
10/28/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	6.2	48.3
6-12	11.1	22.2

WSP-OU3-09
10/31/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	12.8	**960**
6-12	5.3	**193**
12-24	NC	NC

WSP-OU3-10
10/28/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	3.4	56.8
6-12	4.7	12.7

WSP-OU3-11
11/01/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	3.6	59.7
6-12	5.3	19.3

WSP-OU3-12
10/28/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	7.2	57.3
6-12	10.7	24.0

WSP-OU3-13
11/01/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	4.6	41.6
6-12	4.7	23.7

WSP-OU3-14
11/01/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	5.4	28.9
6-12	5.9	18.9

WSP-OU3-15
11/01/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	6.0	60.0
6-12	5.2	30.5

WSP-OU3-16
11/01/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	6.5	61.5
6-12	9.8	25.8

WSP-OU3-17
11/01/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	4.7	46.6
6-12	5.2	24.5

WSP-OU3-18
11/01/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	6.0	**143**
6-12	6.0	29.2

WSP-OU3-19
11/01/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	4.7	48.0
6-12	3.3	21.1

WSP-OU3-20
11/10/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	6.4	44.6
6-12	5.9	27.2

WSP-OU3-21
11/02/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	8.4	23.2
6-12	6.1	17.8

WSP-OU3-22
11/10/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	9.8	40.0
6-12	8.4	26.0

WSP-OU3-23
11/02/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	3.8	47.2
6-12	2.5	15.6

WSP-OU3-24
11/10/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	**19.2**	**1,120**
6-12	**24.6**	**1,530**
12-18	**21.0 J**	**1,120**

WSP-OU3-25
11/07/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	9.9	**346**
6-12	12.8	**270**
12-24	NA	**279**

WSP-OU3-26
11/07/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	9.3	42.0
6-12	7.5	16.2

WSP-OU3-27
11/07/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	8.6	25.0
6-12	**13.3**	19.5
12-24	6.4	19.3

WSP-OU3-28
11/07/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	5.9	47.9
6-9	7.9	24.0

WSP-OU3-29
11/03/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	5.8	51.1
6-12	8.4 J	26.2

WSP-OU3-30
11/07/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	5.3	47.9
6-12	5.9	28.3

WSP-OU3-31
11/03/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	5.1	29.6
6-12	5.1	15.5

WSP-OU3-32
11/07/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	6.9 J	**86.8 J**
6-12	3.0 U	22.4

WSP-OU3-33
11/03/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	4.9	44.8
6-12	2.5	12.0

WSP-OU3-34
11/07/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	6.5	50.7
6-12	6.1	19.4

WSP-OU3-35
11/03/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	7.4	34.6
6-12	6.4	17.8

WSP-OU3-36
11/03/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	2.0 U	**86.9**
6-12	2.7 U	15.1

WSP-OU3-37
11/03/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	6.1	38.8
6-12	4.3	18.3

WSP-OU3-38
11/03/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	**26.7**	**1,620**
6-12	13.0	**709**
12-24	NA	29.3

WSP-OU3-39
11/07/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	7.0	22.3
6-12	6.3	24.3

WSP-OU3-40
11/07/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	7.0	32.8
6-12	8.0	22.0

WSP-OU3-41
11/07/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	7.5	39.8
6-12	6.2	20.7

WSP-OU3-42
11/07/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	4.5	31.9
6-12	NC	NC

WSP-OU3-43
11/08/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	7.0 J	19.0
6-12	6.1 J	11.9

WSP-OU3-44
11/08/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	5.0	49.8
6-12	6.7	24.7

WSP-OU3-45
11/08/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	8.2	51.3
6-12	7.2	37.4

WSP-OU3-46
11/08/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	6.0	**71.7**
6-12	5.5	37.4

WSP-OU3-47
11/08/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	8.1	**146**
6-12	8.1	**109**
12-24	NC	NC

WSP-OU3-48
11/08/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	9.1	52.6
6-12	6.9	23.0

WSP-OU3-49
11/08/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	**30.6**	**957**
6-12	9.7	**201**
12-24	NC	NC

WSP-OU3-50
11/08/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	7.5	24.4
6-12	7.8	27.9

WSP-OU3-51
11/08/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	8.1	**73.2**
6-12	7.3	40.9

WSP-OU3-52
11/08/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	5.2	55.7
6-12	5.2	40.8

WSP-OU3-53
11/09/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	6.6	56.9
6-12	7.0 J	50.5

WSP-OU3-54
11/09/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	6.9 J	46.7
6-12	7.4 J	25.8

WSP-OU3-55
11/09/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	8.8 J	19.0
6-12	7.5 J	18.2

WSP-OU3-56
11/09/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	**19.8 J**	**338**
6-12	**28.6 J**	**432**
12-24	NC	NC

WSP-OU3-57
11/09/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	12.3 J	**241**
6-12	13.0 J	**144**
12-24	NC	NC

WSP-OU3-58
11/09/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	**15.4**	**221**
6-12	12.1 J	**127**
12-24	NA	**125**

WSP-OU3-59
11/09/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	6.9	**84.9**
6-12	7.5 J	39.3

WSP-OU3-60
11/09/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	11.7 J	**281**
6-12	11.1	**186**
12-24	NA	**1,310 J**

WSP-OU3-61
11/09/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	**13.5**	**128**
6-12	**15.5 J**	**122**
12-24	NC	NC

WSP-OU3-62
11/09/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	7.7	26.3
6-12	NC	NC

WSP-OU3-63
11/03/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	8.5	**65.8**
6-12	8.2	57.5

WSP-OU3-64
11/03/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	9.1	**140**
6-12	8.9	**120**
12-24	NC	NC

WSP-OU3-65
09/02/15

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-2	11.1	**216**
2-6	**14.8**	**83.4**
6-12	11.6	**102**

WSP-OU3-66
09/02/15

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-2	**32.6**	**205**
2-6	**19.0**	**87.7**
6-12	**18.4**	**91.4**

WSP-OU3-67
09/02/15

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-2	7.4	50.3
2-6	7.1	47.1
6-12	7.6	53.8

WSP-OU3-68
09/02/15

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-2	7.2	**103**
2-6	12.1	**247**
6-12	12.4	**245**

WSP-OU3-69
09/02/15

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-2	5.9	11.6
2-6	5.8	11.1
6-12	5.9	12.3

WSP-OU3-70
09/02/15

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-2	11.1	**103**
2-6	10.4	**74.3**
6-12	**20.0**	**130**

WSP-OU3-83
11/10/16

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	8.4	14.9
6-12	8.2	14.4

LEGEND

- 2015/2016 OU3 RI SOIL SAMPLE LOCATION
- EDGE OF WATER
- 100-YEAR FLOODPLAIN BOUNDARY
- 78-1-15 TAX PARCEL IDENTIFICATION NUMBER
- NA NOT ANALYZED
- NC NOT COLLECTED DUE TO AUGER REFUSAL
- U NOT DETECTED ABOVE THE REPORTING LIMIT
- J ESTIMATED RESULT

WSP-OU3-56 (SAMPLE ID)
11/09/16 (DATE)

Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	**19.8**	**338**
6-12	**28.6**	**432**

VALUES IN BOLD EXCEED NYCRR SUBPART 375-6.8(a) - UNRESTRICTED USE SOIL CLEANUP OBJECTIVES; HIGHLIGHTED VALUES ALSO EXCEED OU1 REMEDIAL GOALS OF 16 mg/kg FOR ARSENIC AND 400 mg/kg FOR LEAD IN ECOLOGICAL AREAS

NYCRR Subpart 375-6.8 Soil Cleanup Objectives, and OU1 Remedial Goals in Ecological Areas

Criteria	Arsenic (mg/kg)	Lead (mg/kg)
Unrestricted Use	13	63
OU1 Remedial Goals	16	400

NOTES:

1. PROPERTY LINES SHOWN ARE BASED ON THE MOST RECENT (2014 OR 2015) TAX RECORDS OBTAINED FROM THE ORANGE COUNTY NY REAL PROPERTY TAX SERVICES OFFICE (propertydata.orangecountygov.com).
2. THE OU LIMITS ARE DEFINED IN CONSENT ORDER #3-20100528-80 DATED FEBRUARY 1, 2011.
3. IF A DUPLICATE SAMPLE WAS COLLECTED, ONLY THE GREATER CONCENTRATION IS SHOWN FOR CLARITY.

Drawing Number 314V0623-001

FIGURE 2

WSP USA Inc.
75 ARLINGTON STREET, 4th FLOOR
BOSTON, MA 02116
TEL: +1 617.426.7330

OU3 REMEDIAL INVESTIGATION
PHILLIPSBURG CREEK FLOODPLAIN SOIL RESULTS

REVERE SMELTING & REFINING CORPORATION
MIDDLETOWN, NEW YORK

PREPARED FOR

RSR CORPORATION
DALLAS, TEXAS

DRAWN BY	EGC
CHECKED	MDP 5/23/2017
APPROVED	CDA

SEAL

DATE

REVISIONS

REV	DESCRIPTION		
1	Revised:	Chkd:	Appr.:
2	Revised:	Chkd:	Appr.:
3	Revised:	Chkd:	Appr.:

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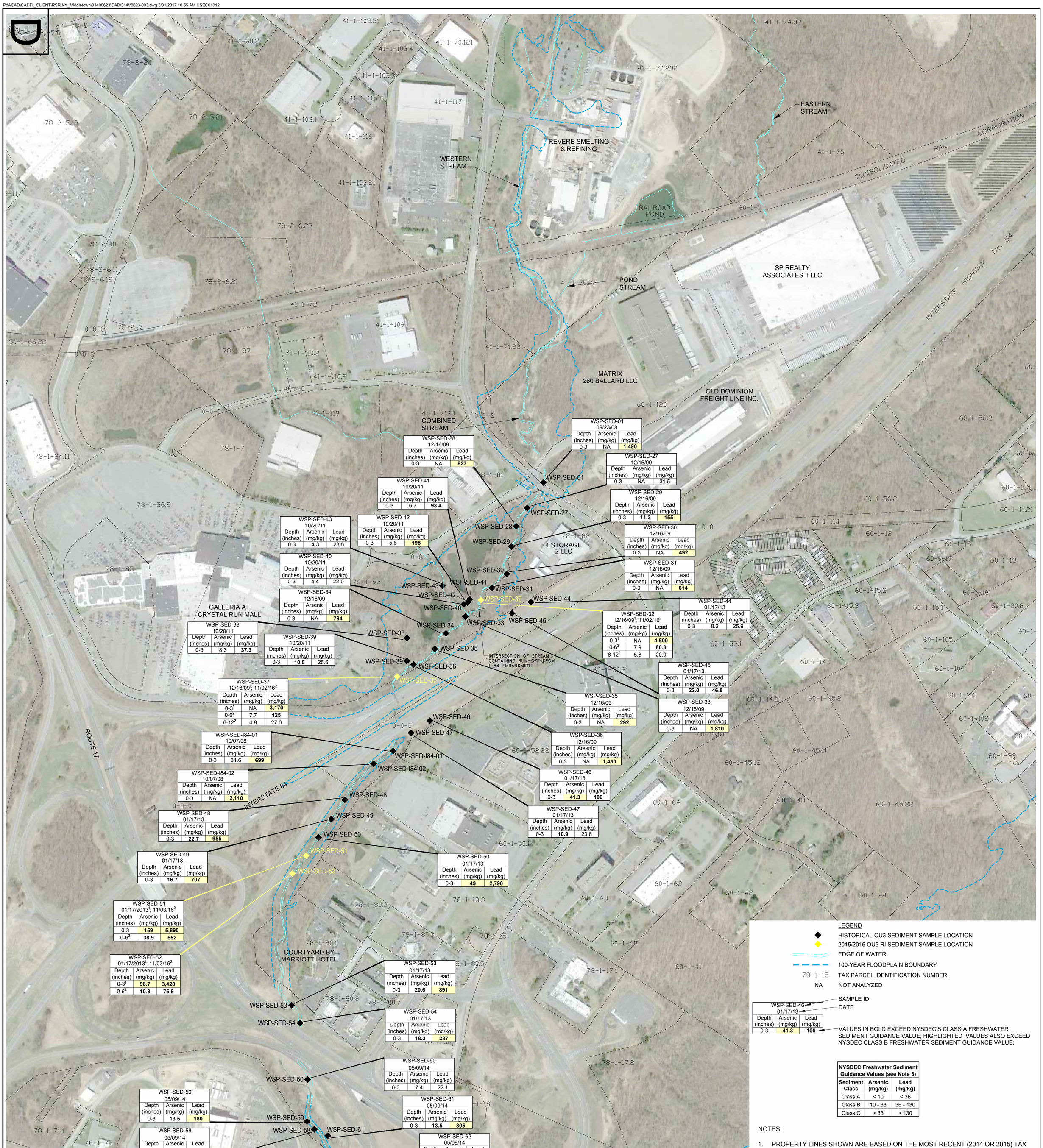


WSP-SED-01 09/23/08		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	NA	**1,490**

WSP-SED-27 12/16/09		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	NA	31.5

WSP-SED-28 12/16/09		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	NA	**827**

WSP-SED-29 12/16/09		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	**11.3**	**155**

WSP-SED-30 12/16/09		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	NA	**492**

WSP-SED-31 12/16/09		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	NA	**614**

WSP-SED-32 12/16/09[1]; 11/02/16[2]		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3[1]	NA	**4,500**
0-6[2]	7.9	**80.3**
6-12[2]	5.8	20.9

WSP-SED-33 12/16/09		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	NA	**1,810**

WSP-SED-34 12/16/09		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	NA	**784**

WSP-SED-35 12/16/09		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	NA	**292**

WSP-SED-36 12/16/09		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	NA	**1,450**

WSP-SED-37 12/16/09[1]; 11/02/16[2]		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3[1]	NA	**3,170**
0-6[2]	7.7	**125**
6-12[2]	4.9	27.0

WSP-SED-38 10/20/11		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	8.3	**37.3**

WSP-SED-39 10/20/11		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	**10.5**	25.6

WSP-SED-40 10/20/11		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	4.4	22.0

WSP-SED-41 10/20/11		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	6.7	**93.4**

WSP-SED-42 10/20/11		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	5.8	**195**

WSP-SED-43 10/20/11		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	4.3	23.5

WSP-SED-44 01/17/13		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	8.2	25.9

WSP-SED-45 01/17/13		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	**22.0**	**46.8**

WSP-SED-46 01/17/13		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	**41.3**	**106**

WSP-SED-47 01/17/13		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	**10.9**	23.8

WSP-SED-48 01/17/13		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	**22.7**	**955**

WSP-SED-49 01/17/13		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	**16.7**	**707**

WSP-SED-50 01/17/13		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	**49**	**2,790**

WSP-SED-51 01/17/2013[1]; 11/03/16[2]		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	**159**	**5,890**
0-6[2]	**38.9**	**552**

WSP-SED-52 01/17/2013[1]; 11/03/16[2]		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3[1]	**98.7**	**3,420**
0-6[2]	**10.3**	**75.9**

WSP-SED-53 01/17/13		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	**20.6**	**891**

WSP-SED-54 01/17/13		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	**18.3**	**287**

WSP-SED-55 05/09/14		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	5.6	17.0

WSP-SED-56 05/09/14		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	**12.5**	**270**

WSP-SED-57 05/09/14[1]; 11/10/16[2]		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3[1]	**14.6**	**317**
0-6[2]	**13.7**	**148**
6-12[2]	**22.5**	**209**

WSP-SED-58 05/09/14		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	**12.6**	**365**

WSP-SED-59 05/09/14		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	**13.5**	**180**

WSP-SED-60 05/09/14		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	7.4	22.1

WSP-SED-61 05/09/14		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	**13.5**	**305**

WSP-SED-62 05/09/14		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	9.4	**98.4**

WSP-SED-63 05/09/14		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	**10.6**	**92.8**

WSP-SED-64 05/09/14		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	8.1	**124**

WSP-SED-65 10/25/16		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	9.0	**92.9**

WSP-SED-66 09/02/15		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	**10.2**	**98.2**

WSP-SED-67 09/02/15		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	**13.0**	**108**

WSP-SED-68 09/02/15		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	10.0	**57.7**

WSP-SED-I84-01 10/07/08		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	31.6	**699**

WSP-SED-I84-02 10/07/08		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	NA	**2,110**

LEGEND

- HISTORICAL OU3 SEDIMENT SAMPLE LOCATION
- 2015/2016 OU3 RI SEDIMENT SAMPLE LOCATION
- EDGE OF WATER
- 100-YEAR FLOODPLAIN BOUNDARY
- 78-1-15 TAX PARCEL IDENTIFICATION NUMBER
- NA NOT ANALYZED

WSP-SED-46 01/17/13		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-3	**41.3**	**106**

SAMPLE ID
DATE
VALUES IN BOLD EXCEED NYSDEC'S CLASS A FRESHWATER SEDIMENT GUIDANCE VALUE; HIGHLIGHTED VALUES ALSO EXCEED NYSDEC CLASS B FRESHWATER SEDIMENT GUIDANCE VALUE:

NYSDEC Freshwater Sediment Guidance Values (see Note 3)		
Sediment Class	**Arsenic (mg/kg)**	**Lead (mg/kg)**
Class A	< 10	< 36
Class B	10 - 33	36 - 130
Class C	> 33	> 130

NOTES:

1. PROPERTY LINES SHOWN ARE BASED ON THE MOST RECENT (2014 OR 2015) TAX RECORDS OBTAINED FROM THE ORANGE COUNTY NY REAL PROPERTY TAX SERVICES OFFICE (propertydata.orangecountygov.com).
2. THE OU LIMITS ARE DEFINED IN CONSENT ORDER #3-20100528-80 DATED FEBRUARY 1, 2011.
3. FRESHWATER SEDIMENT GUIDANCE VALUES LISTED IN TABLE 5 OF THE NYSDEC'S SCREENING AND ASSESSMENT OF CONTAMINATED SEDIMENT REPORT (JUNE 2014).
4. IF A DUPLICATE SAMPLE WAS COLLECTED, ONLY THE GREATER CONCENTRATION IS SHOWN FOR CLARITY.

Drawing Number 314V0623-003

FIGURE 3

WSP USA Inc.
75 ARLINGTON STREET, 4th FLOOR
BOSTON, MA 02116
TEL: +1 617.426.7330

OU3 REMEDIAL INVESTIGATION PHILLIPSBURG CREEK SEDIMENT SAMPLE RESULTS

REVERE SMELTING & REFINING CORPORATION
MIDDLETOWN, NEW YORK

PREPARED FOR

RSR CORPORATION
DALLAS, TEXAS

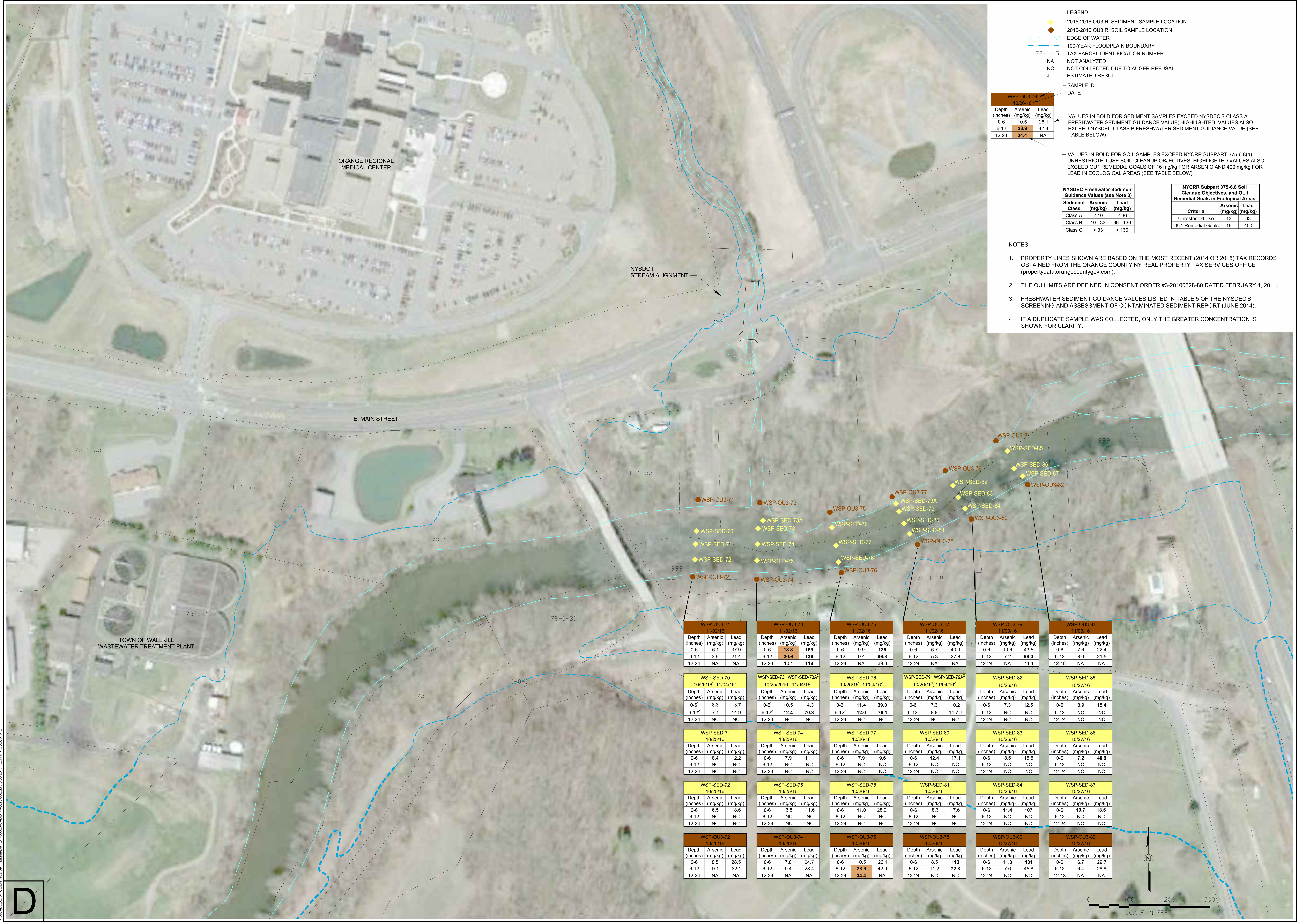
DRAWN BY	EGC
CHECKED	MDP 5/23/2017
APPROVED	CJA

SEAL

DATE

REVISIONS

REV	DESCRIPTION		
1	Revised:	Chkd:	Appr.:
2	Revised:	Chkd:	Appr.:
3	Revised:	Chkd:	Appr.:



Sample ID	Date	Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
WSP-OU3-71	11/02/16	0-6	6.1	37.9
		6-12	3.9	21.4
		12-24	NA	NA
WSP-OU3-73	11/02/16	0-6	**18.8**	**169**
		6-12	**20.6**	**136**
		12-24	10.1	**118**
WSP-OU3-75	11/02/16	0-6	9.9	**125**
		6-12	9.4	**96.3**
		12-24	NA	39.3
WSP-OU3-77	11/02/16	0-6	6.7	40.9
		6-12	5.3	27.8
		12-24	NA	NA
WSP-OU3-79	11/03/16	0-6	10.6	43.5
		6-12	7.2	**98.3**
		12-24	NA	41.1
WSP-OU3-81	11/03/16	0-6	7.6	22.4
		6-12	8.6	21.5
		12-18	NA	NA
WSP-SED-70	10/25/16[1]; 11/04/16[2]	0-6[1]	8.3	13.7
		6-12[2]	7.1	14.9
		12-24	NC	NC
WSP-SED-73[1], WSP-SED-73A[2]	10/25/2016[1]; 11/04/16[2]	0-6[1]	**10.5**	14.3
		6-12[2]	**12.4**	**70.3**
		12-24	NC	NC
WSP-SED-76	10/26/16[1]; 11/04/16[2]	0-6[1]	**11.4**	**39.0**
		6-12[2]	**12.0**	**76.1**
		12-24	NC	NC
WSP-SED-79[1], WSP-SED-79A[2]	10/26/16[1]; 11/04/16[2]	0-6[1]	7.3	10.2
		6-12[2]	8.8	14.7 J
		12-24	NC	NC
WSP-SED-82	10/26/16	0-6	7.3	12.5
		6-12	NC	NC
		12-24	NC	NC
WSP-SED-85	10/27/16	0-6	8.9	18.4
		6-12	NC	NC
		12-24	NC	NC
WSP-SED-71	10/25/16	0-6	8.4	12.2
		6-12	NC	NC
		12-24	NC	NC
WSP-SED-74	10/25/16	0-6	7.9	11.1
		6-12	NC	NC
		12-24	NC	NC
WSP-SED-77	10/26/16	0-6	7.9	9.6
		6-12	NC	NC
		12-24	NC	NC
WSP-SED-80	10/26/16	0-6	**12.4**	17.1
		6-12	NC	NC
		12-24	NC	NC
WSP-SED-83	10/26/16	0-6	8.6	15.5
		6-12	NC	NC
		12-24	NC	NC
WSP-SED-86	10/27/16	0-6	7.2	**40.9**
		6-12	NC	NC
		12-24	NC	NC
WSP-SED-72	10/25/16	0-6	6.5	18.6
		6-12	NC	NC
		12-24	NC	NC
WSP-SED-75	10/25/16	0-6	6.8	11.6
		6-12	NC	NC
		12-24	NC	NC
WSP-SED-78	10/26/16	0-6	**11.0**	28.2
		6-12	NC	NC
		12-24	NC	NC
WSP-SED-81	10/26/16	0-6	8.3	17.6
		6-12	NC	NC
		12-24	NC	NC
WSP-SED-84	10/26/16	0-6	**11.4**	**107**
		6-12	NC	NC
		12-24	NC	NC
WSP-SED-87	10/27/16	0-6	**10.7**	18.6
		6-12	NC	NC
		12-24	NC	NC
WSP-OU3-72	10/26/16	0-6	8.5	28.5
		6-12	9.1	32.1
		12-24	NA	NA
WSP-OU3-74	10/26/16	0-6	7.8	24.7
		6-12	9.4	28.4
		12-24	NA	NA
WSP-OU3-76	10/26/16	0-6	10.5	26.1
		6-12	**28.9**	42.9
		12-24	**34.4**	NA
WSP-OU3-78	10/26/16	0-6	8.5	**113**
		6-12	11.2	**72.8**
		12-24	NC	NC
WSP-OU3-80	10/27/16	0-6	11.3	**101**
		6-12	7.6	45.8
		12-24	NC	NC
WSP-OU3-82	10/27/16	0-6	6.7	29.7
		6-12	6.4	28.8
		12-18	NA	NA

LEGEND

- 2015-2016 OU3 RI SEDIMENT SAMPLE LOCATION
- 2015-2016 OU3 RI SOIL SAMPLE LOCATION
- EDGE OF WATER
- 100-YEAR FLOODPLAIN BOUNDARY
- 78-1-15 TAX PARCEL IDENTIFICATION NUMBER
- NA NOT ANALYZED
- NC NOT COLLECTED DUE TO AUGER REFUSAL
- J ESTIMATED RESULT

WSP-OU3-76 (SAMPLE ID) 10/26/16 (DATE)		
Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
0-6	10.5	26.1
6-12	**28.9**	42.9
12-24	**34.4**	NA

VALUES IN BOLD FOR SEDIMENT SAMPLES EXCEED NYSDEC'S CLASS A FRESHWATER SEDIMENT GUIDANCE VALUE; HIGHLIGHTED VALUES ALSO EXCEED NYSDEC CLASS B FRESHWATER SEDIMENT GUIDANCE VALUE (SEE TABLE BELOW)

VALUES IN BOLD FOR SOIL SAMPLES EXCEED NYCRR SUBPART 375-6.8(a) - UNRESTRICTED USE SOIL CLEANUP OBJECTIVES; HIGHLIGHTED VALUES ALSO EXCEED OU1 REMEDIAL GOALS OF 16 mg/kg FOR ARSENIC AND 400 mg/kg FOR LEAD IN ECOLOGICAL AREAS (SEE TABLE BELOW)

NYSDEC Freshwater Sediment Guidance Values (see Note 3)

Sediment Class	Arsenic (mg/kg)	Lead (mg/kg)
Class A	< 10	< 36
Class B	10 - 33	36 - 130
Class C	> 33	> 130

NYCRR Subpart 375-6.8 Soil Cleanup Objectives, and OU1 Remedial Goals in Ecological Areas

Criteria	Arsenic (mg/kg)	Lead (mg/kg)
Unrestricted Use	13	63
OU1 Remedial Goals	16	400

NOTES:

1. PROPERTY LINES SHOWN ARE BASED ON THE MOST RECENT (2014 OR 2015) TAX RECORDS OBTAINED FROM THE ORANGE COUNTY NY REAL PROPERTY TAX SERVICES OFFICE (propertydata.orangecountygov.com).
2. THE OU LIMITS ARE DEFINED IN CONSENT ORDER #3-20100528-80 DATED FEBRUARY 1, 2011.
3. FRESHWATER SEDIMENT GUIDANCE VALUES LISTED IN TABLE 5 OF THE NYSDEC'S SCREENING AND ASSESSMENT OF CONTAMINATED SEDIMENT REPORT (JUNE 2014).
4. IF A DUPLICATE SAMPLE WAS COLLECTED, ONLY THE GREATER CONCENTRATION IS SHOWN FOR CLARITY.

REVISIONS

REV	DESCRIPTION
1	Revised: Chkd: Appr.:
2	Revised: Chkd: Appr.:
3	Revised: Chkd: Appr.:

SEAL

DATE

DRAWN BY EGC
CHECKED MDP 5/23/2017
APPROVED CJA

OU3 REMEDIAL INVESTIGATION WALLKILL RIVER SOIL AND SEDIMENT SAMPLE RESULTS

REVERE SMELTING & REFINING CORPORATION
MIDDLETOWN, NEW YORK

PREPARED FOR
RSR CORPORATION
DALLAS, TEXAS

WSP USA Inc.
75 ARLINGTON STREET, 4th FLOOR
BOSTON, MA 02116
TEL: +1 617.426.7330

FIGURE 4

Drawing Number
314V0623-002

D

TABLES

Table 1

OU3 Property Summary
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Tax Parcel	Property Name	Property Address	Property Owner	Zoning Code	Current Property Use
Tax Parcel 0-0-0	NYSDOT ROW	New York State Right-of-Way	NYSDOT	NA	NYSDOT Right-of-Way
Tax Parcel 78-1-92	Galleria at Crystal Run Mall	1 N. Galleria Drive	Crystal Run Newco LLC	NA	451-Regular Shopping Center
Tax Parcel 78-1-82	4 Storage 2 LLC	295 Ballard Road	4 Storage 2 LLC	TC	449-Other Storage
Tax Parcel 78-1-34.4	Private Residence	758 E. Main Street	Edwin D. Silvers Inc.	O/R	483-Converted Residence
Tax Parcel 78-1-30	Wallkill Cemetary	155/160 Midway Road	Wallkill Cemetary Association	O/R	695-Cemetary
Tax Parcel 999	Wallkill River	Wallkill River	NA	NA	NA

Table 2

Sample Summary
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID	Sample Type	Sample Depth (inches)	Sample Date	Investigation Phase	Easting (b)	Northing (b)	Sample Analysis							Data Package
							Arsenic	Lead	TAL Metals	TCL VOCs	TCL SVOCs	TCL PCBs	TCL Pesticides	
Tax Parcel 0-0-0	**NYSDOT Right-of-Way**													
WSP-SED-01	Sediment	0-3	09/23/08	2008 OU3 RI	530380.4070	954956.4320		X						J6667
WSP-SED-I84-01	Sediment	0-3	10/07/08	2008 OU3 RI	529390.0531	953185.8087	X	X						J6872
WSP-SED-I84-02	Sediment	0-3	10/07/08	2008 OU3 RI	529261.1150	953100.8407		X						
WSP-SED-44	Sediment	0-3	01/17/13	2013 OU3 RI	530298.2243	954167.4480	X	X						JB26748
WSP-SED-45	Sediment	0-3	01/17/13	2013 OU3 RI	530173.9679	954092.9426	X	X						
WSP-SED-46	Sediment	0-3	01/17/13	2013 OU3 RI	529632.6089	953386.1663	X	X						
WSP-SED-47	Sediment	0-3	01/17/13	2013 OU3 RI	529508.7915	953304.8882	X	X						
WSP-SED-48	Sediment	0-3	01/17/13	2013 OU3 RI	529071.6576	952863.5299	X	X						
WSP-SED-49	Sediment	0-3	01/17/13	2013 OU3 RI	528983.5623	952736.7001	X	X						
WSP-SED-50	Sediment	0-3	01/17/13	2013 OU3 RI	528897.7641	952616.3319	X	X						
WSP-SED-51	Sediment	0-3	01/17/13	2013 OU3 RI	528813.6114	952491.1563	X	X						
		0-6	11/03/16	2016 OU3 RI	528816.0740	952495.5040	X	X						JC31102
		0-6 (c)					X	X						
WSP-SED-52	Sediment	0-3	01/17/13	2013 OU3 RI	528728.5788	952371.1564	X	X						JB26748
		0-6	11/03/16	2016 OU3 RI	528725.8590	952377.2270	X	X	X					JC31102
WSP-SED-53	Sediment	0-3	01/17/13	2013 OU3 RI	528720.2615	951509.9249	X	X	X					JB26748
		0-3 (d)					X	X	X					
WSP-SED-54	Sediment	0-3	01/17/13	2013 OU3 RI	528776.9977	951391.9253	X	X						
WSP-SED-55	Sediment	0-3	05/09/14	2014 OU3 RI	529270.4140	949956.0020	X	X						JB66752
WSP-SED-56	Sediment	0-3	05/09/14	2014 OU3 RI	529106.1730	950259.9300	X	X	X					
		0-3 (e)					X	X	X					
WSP-SED-57	Sediment	0-3	05/09/14	2014 OU3 RI	529050.4240	950381.4980	X	X						
		0-6	11/10/16	2016 OU3 RI	529046.4900	950389.9460	X	X						JC31580
		0-6 (f)					X	X						
		6-12					X	X						
WSP-SED-58	Sediment	0-3	05/09/14	2014 OU3 RI	528870.8270	950691.6160	X	X						JB66752
WSP-SED-59	Sediment	0-3	05/09/14	2014 OU3 RI	528822.2870	950742.5200	X	X						
WSP-SED-60	Sediment	0-3	05/09/14	2014 OU3 RI	528826.5270	951019.1260	X	X						
WSP-SED-61	Sediment	0-3	05/09/14	2014 OU3 RI	528958.9180	950648.3970	X	X						
WSP-SED-62	Sediment	0-3	05/09/14	2014 OU3 RI	529026.0100	950510.8460	X	X						

Table 2

Sample Summary
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID	Sample Type	Sample Depth (inches)	Sample Date	Investigation Phase	Easting (b)	Northing (b)	Sample Analysis							Data Package
							Arsenic	Lead	TAL Metals	TCL VOCs	TCL SVOCs	TCL PCBs	TCL Pesticides	
Tax Parcel 0-0-0	**NYSDOT Right-of-Way (Continued)**													
WSP-SED-63	Sediment	0-3	05/09/14	2014 OU3 RI	529110.0810	950313.1100	X	X						JB66752
WSP-SED-64	Sediment	0-3	05/09/14	2014 OU3 RI	529202.6750	950088.5900	X	X						
WSP-SED-65	Sediment	0-3	11/03/16	2016 OU3 RI	529299.9770	949688.6810	X	X						JC31102
WSP-OU3-20	Soil	0-6	11/10/16	2016 OU3 RI	529719.9490	953825.2320	X	X						JC31580
		6-12					X	X						
WSP-OU3-22	Soil	0-6	11/10/16	2016 OU3 RI	529570.0140	953713.8700	X	X						
		6-12					X	X						
WSP-OU3-24	Soil	0-6	11/10/16	2016 OU3 RI	529447.9150	953642.9010	X	X						
		6-12					X	X						
		12-18					X	X						JC31282R
WSP-OU3-25	Soil	0-6	11/07/16	2016 OU3 RI	529360.3510	953218.3300	X	X						JC31282
		6-12					X	X						
		12-24						X						JC31282R
WSP-OU3-26	Soil	0-6	11/07/16	2016 OU3 RI	529394.0990	953177.8640	X	X						JC31282
		6-12					X	X						
WSP-OU3-27	Soil	0-6	11/07/16	2016 OU3 RI	529246.2100	953120.5290	X	X						
		6-12					X	X						
		12-24					X	X						JC31282R
WSP-OU3-28	Soil	0-6	11/07/16	2016 OU3 RI	529284.7280	953069.2240	X	X						JC31282
		6-12					X	X						
WSP-OU3-29	Soil	0-6	11/03/16	2016 OU3 RI	529034.0090	952888.4320	X	X						JC31102
		6-12					X	X						
		6-12 (g)					X	X						
WSP-OU3-30	Soil	0-6	11/07/16	2016 OU3 RI	529093.4440	952852.0070	X	X						JC31282
		6-12					X	X						
WSP-OU3-31	Soil	0-6	11/03/16	2016 OU3 RI	528943.8110	952761.1510	X	X						JC31102
		6-12					X	X						
WSP-OU3-32	Soil	0-6	11/07/16	2016 OU3 RI	529017.2630	952717.1210	X	X						JC31282
		6-12					X	X						

Table 2

Sample Summary
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID	Sample Type	Sample Depth (inches)	Sample Date	Investigation Phase	Easting (b)	Northing (b)	Sample Analysis							Data Package
							Arsenic	Lead	TAL Metals	TCL VOCs	TCL SVOCs	TCL PCBs	TCL Pesticides	
Tax Parcel 0-0-0	**NYSDOT Right-of-Way (Continued)**													
WSP-OU3-33	Soil	0-6	11/03/16	2016 OU3 RI	528863.9940	952642.4850	X	X						JC31102
		0-6 (h)					X	X						
		6-12					X	X						
WSP-OU3-34	Soil	0-6	11/07/16	2016 OU3 RI	528942.1390	952602.4740	X	X						JC31282
		6-12					X	X						
WSP-OU3-35	Soil	0-6	11/03/16	2016 OU3 RI	528777.1230	952525.3170	X	X	X	X	X	X	X	JC31102
		6-12					X	X						
WSP-OU3-36	Soil	0-6	11/03/16	2016 OU3 RI	528853.7470	952460.4760	X	X						
		6-12					X	X						
WSP-OU3-37	Soil	0-6	11/03/16	2016 OU3 RI	528697.6690	952396.1370	X	X						
		0-6 (i)					X	X						
		6-12					X	X						
WSP-OU3-38	Soil	0-6	11/03/16	2016 OU3 RI	528769.3340	952350.2600	X	X	X					
		0-6 (j)					X	X	X					
		6-12					X	X						
		12-24						X						JC31102R
WSP-OU3-39	Soil	0-6	11/07/16	2016 OU3 RI	528703.4630	951484.7580	X	X						JC31282
		6-12					X	X						
WSP-OU3-40	Soil	0-6	11/07/16	2016 OU3 RI	528747.2800	951537.0320	X	X						
		6-12					X	X						
WSP-OU3-41	Soil	0-6	11/07/16	2016 OU3 RI	528746.0640	951426.2670	X	X						JC31282
		6-12					X	X						
WSP-OU3-42	Soil	0-6	11/07/16	2016 OU3 RI	528807.5870	951386.8520	X	X						
WSP-OU3-43	Soil	0-6	11/08/16	2016 OU3 RI	528818.0590	951016.4240	X	X						JC31386
		6-12					X	X						
WSP-OU3-44	Soil	0-6	11/08/16	2016 OU3 RI	528852.3810	951022.6810								
		6-12												
WSP-OU3-45	Soil	0-6	11/08/16	2016 OU3 RI	528812.7350	950739.6870	X	X						
		6-12					X	X						

Table 2

Sample Summary
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID	Sample Type	Sample Depth (inches)	Sample Date	Investigation Phase	Easting (b)	Northing (b)	Sample Analysis							Data Package
							Arsenic	Lead	TAL Metals	TCL VOCs	TCL SVOCs	TCL PCBs	TCL Pesticides	
Tax Parcel 0-0-0		**NYSDOT Right-of-Way (Continued)**												
WSP-OU3-46	Soil	0-6	11/08/16	2016 OU3 RI	528853.6630	950750.6840	X	X						JC31386
		6-12					X	X						
WSP-OU3-47	Soil	0-6	11/08/16	2016 OU3 RI	528857.9840	950695.4710	X	X						
		6-12					X	X						
WSP-OU3-48	Soil	0-6	11/08/16	2016 OU3 RI	528914.3290	950694.2500	X	X						
		6-12					X	X						
WSP-OU3-49	Soil	0-6	11/08/16	2016 OU3 RI	528903.0700	950632.0870	X	X						
		6-12					X	X						
WSP-OU3-50	Soil	0-6	11/08/16	2016 OU3 RI	528986.9350	950661.8960	X	X						
		6-12					X	X						
WSP-OU3-51	Soil	0-6	11/08/16	2016 OU3 RI	528999.5790	950501.3800	X	X						
		0-6 (k)					X	X						
		6-12					X	X						
WSP-OU3-52	Soil	0-6	11/08/16	2016 OU3 RI	529065.1850	950526.8180	X	X						
		6-12					X	X						
WSP-OU3-53	Soil	0-6	11/09/16	2016 OU3 RI	529032.928	950375.763	X	X						JC31460
		6-12					X	X						
WSP-OU3-54	Soil	0-6	11/09/16	2016 OU3 RI	529078.099	950390.414	X	X						
		6-12					X	X						
WSP-OU3-55	Soil	0-6	11/09/16	2016 OU3 RI	529078.945	950301.035	X	X						
		6-12					X	X						
WSP-OU3-56	Soil	0-6	11/09/16	2016 OU3 RI	529110.98	950311.825	X	X						JC31460
		6-12					X	X						
WSP-OU3-57	Soil	0-6	11/09/16	2016 OU3 RI	529111.014	950256.923	X	X						
		6-12					X	X						
WSP-OU3-58	Soil	0-6	11/09/16	2016 OU3 RI	529143.427	950251.454	X	X						
		6-12					X	X						
		12-24						X						
WSP-OU3-59	Soil	0-6	11/09/16	2016 OU3 RI	529159.77	950069.913	X	X						
		6-12					X	X						

Table 2

Sample Summary
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID	Sample Type	Sample Depth (inches)	Sample Date	Investigation Phase	Easting (b)	Northing (b)	Sample Analysis							Data Package
							Arsenic	Lead	TAL Metals	TCL VOCs	TCL SVOCs	TCL PCBs	TCL Pesticides	
Tax Parcel 0-0-0		**NYSDOT Right-of-Way (Continued)**												
WSP-OU3-60	Soil	0-6	11/09/16	2016 OU3 RI	529199.6380	950094.5390	X	X						JC31460
		6-12					X	X						
		12-24						X						
WSP-OU3-61	Soil	0-6	11/09/16	2016 OU3 RI	529273.9420	949958.6830	X	X						
		6-12					X	X						
WSP-OU3-62	Soil	0-6	11/09/16	2016 OU3 RI	529301.8360	949971.5000	X	X						
		0-6 (l)					X	X						
WSP-OU3-63	Soil	0-6	11/03/16	2016 OU3 RI	529289.3710	949622.9110	X	X						JC31102
		6-12					X	X						
WSP-OU3-64	Soil	0-6	11/03/16	2016 OU3 RI	529329.7750	949638.2400	X	X						
		6-12					X	X						
WSP-OU3-71	Soil	0-6	11/02/16	2016 OU3 RI	529176.5620	949286.6700	X	X						JC31040
		6-12					X	X						
WSP-OU3-77	Soil	0-6	11/02/16	2016 OU3 RI	529656.8380	949293.5090	X	X						
		6-12					X	X	X					
WSP-OU3-79	Soil	0-6	11/03/16	2016 OU3 RI	529788.4700	949357.8670	X	X	X	X	X	X	X	JC31102
		0-6 (m)					X	X	X	X	X	X	X	
		6-12					X	X						
		12-24						X						JC31102R
WSP-OU3-81	Soil	0-6	11/03/16	2016 OU3 RI	529913.7710	949432.4860	X	X						JC31102
		6-12					X	X						
WSP-OU3-83	Soil	0-6	11/10/16	2016 OU3 RI	529254.1550	949845.1810	X	X						JC31580
		6-12					X	X						
Tax Parcel 78-1-92		**Galleria at Crystal Run Mall**												
WSP-SED-27	Sediment	0-3	12/16/09	2009 OU3 RI	530274.0900	954788.3750		X						J11106
WSP-SED-28	Sediment	0-3	12/16/09	2009 OU3 RI	530201.2050	954667.1420		X						
WSP-SED-29	Sediment	0-3	12/16/09	2009 OU3 RI	530169.5710	954533.3530		X	X					
WSP-SED-32	Sediment	0-3	12/16/09	2009 OU3 RI	529974.1790	954173.9150		X						J11106
		0-6	11/02/16	2016 OU3 RI	529968.5980	954180.5370	X	X						JC31040
		6-12					X	X						

Table 2

Sample Summary
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID	Sample Type	Sample Depth (inches)	Sample Date	Investigation Phase	Easting (b)	Northing (b)	Sample Analysis							Data Package
							Arsenic	Lead	TAL Metals	TCL VOCs	TCL SVOCs	TCL PCBs	TCL Pesticides	
Tax Parcel 78-1-92		**Galleria at Crystal Run Mall (Continued)**												
WSP-SED-33	Sediment	0-3	12/16/09	2009 OU3 RI	529867.1370	954072.4030		X						J11106
WSP-SED-34	Sediment	0-3	12/16/09	2009 OU3 RI	529738.3600	953960.8300		X						
WSP-SED-35	Sediment	0-3	12/16/09	2009 OU3 RI	529664.2830	953858.0500		X						J11106
WSP-SED-36	Sediment	0-3	12/16/09	2009 OU3 RI	529525.5400	953755.2470		X						
WSP-SED-37	Sediment	0-3	12/16/09	2009 OU3 RI	529407.0040	953680.2970		X						
		0-6	11/02/16	2016 OU3 RI	529416.2340	953676.7570	X	X						JC31040
		6-12					X	X						
WSP-SED-38	Sediment	0-3	10/20/11	2011 OU3 RI	529481.2800	953930.9010	X	X	X					JA89990
WSP-SED-39	Sediment	0-3	10/20/11	2011 OU3 RI	529480.0190	953779.3850	X	X	X					
		0-3 (n)					X	X	X					
WSP-SED-40	Sediment	0-3	10/20/11	2011 OU3 RI	529857.0010	954152.7120	X	X	X					
WSP-SED-41	Sediment	0-3	10/20/11	2011 OU3 RI	529894.5580	954185.9930	X	X	X					
WSP-SED-42	Sediment	0-3	10/20/11	2011 OU3 RI	529880.8470	954164.3980	X	X	X					
WSP-SED-43	Sediment	0-3	10/20/11	2011 OU3 RI	529714.9150	954274.4800	X	X	X					
WSP-OU3-01	Soil	0-6	10/31/16	2016 OU3 RI	530238.5580	954831.6640	X	X						JC30867
		6-12					X	X						
WSP-OU3-03	Soil	0-6	10/31/16	2016 OU3 RI	530149.4440	954678.1830	X	X						
		6-12					X	X						
		12-24					X	X						JC30867R
WSP-OU3-05	Soil	0-6	10/31/16	2016 OU3 RI	530130.5030	954575.8890	X	X						JC30867
		6-12					X	X						
		12-18						X						JC30867R
WSP-OU3-07	Soil	0-6	10/31/16	2016 OU3 RI	530105.5250	954402.0250	X	X						JC30867
		6-12					X	X						
		12-24						X						JC30867R
WSP-OU3-09	Soil	0-6	10/31/16	2016 OU3 RI	530006.1100	954305.6940	X	X						JC30867
		6-12					X	X						
WSP-OU3-11	Soil	0-6	11/01/16	2016 OU3 RI	529906.5540	954210.9480	X	X	X	X	X	X	X	JC30909
		6-12					X	X						

Table 2

Sample Summary
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID	Sample Type	Sample Depth (inches)	Sample Date	Investigation Phase	Easting (b)	Northing (b)	Sample Analysis							Data Package
							Arsenic	Lead	TAL Metals	TCL VOCs	TCL SVOCs	TCL PCBs	TCL Pesticides	
Tax Parcel 78-1-92		**Galleria at Crystal Run Mall (Continued)**												
WSP-OU3-13	Soil	0-6	11/01/16	2016 OU3 RI	529655.5510	954269.1110	X	X						JC30909
		6-12					X	X						
WSP-OU3-14	Soil	0-6	11/01/16	2016 OU3 RI	529777.6980	954284.9960	X	X						
		6-12					X	X	X					
WSP-OU3-15	Soil	0-6	11/01/16	2016 OU3 RI	529826.9640	954107.2650	X	X						
		6-12					X	X						
WSP-OU3-16	Soil	0-6	11/01/16	2016 OU3 RI	529904.0960	954043.1860	X	X						
		0-6 (o)					X	X						
		6-12					X	X						
WSP-OU3-17	Soil	0-6	11/01/16	2016 OU3 RI	529695.5170	953992.9730	X	X						
		6-12					X	X						
WSP-OU3-18	Soil	0-6	11/01/16	2016 OU3 RI	529773.8970	953935.6810	X	X	X					
		6-12					X	X						
		6-12 (p)					X	X						
WSP-OU3-19	Soil	0-6	11/01/16	2016 OU3 RI	529629.1260	953894.9950	X	X						
		0-6 (q)					X	X						
		6-12					X	X						
WSP-OU3-21	Soil	0-6	11/02/16	2016 OU3 RI	529371.7960	953864.1450	X	X						JC31040
		6-12					X	X						
WSP-OU3-23	Soil	0-6	11/02/16	2016 OU3 RI	529372.0240	953714.1090	X	X						
		6-12					X	X						
Tax Parcel 78-1-82		**4 Storage 2 LLC Property**												
WSP-SED-30	Sediment	0-3	12/16/09	2009 OU3 RI	530139.4110	954352.8020		X						J11106
WSP-SED-31	Sediment	0-3	12/16/09	2009 OU3 RI	530040.7020	954260.7970		X						
WSP-OU3-02	Soil	0-6	10/27/16	2016 OU3 RI	530306.9420	954756.1250	X	X						JC30678
		6-12					X	X						
		6-12 (r)					X	X						
WSP-OU3-04	Soil	0-6	10/27/16	2016 OU3 RI	530243.0200	954664.8020	X	X						JC30678
		6-12					X	X						

Table 2

Sample Summary
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID	Sample Type	Sample Depth (inches)	Sample Date	Investigation Phase	Easting (b)	Northing (b)	Sample Analysis							Data Package
							Arsenic	Lead	TAL Metals	TCL VOCs	TCL SVOCs	TCL PCBs	TCL Pesticides	
Tax Parcel 78-1-82		**4 Storage 2 LLC Property (Continued)**												
WSP-OU3-06	Soil	0-6	10/28/16	2016 OU3 RI	530214.2340	954516.0130	X	X						JC30756
		6-12					X	X						
		12-18						X						JC30756R
WSP-OU3-08	Soil	0-6	10/28/16	2016 OU3 RI	530180.6420	954340.3970	X	X	X					JC30756
		6-12					X	X						
WSP-OU3-10	Soil	0-6	10/28/16	2016 OU3 RI	530088.4410	954245.7380	X	X						
		6-12					X	X						
WSP-OU3-12	Soil	0-6	10/28/16	2016 OU3 RI	530015.0300	954141.9540	X	X						
		6-12					X	X						
Tax Parcel 78-1-34.4		**758 E. Main Street**												
WSP-SED-66	Sediment	0-3	09/02/15	2015 OU3 RI	529334.0500	949511.6000	X	X						JC3143
WSP-SED-67	Sediment	0-3	09/02/15	2015 OU3 RI	529324.2400	949367.1300	X	X	X					
WSP-SED-68	Sediment	0-3	09/02/15	2015 OU3 RI	529319.0200	949253.2500	X	X						
WSP-OU3-65	Soil	0-2	09/02/15	2015 OU3 RI	529321.1800	949490.9400	X	X						
		2-6					X	X						
		6-12					X	X						
WSP-OU3-66	Soil	0-2	09/02/15	2015 OU3 RI	529356.1400	949510.5500	X	X						
		2-6					X	X						
		6-12					X	X						
WSP-OU3-67	Soil	0-2	09/02/15	2015 OU3 RI	529303.8300	949368.9800	X	X	X					
		2-6					X	X						
		6-12					X	X						
WSP-OU3-68	Soil	0-2	09/02/15	2015 OU3 RI	529341.2500	949374.7900	X	X						
		2-6					X	X						
		6-12					X	X						
WSP-OU3-69	Soil	0-2	09/02/15	2015 OU3 RI	529292.7900	949250.7100	X	X						JC3143
		2-6					X	X						
		6-12					X	X						

Table 2

Sample Summary
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID	Sample Type	Sample Depth (inches)	Sample Date	Investigation Phase	Easting (b)	Northing (b)	Sample Analysis							Data Package
							Arsenic	Lead	TAL Metals	TCL VOCs	TCL SVOCs	TCL PCBs	TCL Pesticides	
Tax Parcel 78-1-34.4		**758 E. Main Street (Continued)**												
WSP-OU3-70	Soil	0-2	09/02/15	2015 OU3 RI	529362.8200	949255.5900	X	X						JC3143
		2-6					X	X						
		2-6 (s)					X	X						
		6-12					X	X						
WSP-OU3-73	Soil	0-6	11/02/16	2016 OU3 RI	529329.5530	949279.2720	X	X						JC31040
		0-6 (t)					X	X						
		6-12					X	X						
		12-24					X	X						JC31040R
WSP-OU3-75	Soil	0-6	11/02/16	2016 OU3 RI	529502.9070	949255.4870	X	X						JC31040
		6-12					X	X						
		12-24						X						JC31040R
Tax Parcel 78-1-30		**Wallkill Cemetary Association**												
WSP-OU3-72	Soil	0-6	10/26/16	2016 OU3 RI	529163.1850	949095.4970	X	X						JC30595
		6-12					X	X						
WSP-OU3-74	Soil	0-6	10/26/16	2016 OU3 RI	529321.9570	949089.6570	X	X						
		6-12					X	X						
WSP-OU3-76	Soil	0-6	10/26/16	2016 OU3 RI	529530.7820	949105.8010	X	X						
		6-12					X	X						
		12-24					X							JC30595R
WSP-OU3-78	Soil	0-6	10/26/16	2016 OU3 RI	529719.7320	949175.3970	X	X						JC30595
		6-12					X	X						
WSP-OU3-80	Soil	0-6	10/27/16	2016 OU3 RI	529853.0360	949238.4980	X	X						JC30678
		6-12					X	X	X					
		6-12 (u)					X	X	X					
WSP-OU3-82	Soil	0-6	10/27/16	2016 OU3 RI	529992.5090	949323.4840	X	X						
		6-12					X	X						

Table 2

Sample Summary
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID	Sample Type	Sample Depth (inches)	Sample Date	Investigation Phase	Easting (b)	Northing (b)	Sample Analysis							Data Package
							Arsenic	Lead	TAL Metals	TCL VOCs	TCL SVOCs	TCL PCBs	TCL Pesticides	
Tax Parcel 999		**Wallkill River**												
WSP-SED-70	Sediment	0-6	10/25/16	2016 OU3 RI	529172.9990	949209.2300	X	X						JC30595
		6-12	11/04/16				X	X						JC31213
WSP-SED-71	Sediment	0-6	10/25/16	2016 OU3 RI	529170.8130	949176.4140	X	X						JC30595
WSP-SED-72	Sediment	0-6	10/25/16	2016 OU3 RI	529168.9740	949139.1540	X	X						
WSP-SED-73	Sediment	0-6	10/25/16	2016 OU3 RI	529325.1040	949215.9970	X	X						
WSP-SED-73A	Sediment	6-12	11/04/16	2016 OU3 RI	529336.7040	949235.3040	X	X						JC31213
WSP-SED-74	Sediment	0-6	10/25/16	2016 OU3 RI	529323.9380	949176.1360	X	X						JC30595
WSP-SED-75	Sediment	0-6	10/25/16	2016 OU3 RI	529322.5350	949135.6010	X	X						
WSP-SED-76	Sediment	0-6	10/26/16	2016 OU3 RI	529508.3350	949217.4290	X	X						
		0-6 (v)					X	X						
		6-12	11/04/16				X	X						JC31213
WSP-SED-77	Sediment	0-6	10/26/16	2016 OU3 RI	529517.8120	949173.0380	X	X						JC30595
WSP-SED-78	Sediment	0-6	10/26/16	2016 OU3 RI	529524.0030	949133.0140	X	X						
WSP-SED-79	Sediment	0-6	10/26/16	2016 OU3 RI	529673.6180	949256.5910	X	X						
WSP-SED-79A	Sediment	6-12	11/04/16	2016 OU3 RI	529665.7560	949276.6940	X	X						JC31213
WSP-SED-80	Sediment	0-6	10/26/16	2016 OU3 RI	529686.1050	949228.1450	X	X	X					JC30595
		0-6 (w)					X	X	X					
WSP-SED-81	Sediment	0-6	10/26/16	2016 OU3 RI	529699.9440	949202.6370	X	X						
WSP-SED-82	Sediment	0-6	10/26/16	2016 OU3 RI	529807.4350	949320.8510	X	X						
WSP-SED-83	Sediment	0-6	10/26/16	2016 OU3 RI	529820.7720	949292.2270	X	X						
WSP-SED-84	Sediment	0-6	10/26/16	2016 OU3 RI	529837.1510	949264.4790	X	X						
WSP-SED-85	Sediment	0-6	10/27/16	2016 OU3 RI	529942.2860	949406.7910	X	X	X	X	X	X	X	JC30678
		0-6 (x)					X	X	X	X	X	X	X	

Table 2

Sample Summary
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID	Sample Type	Sample Depth (inches)	Sample Date	Investigation Phase	Easting (b)	Northing (b)	Sample Analysis							Data Package
							Arsenic	Lead	TAL Metals	TCL VOCs	TCL SVOCs	TCL PCBs	TCL Pesticides	
Tax Parcel 999		**Wallkill River (Continued)**												
WSP-SED-86	Sediment	0-6	10/27/16	2016 OU3 RI	529957.9470	949363.3900	X	X						JC30595
WSP-SED-87	Sediment	0-6	10/27/16	2016 OU3 RI	529980.2420	949344.7930	X	X						

a/ RI = Remedial Investigation; OU3 = Operable Unit 3; TAL = Target Analyte List; TCL = Target Compound List; VOCs = Volatile Organic Compounds; SVOCs = Semi-volatile Organic Compounds; PCBs = Polychlorinated Biphenyls
b/ The horizontal datum is the New York East State Plane Coordinate System NAD83. Northings and eastings for samples WSP-SED-I84-01 and WSP-SED-I84-02 are approximate.
c/ WSP-SED-113-0-0.5 is a blind duplicate of WSP-SED-51-0-0.5.
d/ WSP-SED-530 is a blind duplicate of WSP-SED-53
e/ WSP-SED-560 is a blind duplicate of WSP-SED-56
f/ WSP-SED-114-0-0.5 is a blind duplicate of WSP-SED-57-0-0.5
g/ WSP-OU3-112-0.5-1 is a blind duplicate of WSP-OU3-29-0.5-1
h/ WSP-OU3-111-0-0.5 collected on 11/03/16 is a blind duplicate of WSP-OU3-33-0-0.5
i/ WSP-OU3-109-0-0.5 is a blind duplicate of WSP-OU3-37-0-0.5
j/ WSP-OU3-110-0-0.5 is a blind duplicate of WSP-OU3-38-0-0.5
k/ WSP-OU3-111-0-0.5 collected on 11/08/16 is a blind duplicate of WSP-OU3-51-0-0.5
l/ WSP-OU3-113-0-0.5 is a blind duplicate WSP-OU3-62-0-0.5
m/ WSP-OU3-108-0-0.5 is a blind duplicate of WSP-OU3-79-0-0.5
n/ WSP-SED-390 is a blind duplicate of WSP-SED-39
o/ WSP-OU3-104-0-0.5 is a blind duplicate of WSP-OU3-16-0-0.5
p/ WSP-OU3-105-0.5-1 is a blind duplicate of WSP-OU3-18-0.5-1
q/ WSP-OU3-106-0-0.5 is a blind duplicate of WSP-OU3-19-0-0.5
r/ WSP-OU3-104-0.5-1 is a blind duplicate of WSP-OU3-02-0.5-1
s/ WSP-OU3-700 (2-6) is a blind duplicate of WSP-OU3-70 (2-6)
t/ WSP-OU3-107-0-0.5 is a blind duplicateof WSP-OU3-73-0-0.5
u/ WSP-OU3-103-0.5-1 is a blind duplicate of WSP-OU3-80-0.5-1
v/ WSP-SED-100-0-0.5 is a blind duplicate of WSP-SED-76-0-0.5
w/ WSP-SED-101-0-0.5 is a blind duplicate of WSP-SED-80-0-0.5
x/ WSP-SED-102-0-0.5 is a blind duplicate of WSP-SED-85-0-0.5

Table 3

Soil Sampling Results - Lead and Arsenic
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Depth (inches):		0-2		2-6		0-6		6-12		12-24		
Metals (mg/kg)	Date	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Notes
Phillipsburg Creek Floodplain												
WSP-OU3-01	10/31/16	-	-	-	-	10.0	15.4	5.9	18.9	NA	NA	
WSP-OU3-02	10/27/16	-	-	-	-	11.9 J	**225 J**	7.1 J	51.3 J	NA	NA	
		-	-	-	-	-	-	6.1	39.5	NA	NA	(h)
WSP-OU3-03	10/31/16	-	-	-	-	**32.7**	**3,090**	**15.2**	**1,440**	6.6	**155**	
WSP-OU3-04	10/27/16	-	-	-	-	4.8 J	61.7 J	9.7	20.6	NA	NA	
WSP-OU3-05	10/31/16	-	-	-	-	10.9	**656**	7.5	**236**	NA	**120**	(e)
WSP-OU3-06	10/28/16	-	-	-	-	**17.8**	**897**	6.4	**206**	NA	31.3	(e)
WSP-OU3-07	10/31/16	-	-	-	-	**18.4**	**1,220**	6.8	**298**	NA	25.1	
WSP-OU3-08	10/28/16	-	-	-	-	6.2	48.3	11.1	22.2	NA	NA	
WSP-OU3-09	10/31/16	-	-	-	-	12.8	**960**	5.3	**193**	-	-	(f)
WSP-OU3-10	10/28/16	-	-	-	-	3.4	56.8	4.7	12.7	NA	NA	(e)
WSP-OU3-11	11/01/16	-	-	-	-	3.6	59.7	5.3	19.3	NA	NA	(e)
WSP-OU3-12	10/28/16	-	-	-	-	7.2	57.3	10.7	24.0	NA	NA	
WSP-OU3-13	11/01/16	-	-	-	-	4.6	41.6	4.7	23.7	-	-	(f)
WSP-OU3-14	11/01/16	-	-	-	-	5.4	28.9	5.9	18.9	NA	NA	(d)
WSP-OU3-15	11/01/16	-	-	-	-	6.0	60.0	5.2	30.5	NA	NA	
WSP-OU3-16	11/01/16	-	-	-	-	6.3	51.3	9.8	25.8	NA	NA	
		-	-	-	-	6.5	61.5	-	-	-	-	(i)
WSP-OU3-17	11/01/16	-	-	-	-	4.7	46.6	5.2	24.5	NA	NA	
WSP-OU3-18	11/01/16	-	-	-	-	6.0	**143**	6.0	29.2	NA	NA	
		-	-	-	-	-	-	5.2	23.7	NA	NA	(j)
WSP-OU3-19	11/01/16	-	-	-	-	4.2	41.1	3.3	21.1	NA	NA	
		-	-	-	-	4.7	48.0	-	-	-	-	(k)
WSP-OU3-20	11/10/16	-	-	-	-	6.4	44.6	5.9	27.2	NA	NA	
WSP-OU3-21	11/01/16	-	-	-	-	8.4	23.2	6.1	17.8	NA	NA	
WSP-OU3-22	11/10/16	-	-	-	-	9.8	40.0	8.4	26.0	NA	NA	
WSP-OU3-23	11/02/16	-	-	-	-	3.8	47.2	2.5	15.6	NA	NA	
WSP-OU3-24	11/10/16	-	-	-	-	**19.2**	**1,120**	**24.6**	**1,530**	**21.0 J**	**1,120**	(e)
WSP-OU3-25	11/07/16	-	-	-	-	9.9	**346**	12.8	**270**	NA	**279**	
WSP-OU3-26	11/07/16	-	-	-	-	9.3	42.0	7.5	16.2	NA	NA	(e)
WSP-OU3-27	11/07/16	-	-	-	-	8.6	25.0	**13.3**	19.5	6.4	19.3	
WSP-OU3-28	11/07/16	-	-	-	-	5.9	47.9	7.9	24.0	-	-	(f)
WSP-OU3-29	11/03/16	-	-	-	-	5.8	51.1	7.4	25.9	NA	NA	(e)
		-	-	-	-	-	-	8.4 J	26.2	-	-	(l)
WSP-OU3-30	11/07/16	-	-	-	-	5.3	47.9	5.9	28.3	NA	NA	
WSP-OU3-31	11/03/16	-	-	-	-	5.1	29.6	5.1	15.5	NA	NA	
WSP-OU3-32	11/07/16	-	-	-	-	6.9 J	**86.8 J**	3.0 U	22.4	NA	NA	
WSP-OU3-33	11/03/16	-	-	-	-	2.5 U	44.8	2.5	12.0	NA	NA	
		-	-	-	-	4.9	33.2	-	-	-	-	(m)
WSP-OU3-34	11/07/16	-	-	-	-	6.5	50.7	6.1	19.4	NA	NA	
WSP-OU3-35	11/03/16	-	-	-	-	7.4	34.6	6.4	17.8	NA	NA	
WSP-OU3-36	11/03/16	-	-	-	-	2.0 U	**86.9**	2.7 U	15.1	NA	NA	
WSP-OU3-37	11/03/16	-	-	-	-	5.0	38.8	4.3	18.3	NA	NA	
		-	-	-	-	6.1	32.3	-	-	-	-	(n)
WSP-OU3-38	11/03/16	-	-	-	-	**20.5**	**1,320**	13.0	**709**	NA	29.3	
		-	-	-	-	**26.7**	**1,620**	-	-	-	-	(o)
WSP-OU3-39	11/07/16	-	-	-	-	7.0	22.3	6.3	24.3	NA	NA	
WSP-OU3-40	11/07/16	-	-	-	-	7.0	32.8	8.0	22.0	NA	NA	

Table 3

Soil Sampling Results - Lead and Arsenic
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Depth (inches):		0-2		2-6		0-6		6-12		12-24		
Metals (mg/kg)	Date	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Notes
Phillipsburg Creek Floodplain (Continued)												
WSP-OU3-41	11/07/16	-	-	-	-	7.5	39.8	6.2	20.7	-	-	(f)
WSP-OU3-42	11/07/16	-	-	-	-	4.5	31.9	-	-	-	-	(f)
WSP-OU3-43	11/08/16	-	-	-	-	7.0 J	19.0	6.1 J	11.9	NA	NA	(e)
WSP-OU3-44	11/08/16	-	-	-	-	5.0	49.8	6.7	24.7	-	-	(f)
WSP-OU3-45	11/08/16	-	-	-	-	8.2	51.3	7.2	37.4	NA	NA	(d)
WSP-OU3-46	11/08/16	-	-	-	-	6.0	**71.7**	5.5	37.4	-	-	(f)
WSP-OU3-47	11/08/16	-	-	-	-	8.1	**146**	8.1	**109**	-	-	(f)
WSP-OU3-48	11/08/16	-	-	-	-	9.1	52.6	6.9	23.0	-	-	(f)
WSP-OU3-49	11/08/16	-	-	-	-	**30.6**	**957**	9.7	**201**	-	-	(f)
WSP-OU3-50	11/08/16	-	-	-	-	7.5	24.4	7.8	27.9	NA	NA	(e)
WSP-OU3-51	11/08/16	-	-	-	-	8.1	**72.5**	7.3	40.9	NA	NA	(f)
		-	-	-	-	8.1	**73.2**	-	-	-	-	(p)
WSP-OU3-52	11/08/16	-	-	-	-	5.2	55.7	5.2	40.8	NA	NA	(e)
WSP-OU3-53	11/09/16	-	-	-	-	6.6	56.9	7.0 J	50.5	-	-	(f)
WSP-OU3-54	11/09/16	-	-	-	-	6.9 J	46.7	7.4 J	25.8	NA	NA	(e)
WSP-OU3-55	11/09/16	-	-	-	-	8.8 J	19.0	7.5 J	18.2	NA	NA	
WSP-OU3-56	11/09/16	-	-	-	-	**19.8 J**	**338**	**28.6 J**	**432**	-	-	(f)
WSP-OU3-57	11/09/16	-	-	-	-	12.3 J	**241**	13.0 J	**144**	-	-	(f)
WSP-OU3-58	11/09/16	-	-	-	-	**15.4**	**221**	12.1 J	**127**	NA	**125**	
WSP-OU3-59	11/09/16	-	-	-	-	6.9	**84.9**	7.5 J	39.3	NA	NA	
WSP-OU3-60	11/09/16	-	-	-	-	11.7 J	**281**	11.1	**186**	NA	**1,310 J**	
WSP-OU3-61	11/09/16	-	-	-	-	**13.5**	**128**	**15.5 J**	**122**	-	-	(f)
WSP-OU3-62	11/09/16	-	-	-	-	7.7	26.3	-	-	-	-	(f)
		-	-	-	-	7.5 J	25.9	-	-	-	-	(q)
WSP-OU3-63	11/03/16	-	-	-	-	8.5	**65.8**	8.2	57.5	NA	NA	
WSP-OU3-64	11/03/16	-	-	-	-	9.1	**140**	8.9	**120**	-	-	(f)
WSP-OU3-65	09/02/15	11.1	**216**	**14.8**	**83.4**	-	-	11.6	**102**	-	-	
WSP-OU3-66	09/02/15	**32.6**	**205**	**19.0**	**87.7**	-	-	**18.4**	**91.4**	-	-	
WSP-OU3-67	09/02/15	7.4	50.3	7.1	47.1	-	-	7.6	53.8	NA	-	
WSP-OU3-68	09/02/15	7.2	**103**	12.1	**247**	-	-	12.4	**245**	-	-	
WSP-OU3-69	09/02/15	5.9	11.6	5.8	11.1	-	-	5.9	12.3	-	-	
WSP-OU3-70	09/02/15	11.1	**103**	10.4	**74.3**	-	-	**20.0**	**130**	-	-	
		-	-	8.7	53.8	-	-	-	-	-	-	(r)
WSP-OU3-83	11/10/16	-	-	-	-	8.4	14.9	8.2	14.4	NA	NA	(e)

Table 3

Soil Sampling Results - Lead and Arsenic
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Depth (inches):		0-2		2-6		0-6		6-12		12-24		
Metals (mg/kg)	Date	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Notes
Wallkill River Transects												
WSP-OU3-71	11/02/16	-	-	-	-	6.1	37.9	3.9	21.4	NA	NA	
WSP-OU3-72	10/26/16	-	-	-	-	8.5	28.5	9.1	32.1	NA	NA	
WSP-OU3-73	11/02/16	-	-	-	-	**18.8**	**169**	**20.6**	**136**	10.1	**118**	
		-	-	-	-	**13.3**	**142**	-	-	-	-	(s)
WSP-OU3-74	10/26/16	-	-	-	-	7.8	24.7	9.4	28.4	NA	NA	
WSP-OU3-75	11/02/16	-	-	-	-	9.9	**125**	9.4	**96.3**	NA	39.3	
WSP-OU3-76	10/26/16	-	-	-	-	10.5	26.1	**28.9**	42.9	**34.4**	NA	
WSP-OU3-77	11/02/16	-	-	-	-	6.7	40.9	5.3	27.8	NA	NA	
WSP-OU3-78	10/26/16	-	-	-	-	8.5	**113**	11.2	**72.8**	-	-	(f)
WSP-OU3-79	11/03/16	-	-	-	-	10.6	29.0	7.2	**98.3**	NA	41.1	
		-	-	-	-	9.3	43.5	-	-	-	-	(t)
WSP-OU3-80	10/27/16	-	-	-	-	11.3	**101**	7.0	45.8	-	-	(f)
		-	-	-	-	-	-	7.6	41.3	-	-	(u)
WSP-OU3-81	11/03/16	-	-	-	-	7.6	22.4	8.6	21.5	NA	NA	
WSP-OU3-82	10/27/16	-	-	-	-	6.7	29.7	6.4	28.8	NA	NA	(e)

a/ mg/kg = milligrams per kilogram; J = Estimated result; U = Not detected above reporting limit; NA = Collected but not analyzed

b/ Values in bold exceed NYCRR Subpart 375-6.8(a) - Unrestricted Use Soil Cleanup Objectives of 13 mg/kg for arsenic or 63 mg/kg for lead.

c/ Highlighted values also exceed OU1 Remedial Goals of 16 mg/kg for Arsenic and 400 mg/kg for lead in Ecological Areas.

d/ Sample collected from 12-15 inches instead of 12-24 inches.

e/ Sample collected from 12-18 inches instead of 12-24 inches.

f/ Sample not collected from 12-24 inches.

g/ Sample not collected from 6-12 inches.

h/ WSP-OU3-104-0.5-1 is a blind duplicate of WSP-OU3-02-0.5-1

i/ WSP-OU3-104-0-0.5 is a blind duplicate of WSP-OU3-16-0-0.5

j/ WSP-OU3-105-0.5-1 is a blind duplicate of WSP-OU3-18-0.5-1

k/ WSP-OU3-106-0-0.5 is a blind duplicate of WSP-OU3-19-0-0.5

l/ WSP-OU3-112-0.5-1 is a blind duplicate of WSP-OU3-29-0.5-1

m/ WSP-OU3-111-0-0.5 is a blind duplicate of WSP-OU3-33-0-0.5

n/ WSP-OU3-109-0-0.5 is a blind duplicate of WSP-OU3-37-0-0.5

o/ WSP-OU3-110-0-0.5 is a blind duplicate of WSP-OU3-38-0-0.5

p/ WSP-OU3-111-0-0.5 is a blind duplicate of WSP-OU3-51-0-0.5

q/ WSP-OU3-113-0-0.5 is a blind duplicate WSP-OU3-62-0-0.5

r/ WSP-OU3-700 (2-6) is a blind duplicate of WSP-OU3-70 (2-6)

s/ WSP-OU3-107-0-0.5 is a blind duplicateof WSP-OU3-73-0-0.5

t/ WSP-OU3-108-0-0.5 is a blind duplicate of WSP-OU3-79-0-0.5

u WSP-OU3-103-0.5-1 is a blind duplicate of WSP-OU3-80-0.5-1

Table 4

Soil Sampling Results - Target Analyte List Metals
Operable Unit 3 Remedial Investigation Report
Revere Smelting & Refining
Middletown, New York

Sample ID:						Phillipsburg Creek Floodplain							
						WSP-OU3-08	WSP-OU3-11	WSP-OU3-14	WSP-OU3-18	WSP-OU3-35	WSP-OU3-38		WSP-OU3-67
Sample Type:	NYCRR Subpart 375-6.8 - SCO (b)					Primary	Primary	Primary	Primary	Primary	Primary	Duplicate	Primary
Date:						10/28/16	11/01/16	11/01/16	11/01/16	11/03/16	11/03/16	11/03/16 (e)	09/02/15
Depth (inches):	Unrestricted Use	Residential	Restricted-Residential	Commercial	Industrial	0-6	0-6	6-12	0-6	0-6	0-6	0-6	0-2
Aluminum	-	-	-	-	-	14,100	15,100	12,400	19,100	16,200 J	17,600	19,000	11,900 J
Antimony	-	-	-	-	-	2.6 UJ	2.5 UJ	2.4 UJ	2.7 UJ	2.5 UJ	9.5	11.4	2.4 UJ
Arsenic	13	16	16	16	16	6.2	3.6	5.9	6.0	7.4	**20.5**	**26.7**	7.4
Barium	350	350	400	400	10,000	110	53.0	54.9	135	78	131	129	88.9
Beryllium	7.2	14	72	590	2,700	0.68	0.47	0.52	0.86	0.77	0.92	0.99	0.63
Cadmium	2.5	2.5	4.3	9.3	60	0.66 U	0.63 U	0.60 U	0.67 U	0.63 U	2.2	1.9	0.61
Calcium	-	-	-	-	-	4,740	630 U	1,690	2,760	2,490 J	3,480	4,150	9,610
Chromium	30	36	180	1,500	6,800	18.7	16.0	15.4	22.6	22.7	23.6	24.7	16.3
Cobalt	-	-	-	-	-	6.6 U	6.3 U	9.0	8.1	11.9	13.5	14.1	9.3
Copper	50	270	270	270	10,000	10.1	8.8	24.7	13.6	29.8	39.7	42.0	46.2
Iron	-	-	-	-	-	25,100	14,200	20,800	20,400	25,900	20,300	22,300	18,400
Lead	63	400	400	1,000	3,900	48.3 J	59.7	18.9	**143**	34.6	**1,320**	**1,620**	50.3
Magnesium	-	-	-	-	-	2,880	2,520 J	3,930 J	4,080	5,610 J	4,140	4,410	5,220
Manganese	1,600	2,000	2,000	10,000	10,000	580 J	150 J	708 J	896 J	719 J	**1,990**	1,360	975 J
Mercury	0.18	0.81	0.81	2.8	5.7	0.062	0.054	0.037 U	0.053	0.038	0.096	0.12	0.12
Nickel	30	140	310	310	10,000	13.8	11.1	21.4	22.3	27.3	27.7	27.8	21.0
Potassium	-	-	-	-	-	1,320 J	1,300 U	1,200 U	1,340 J	1,320 J	1,360	1,490	1,840 J
Selenium	3.9	36	180	1,500	6,800	2.6 U	2.5 U	2.4 U	2.7 U	2.5 U	2.0 U	2.1 U	2.4 U
Silver	2	36	180	1,500	6,800	0.66 U	0.63 U	0.60 U	0.67 U	0.63 U	1.5 U	1.6 U	0.66
Sodium	-	-	-	-	-	1,300 U	1,300 U	1,200 U	1,300 U	1,300 U	1,000 U	1,000 U	1,200 U
Thallium	-	-	-	-	-	1.3 U	1.3 U	1.2 U	1.3 U	1.3 U	3.1 U	3.1 U	1.2 U
Vanadium	-	-	-	-	-	27.8	22.9	19.2	29.2	25.5	27.2	29.3	18.5
Zinc	109	2,200	10,000	10,000	10,000	86.2	57.3	66.3	94.7	92.5	**179**	**173**	**117**

Table 4

Soil Sampling Results - Target Analyte List Metals
Operable Unit 3 Remedial Investigation Report
Revere Smelting & Refining
Middletown, New York

Sample ID:						Wallkill River Transects				
Sample Type:	NYCRR Subpart 375-6.8 - SCO (b)					WSP-OU3-77	WSP-OU3-79		WSP-OU3-80	
						Primary	Primary	Duplicate	Primary	Duplicate
Date:	Unrestricted		Restricted-			11/02/16	11/03/16	11/03/16 (f)	10/27/16	10/27/16 (g)
Depth (inches):	Use	Residential	Residential	Commercial	Industrial	6-12	0-6	0-6	6-12	6-12
Aluminum	-	-	-	-	-	10,100 J	9,860 J	10,100 J	15,500	16,600
Antimony	-	-	-	-	-	2.4 UJ	2.2 UJ	2.2 UJ	2.3 UJ	2.2 UJ
Arsenic	13	16	16	16	16	5.3	10.6	9.3	7.0	7.6
Barium	350	350	400	400	10,000	30.3	59.6	51.9	66.3	69.1
Beryllium	7.2	14	72	590	2,700	0.49	0.64	0.53	0.71	0.78
Cadmium	2.5		4.3	9.3	60	0.61 U	0.54 U	0.56 U	0.56 U	0.55 U
Calcium	-	-	-	-	-	2,200	3,830 J	4,070 J	1,650	1,850 J
Chromium	-	-	180	1,500	6,800	18.1	15.2	16.4	21.4	24.2
Cobalt	-	-	-	-	-	7.8	11.9	10.7	9.8	11.7
Copper	50	270	270	270	10,000	16.5	17.6	18.1	26.3	31.6
Iron	-	-	-	-	-	20,300	27,000	25,200	25,700	30,000 J
Lead	63	400	400	1,000	3,900	27.8	29.0	43.5	45.8	41.3
Magnesium	-	-	-	-	-	5,520 J	6,000 J	6,420 J	6,310	6,570 J
Manganese	1,600	2,000	2,000	10,000	10,000	282 J	780 J	559 J	573	710 J
Mercury	-	-	0.81	2.8	5.7	0.033 U	0.035 U	0.091	0.066	0.059
Nickel	30	140	310	310	10,000	23.4	20.3	22.8	24.7	29.1
Potassium	-	-	-	-	-	1,200 U	1,100 U	1,100 U	1,790 J	1,550
Selenium	3.9	36	180	1,500	6,800	2.4 U	2.2 U	2.2 U	2.3 U	2.2 U
Silver	2	36	180	1,500	6,800	0.61 U	0.54 U	0.56 U	0.60	2.0
Sodium	-	-	-	-	-	1,200 U	1,100 U	1,100 U	1,100 U	1,100 U
Thallium	-	-	-	-	-	1.2 U	1.1 U	1.1 U	1.1 U	1.1 U
Vanadium	-	-	-	-	-	16.1	17.0	16.1	24.9	28.2
Zinc	109	2,200	10,000	10,000	10,000	90.3	95.6	98.5	**110**	**110**

a/ Concentrations are in units of milligrams per kilogram (mg/kg).
b/ NYCRR = New York Codes, Rules and Regulations; SCO = Soil Cleanup Objectives; J = Estimated result; U = Not detected above reporting limit.
c/ Values in bold exceed NYCRR Subpart 375-6.8(a) - Unrestricted Use Soil Cleanup Objectives.
d/ Highlighted values also exceed OU1 Remedial Goals for Ecological Areas.
e/ WSP-OU3-110-0-0.5 is a blind duplicate of WSP-OU3-38-0-0.5
f/ WSP-OU3-108-0-0.5 is a blind duplicate of WSP-OU3-79-0-0.5
g/ WSP-OU3-103-0.5-1 is a blind duplicate of WSP-OU3-80-0-0.5

Table 5

Soil Sampling Results - Volatile Organic Compounds
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID:						Phillipsburg Creek Floodplain		Wallkill River Transects		QA/QC Samples (c)							
						WSP-OU3-11	WSP-OU3-35	WSP-OU3-79		TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	EB110816-A	EB110816-B	EB110816-C	TRIP BLANK
Sample Type:	NYCRR Subpart 375-6.8 - SCO (b)					Primary	Primary	Primary	Duplicate	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Sampling Date:						11/01/16	11/03/16	11/03/16	11/3/16 (d)	10/27/16	11/01/06	11/03/16	11/08/16	11/08/16	11/08/16	11/08/16	11/09/16
Depth (inches):	Unrestricted Use	Residential	Restricted-Residential	Commercial	Industrial	0-6	0-6	0-6	0-6	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	50	100,000	100,000	100,000	500,000	**283 J**	11 U	9.7 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	60	2,900	2,900	4,800	44,000	0.58 U	0.56 U	0.49 U	0.51 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	-	-	-	-	-	5.8 U	5.6 U	4.9 U	5.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	-	-	-	-	-	2.3 U	2.2 U	1.9 U	2.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	-	-	-	-	-	5.8 U	5.6 U	4.9 U	5.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	-	-	-	-	-	5.8 U	5.6 U	4.9 U	5.1 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Butanone (MEK)	120	100,000	100,000	100,000	100,000	2.3 J	11 U	9.7 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	-	-	-	-	-	2.3 U	2.2 U	1.9 U	2.1 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon tetrachloride	760	1,400	1,400	2,400	22,000	2.3 U	2.2 U	1.9 U	2.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	1,100	100,000	100,000	100,000	500,000	2.3 U	2.2 U	1.9 U	2.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	-	-	-	-	-	5.8 U	5.6 U	4.9 U	5.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	370	10,000	10,000	49,000	350,000	2.3 U	2.2 U	1.9 U	2.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	-	-	-	-	-	5.8 U	5.6 UJ	4.9 UJ	5.1 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	-	-	-	-	-	2.3 U	2.2 U	1.9 U	2.1 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dibromo-3-chloropropane	-	-	-	-	-	2.3 U	2.2 U	1.9 U	2.1 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Dibromochloromethane	-	-	-	-	-	2.3 U	2.2 U	1.9 U	2.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	-	-	-	-	-	1.2 U	1.1 U	0.97 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	1,100	100,000	-	-	-	1.2 U	1.1 U	0.97 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	2,400	17,000	-	-	-	1.2 U	1.1 U	0.97 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	1,800	9,800	-	-	-	1.2 U	1.1 U	0.97 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	-	-	-	-	-	5.8 U	5.6 U	4.9 U	5.1 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethane	270	100,000	-	-	-	1.2 U	1.1 U	0.97 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	20	2,300	-	-	-	1.2 U	1.1 U	0.97 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	330	100,000	-	-	-	1.2 U	1.1 U	0.97 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	250	59,000	-	-	-	1.2 U	1.1 U	0.97 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	190	100,000	-	-	-	1.2 U	1.1 U	0.97 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	-	-	-	-	-	2.3 U	2.2 U	1.9 U	2.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	-	-	-	-	-	2.3 U	2.2 U	1.9 U	2.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	-	-	-	-	-	2.3 U	2.2 U	1.9 U	2.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dioxane	100	9,800	-	-	-	39 U	43 U	35 U	37 U	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1,000	30,000	30,000	41,000	390,000	1.2 U	1.1 U	0.97 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Freon 113	-	-	-	-	-	5.8 U	5.6 UJ	4.9 UJ	5.1 UJ	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	-	-	-	-	-	5.8 U	5.6 U	4.9 U	5.1 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	-	-	-	-	-	2.3 U	2.2 U	1.9 U	2.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl Acetate	-	-	-	-	-	5.8 U	5.6 U	4.9 U	5.1 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylcyclohexane	-	-	-	-	-	2.3 U	2.2 U	1.9 U	2.1 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methyl Tert Butyl Ether	930	62,000	62,000	100,000	500,000	1.2 U	1.1 U	0.97 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Methyl-2-pentanone(MIBK)	-	-	-	-	-	5.8 U	5.6 U	4.9 U	5.1 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene chloride	50	51,000	51,000	100,000	500,000	5.8 U	5.6 U	4.9 U	5.1 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U

Table 5

Soil Sampling Results - Volatile Organic Compounds
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID:						Phillipsburg Creek Floodplain		Wallkill River Transects		QA/QC Samples (c)							
						WSP-OU3-11	WSP-OU3-35	WSP-OU3-79		TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	EB110816-A	EB110816-B	EB110816-C	TRIP BLANK
Sample Type:	NYCRR Subpart 375-6.8 - SCO (b)					Primary	Primary	Primary	Duplicate	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Sampling Date:						11/01/16	11/03/16	11/03/16	11/3/16 (d)	10/27/16	11/01/06	11/03/16	11/08/16	11/08/16	11/08/16	11/08/16	11/09/16
Depth (inches):	Unrestricted Use	Residential	Restricted-Residential	Commercial	Industrial	0-6	0-6	0-6	0-6	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	-	-	-	-	-	2.3 U	2.2 U	1.9 U	2.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	-	-	-	-	-	2.3 U	2.2 U	1.9 U	2.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	1,300	5,500	6,000	19,000	150,000	2.3 U	2.2 U	1.9 U	2.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	700	100,000	100,000	100,000	500,000	1.2 U	1.1 U	0.97 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	-	-	-	-	-	5.8 U	5.6 U	4.9 U	5.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	-	-	-	-	-	5.8 U	5.6 U	4.9 U	5.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	680	100,000	-	-	-	2.3 U	2.2 U	1.9 U	2.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	-	-	-	-	-	2.3 U	2.2 U	1.9 U	2.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	470	10,000	10,000	21,000	200,000	1.2 U	1.1 U	0.97 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	-	-	-	-	-	5.8 U	5.6 UJ	4.9 UJ	5.1 UJ	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl chloride	20	210	210	900	13,000	2.3 U	2.2 U	1.9 U	2.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m,p-Xylene	-	-	-	-	-	1.2 U	1.1 U	0.97 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
o-Xylene	-	-	-	-	-	1.2 U	1.1 U	0.97 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylene (total)	260	100,000	100,000	100,000	500,000	1.2 U	1.1 U	0.97 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

a/ Soil concentrations are in units of micrograms per kilogram (ug/kg); Trip blank samples are in units of micrograms per liter (ug/l).
b/ NYCRR = New York Codes, Rules and Regulations; SCO = Soil Cleanup Objectives; J = Estimated result; U = Not detected above reporting limit.
c/ Values in bold exceed NYCRR Subpart 375-6.8(a) - Unrestricted Use Soil Cleanup Objectives.
d/ WSP-OU3-108-0-0.5 is a blind duplicate of WSP-OU3-79-0-0.5

Table 6

Soil Sampling Results - Semivolatile Organic Compounds
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID:						Phillipsburg Creek Floodplain		Wallkill River Transects	
						WSP-OU3-11	WSP-OU3-35	WSP-OU3-79	
Sample Type:	NYCRR Subpart 375-6.8 - SCO (b)					Primary	Primary	Primary	Duplicate
Sampling Date:	Unrestricted		Restricted-			11/01/16	11/03/16	11/03/16	11/03/16
Depth (inches):	Use	Residential	Residential	Commercial	Industrial	0-6	0-6	0-6	0-6
Acenaphthene	20,000	100,000	100,000	500,000	1,000,000	39 U	43 U	35 U	37 U
Acenaphthylene	100,000	100,000	100,000	500,000	1,000,000	39 U	43 U	35 U	37 U
Acetophenone	-	-	-	-	-	200 U	27.7 J	180 U	7.9 U
Anthracene	100,000	100,000	100,000	500,000	1,000,000	39 U	43 U	35 U	37 U
Atrazine	-	-	-	-	-	78 U	86 U	71 U	73 U
Benzo(a)anthracene	1,000	1,000	1,000	5,600	11,000	28.7 J	27.3 J	25.6 J	26.3 J
Benzo(a)pyrene	1,000	1,000	1,000	1,000	1,100	43.2	27.6 J	26.7 J	26.3 J
Benzo(b)fluoranthene	1,000	1,000	1,000	5,600	11,000	59.4	47.1	36.3	36.2 J
Benzo(g,h,i)perylene	100,000	100,000	100,000	500,000	1,000,000	32.6 J	30.7 J	24.4 J	22.4 J
Benzo(k)fluoranthene	800	1000	3,900	56,000	110,000	20.7 J	43 U	35 U	37 U
4-Bromophenyl phenyl ether	-	-	-	-	-	78 U	86 U	71 U	73 U
Butyl benzyl phthalate	-	-	-	-	-	78 U	86 U	71 U	73 U
1,1'-Biphenyl	-	-	-	-	-	78 U	86 U	71 U	73 U
Benzaldehyde	-	-	-	-	-	38.6 J	236	14.1 J	22.7 J
2-Chloronaphthalene	-	-	-	-	-	78 U	86 U	71 U	73 U
4-Chloroaniline	-	-	-	-	-	200 U	210 U	180 U	180 U
Carbazole	-	-	-	-	-	78 U	86 U	71 U	73 U
Caprolactam	-	-	-	-	-	78 U	86 U	71 U	73 U
2-Chlorophenol	-	-	-	-	-	78 U	86 U	71 U	73 U
4-Chloro-3-methyl phenol	-	-	-	-	-	200 UJ	210 U	180 U	180 U
Chrysene	1,000	1,000	3,900	56,000	110,000	39.9	39.5 J	29.9 J	31.3 J
bis(2-Chloroethoxy)methane	-	-	-	-	-	78 U	86 U	71 U	73 U
bis(2-Chloroethyl)ether	-	-	-	-	-	78 U	86 U	71 U	73 U
bis(2-Chloroisopropyl)ether	-	-	-	-	-	78 U	86 U	71 U	73 U
4-Chlorophenyl phenyl ether	-	-	-	-	-	78 U	86 U	71 U	73 U
2,4-Dichlorophenol	-	-	-	-	-	200 U	210 U	180 U	180 U
2,4-Dimethylphenol	-	-	-	-	-	200 UJ	210 U	180 U	180 U
4,6-Dinitro-o-cresol	-	-	-	-	-	200 U	210 U	180 U	180 U
2,4-Dinitrophenol	-	-	-	-	-	200 U	210 U	180 U	180 UJ

Table 6

Soil Sampling Results - Semivolatile Organic Compounds
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID:						Phillipsburg Creek Floodplain		Wallkill River Transects	
						WSP-OU3-11	WSP-OU3-35	WSP-OU3-79	
Sample Type:	NYCRR Subpart 375-6.8 - SCO (b)					Primary	Primary	Primary	Duplicate
Sampling Date:	Unrestricted		Restricted-			11/01/16	11/03/16	11/03/16	11/03/16
Depth (inches):	Use	Residential	Residential	Commercial	Industrial	0-6	0-6	0-6	0-6
2,4-Dinitrotoluene	-	-	-	-	-	39 UJ	43 U	35 U	37 UJ
2,6-Dinitrotoluene	-	-	-	-	-	39 UJ	43 U	35 U	37 U
3,3'-Dichlorobenzidine	-	-	-	-	-	78 U	86 U	71 U	73 U
Dibenzo(a,h)anthracene	330	330	330	560	1,100	39 U	43 U	35 U	37 U
Dibenzofuran	7,000	14,000	59,000	350,000	1,000,000	78 U	86 U	71 U	73 U
Di-n-butyl phthalate	-	-	-	-	-	78 U	86 U	71 U	73 U
Di-n-octyl phthalate	-	-	-	-	-	78 UJ	86 U	71 U	73 U
Diethyl phthalate	-	-	-	-	-	78 U	86 U	71 U	73 U
Dimethyl phthalate	-	-	-	-	-	78 U	86 U	71 U	73 U
bis(2-Ethylhexyl)phthalate	-	-	-	-	-	78 U	86 U	71 U	73 U
Fluoranthene	100,000	100,000	100,000	500,000	1,000,000	60.9	76.6	41.1	51.9
Fluorene	30,000	100,000	100,000	500,000	1,000,000	39 U	43 U	35 U	37 U
Hexachlorobenzene	-	-	-	-	-	78 U	86 U	71 U	73 U
Hexachlorobutadiene	-	-	-	-	-	39 U	43 U	35 U	37 U
Hexachlorocyclopentadiene	-	-	-	-	-	390 UJ	430 U	350 U	370 UJ
Hexachloroethane	-	-	-	-	-	200 U	210 U	180 U	180 U
Indeno(1,2,3-cd)pyrene	500	500	500	5600	11,000	32.1 J	22 J	21.1 J	20.5 J
Isophorone	-	-	-	-	-	78 U	86 U	71 U	73 U
2-Methylnaphthalene	-	-	-	-	-	78 U	86 U	71 U	73 U
2-Methylphenol	-	-	-	-	-	78 U	86 U	71 U	73 U
3&4-Methylphenol	-	-	-	-	-	78 U	86 U	71 U	73 U
Naphthalene	12,000	100,000	100,000	500,000	1,000,000	39 U	43 U	35 U	37 U
2-Nitroaniline	-	-	-	-	-	200 UJ	210 U	180 U	180 U
3-Nitroaniline	-	-	-	-	-	200 U	210 U	180 U	180 U
4-Nitroaniline	-	-	-	-	-	200 U	210 U	180 U	180 U
Nitrobenzene	-	-	-	-	-	78 U	86 U	71 U	73 U
2-Nitrophenol	-	-	-	-	-	200 UJ	210 U	180 U	180 U
4-Nitrophenol	-	-	-	-	-	390 UJ	430 U	350 U	370 U
N-Nitroso-di-n-propylamine	-	-	-	-	-	78 U	86 U	71 U	73 U

Table 6

Soil Sampling Results - Semivolatile Organic Compounds
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID:						Phillipsburg Creek Floodplain		Wallkill River Transects	
						WSP-OU3-11	WSP-OU3-35	WSP-OU3-79	
Sample Type:	NYCRR Subpart 375-6.8 - SCO (b)					Primary	Primary	Primary	Duplicate
Sampling Date:	Unrestricted		Restricted-			11/01/16	11/03/16	11/03/16	11/03/16
Depth (inches):	Use	Residential	Residential	Commercial	Industrial	0-6	0-6	0-6	0-6
N-Nitrosodiphenylamine	-	-	-	-	-	200 U	210 U	180 U	180 U
Pentachlorophenol	800	2,400	6,700	6,700	55,000	160 U	170 U	140 U	150 U
Phenanthrene	100,000	100,000	100,000	500,000	1,000,000	30.7 J	65.9	16.9 J	29.8 J
Phenol	33,000	100,000	100,000	500,000	1,000,000	78 U	63.2 J	71 U	73 U
Pyrene	100,000	100,000	100,000	500,000	1,000,000	54.2	63.8	39.7	51.6
1,2,4,5-Tetrachlorobenzene	-	-	-	-	-	200 U	210 U	180 U	180 U
2,3,4,6-Tetrachlorophenol	-	-	-	-	-	200 U	210 U	180 U	180 U
2,4,5-Trichlorophenol	-	-	-	-	-	200 U	210 U	180 U	180 U
2,4,6-Trichlorophenol	-	-	-	-	-	200 U	210 U	180 U	180 U

a/ Concentrations are in units of micrograms per kilogram (ug/kg).

b/ NYCRR = New York Codes, Rules and Regulations; SCO = Soil Cleanup Objectives; J = Estimated result; U = Not detected above reporting limit.

c/ Values in bold exceed NYCRR Subpart 375-6.8(a) - Unrestricted Use Soil Cleanup Objectives.

d/ WSP-OU3-108-0-0.5 is a blind duplicate of WSP-OU3-79-0-0.5

Table 7

Soil Sampling Results - Pesticides and Polychlorinated Biphenyls
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID:						Phillipsburg Creek Floodplain		Wallkill River Transects	
						WSP-OU3-11	WSP-OU3-35	WSP-OU3-79 (e)	
Sample Type:	NYCRR Subpart 375-6.8 SCO (b)					Primary	Primary	Primary	Duplicate
Sampling Date:	Unrestricted		Restricted-			11/01/16	11/03/16	11/03/16	11/03/16
Depth (inches):	Use	Residential	Residential	Commercial	Industrial	0-6	0-6	0-6	0-6
Pesticides (µg/kg)									
Aldrin	5	19	97	680	1,400	0.76 U	0.77 U	0.65 U	0.68 U
alpha-BHC	20	97	480	3,400	6,800	0.76 U	0.77 U	0.65 U	0.68 U
beta-BHC	36	72	360	3,000	14,000	0.76 U	0.77 U	0.65 U	0.68 U
delta-BHC	40	100	100	500	1,000	0.76 U	0.77 U	0.65 U	0.68 U
gamma-BHC (Lindane)	100	280	1,300	9,200	23,000	0.76 U	0.77 U	0.65 U	0.68 U
alpha-Chlordane	94	910	4,200	24,000	47,000	0.76 U	0.77 U	0.65 U	1.3
gamma-Chlordane	-	-	-	-	-	0.76 U	0.77 U	0.65 U	1.9 J
Dieldrin	5	39	200	1,400	2,800	0.76 U	0.77 U	1.2	1.5
4,4'-DDD	3.3	2,600	13,000	92,000	180,000	0.76 U	0.77 U	**5.4**	**6.7**
4,4'-DDE	3.3	1,800	8,900	62,000	120,000	**6.4**	0.96	**6.3**	**9.3** J
4,4'-DDT	3.3	1,700	7,900	47,000	94,000	2.4	0.87	**4.0 J**	**3.9**
Endrin	14	2,200	11,000	89,000	410,000	0.76 U	0.77 U	0.65 U	0.68 U
Endrin Ketone	-	-	-	-	-	0.76 UJ	0.77 U	0.65 U	0.68 U
Endosulfan sulfate	2,400	4,800	4,800	24,000	200,000	0.76 U	0.77 U	0.65 U	0.68 U
Endrin aldehyde	-	-	-	-	-	0.76 U	0.77 U	0.65 U	0.68 UJ
Endosulfan-I	2,400	4,800	24,000	200,000	920,000	0.76 U	0.77 U	0.65 U	0.68 U
Endosulfan-II	2,400	4,800	24,000	200,000	920,000	0.76 U	0.77 U	0.65 U	0.68 U
Heptachlor	42	420	2,100	15,000	29,000	0.76 U	0.77 U	0.65 U	0.68 U
Heptachlor epoxide	-	-	-	-	-	0.76 U	0.77 U	0.65 U	0.68 U
Methoxychlor	-	-	-	-	-	1.5 U	1.5 U	1.3 U	1.4 U
Toxaphene	-	-	-	-	-	19 U	19 U	16 U	17 U

Table 7

Soil Sampling Results - Pesticides and Polychlorinated Biphenyls
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID:						Phillipsburg Creek Floodplain		Wallkill River Transects	
						WSP-OU3-11	WSP-OU3-35	WSP-OU3-79 (e)	
Sample Type:	NYCRR Subpart 375-6.8 SCO (b)					Primary	Primary	Primary	Duplicate
Sampling Date:	Unrestricted		Restricted-			11/01/16	11/03/16	11/03/16	11/03/16
Depth (inches):	Use	Residential	Residential	Commercial	Industrial	0-6	0-6	0-6	0-6
PCBs (µg/kg)									
Aroclor 1016						38 U	38 U	33 U	34 U
Aroclor 1221						38 U	38 U	33 U	34 U
Aroclor 1232						38 U	38 U	33 U	34 U
Aroclor 1242	100 (d)	1,000 (d)	1,000 (d)	1,000 (d)	25,000 (d)	38 U	38 U	33 U	34 U
Aroclor 1248						38 U	38 U	33 U	34 U
Aroclor 1254						38 U	38 U	33 U	34 U
Aroclor 1260						38 U	38 U	33 U	34 U

a/ Concentrations are in units of micrograms per kilogram (ug/kg)
b/ NYCRR = New York Codes, Rules and Regulations; SCO = Soil Cleanup Objectives; J = Estimated result; U = Not detected above reporting limi
c/ Values in bold exceed NYCRR Subpart 375-6.8(a) - Unrestricted Use Soil Cleanup Objectives
d/ Aroclor specific criteria not established. Total PCB criterion is provided
e/ WSP-OU3-108-0-0.5 is a blind duplicate of WSP-OU3-79-0-0.5

Table 8

Sediment Sampling Results - Lead and Arsenic
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Depth (inches):		0-3		0-6		6-12		
Metals (mg/kg)	Date	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Notes
Phillipsburg Creek								
WSP-SED-01	09/23/08	-	**1,490**	-	-	-	-	
WSP-SED-27	12/16/09	-	31.5	-	-	-	-	
WSP-SED-28	12/16/09	-	**827**	-	-	-	-	
WSP-SED-29	12/16/09	**11.3**	**155**	-	-	-	-	
WSP-SED-30	12/16/09	-	**492**	-	-	-	-	
WSP-SED-31	12/16/09	-	**614**	-	-	-	-	
WSP-SED-32	12/16/09 11/02/16	-	**4,500**	7.9	**80.3**	5.8	20.9	(d)
WSP-SED-33	12/16/09	-	**1,810**	-	-	-	-	
WSP-SED-34	12/16/09	-	**784**	-	-	-	-	
WSP-SED-35	12/16/09	-	**292**	-	-	-	-	
WSP-SED-36	12/16/09	-	**1,450**	-	-	-	-	
WSP-SED-37	12/16/09 11/02/16	-	**3,170**	7.7	**125**	4.9	27.0	(e)
WSP-SED-38	10/20/11	8.3	**37.3**	-	-	-	-	
WSP-SED-39	10/20/11	4.3	19.7	-	-	-	-	
	10/20/11	**10.5**	25.6	-	-	-	-	(f)
WSP-SED-40	10/20/11	4.4	22.0	-	-	-	-	
WSP-SED-41	10/20/11	6.7	**93.4**	-	-	-	-	
WSP-SED-42	10/20/11	5.8	**195**	-	-	-	-	
WSP-SED-43	10/20/11	4.3	23.5	-	-	-	-	
WSP-SED-44	01/17/13	8.2	25.9	-	-	-	-	
WSP-SED-45	01/17/13	**22.0**	**46.8**	-	-	-	-	
WSP-SED-46	01/17/13	**41.3**	**106**	-	-	-	-	
WSP-SED-47	01/17/13	**10.9**	23.8	-	-	-	-	
WSP-SED-I84-01	10/07/08	**31.6**	**699**	-	-	-	-	
WSP-SED-I84-02	10/07/08	**-**	**2,110**	-	-	-	-	
WSP-SED-48	01/17/13	**22.7**	**955**	-	-	-	-	
WSP-SED-49	01/17/13	**16.7**	**707**	-	-	-	-	
WSP-SED-50	01/17/13	**49**	**2,790**	-	-	-	-	
WSP-SED-51	01/17/13 11/03/16	**159**	**5,890**	**26.0**	**191**	-	-	(g)
	11/03/16			**38.9**	**552**			(h)
WSP-SED-52	01/17/13 11/03/16	**98.7**	**3,420**	**10.3**	**75.9**	-	-	(i)
WSP-SED-53	01/17/13	**20.4**	**772**	-	-	-	-	
	01/17/13	**20.6**	**891**	-	-	-	-	(j)
WSP-SED-54	01/17/13	**18.3**	**287**	-	-	-	-	
WSP-SED-55	05/09/14	5.6	17.0	-	-	-	-	
WSP-SED-56	05/09/14	**12.5**	**270**	-	-	-	-	
	05/09/14	**10.6**	**237**	-	-	-	-	(k)

Table 8

Sediment Sampling Results - Lead and Arsenic
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Depth (inches):		0-3		0-6		6-12		
Metals (mg/kg)	Date	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Notes
Phillipsburg Creek (Continued)								
WSP-SED-57	05/09/14							
	11/10/16	**14.6**	**317**	**13.7**	**148**	**22.5**	**209**	(l)
	11/10/16			**12.0**	**144**	-	-	(m)
WSP-SED-58	05/09/14	**12.6**	**365**	-	-	-	-	
WSP-SED-59	05/09/14	**13.5**	**180**	-	-	-	-	
WSP-SED-60	05/09/14	7.4	22.1	-	-	-	-	
WSP-SED-61	05/09/14	**13.5**	**305**	-	-	-	-	
WSP-SED-62	05/09/14	9.4	**98.4**	-	-	-	-	
WSP-SED-63	05/09/14	**10.6**	**92.8**	-	-	-	-	
WSP-SED-64	05/09/14	8.1	**124**	-	-	-	-	
WSP-SED-65	10/25/16	9.0	**92.9**	-	-	-	-	
WSP-SED-66	09/02/15	**10.2**	**98.2**	-	-	-	-	
WSP-SED-67	09/02/15	**13.0**	**108**	-	-	-	-	
WSP-SED-68	09/02/15	10.0	**57.7**	-	-	-	-	
Wallkill River Transects								
WSP-SED-70	10/25/16							
	11/04/16	-	-	8.3	13.7	7.1	14.9	(n)
WSP-SED-71	10/25/16	-	-	8.4	12.2	-	-	
WSP-SED-72	10/25/16	-	-	6.5	18.6	-	-	
WSP-SED-73	10/25/16	-	-	**10.5**	14.3	-	-	
WSP-SED-73A	11/04/16	-	-	-	-	**12.4**	**70.3**	
WSP-SED-74	10/25/16	-	-		11.1	-	-	
WSP-SED-75	10/25/16	-	-	6.8	11.6	-	-	
WSP-SED-76	10/26/16							
	11/04/16	-	-	**11.4**	**39.0**	**12.0**	**76.1**	(o)
WSP-SED-77	10/26/16	-	-	7.9	9.6	-	-	
WSP-SED-78	10/26/16	-	-	**11.0**	28.2	-	-	
WSP-SED-79	10/26/16	-	-	7.3	10.2	-	-	
WSP-SED-79A	11/04/16	-	-	-	-	8.8	14.7 J	
WSP-SED-80	10/26/16	-	-	5.8	11.4	-	-	
	10/26/16	-	-	**12.4**	17.1	-	-	
WSP-SED-81	10/26/16	-	-	8.3	17.6	-	-	
WSP-SED-82	10/26/16	-	-	7.3	12.5	-	-	
WSP-SED-83	10/26/16	-	-	8.6	15.5	-	-	
WSP-SED-84	10/26/16	-	-	**11.4**	**107**	-	-	

Table 8

Sediment Sampling Results - Lead and Arsenic
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Depth (inches):		0-3		0-6		6-12		
Metals (mg/kg)	Date	Arsenic	Lead	Arsenic	Lead	Arsenic	Lead	Notes
Wallkill River Transects								
WSP-SED-85	10/27/16	-	-	7.3	14.2	-	-	
	10/27/16	-	-	8.9	18.4	-	-	
WSP-SED-86	10/27/16	-	-	7.2	**40.9**	-	-	
WSP-SED-87	10/26/16	-	-	**10.7**	18.6	-	-	

a/ mg/kg = milligrams per kilogram; J = Estimated result; U = Not detected above reporting limit
b/ Values in bold exceed NYSDEC's Class A Freshwater Sediment Guidance Value of <10 mg/kg for arsenic or <36 mg/kg for lead.
c/ Highlighted values also exceed NYSDEC's Class B Freshwater Sediment Guidance Value range of 10-33 mg/kg for arsenic and 36-130 mg/kg for lead.
d/ WSP-SED-32 from 0-3 inches collected on 12/16/09; WSP-SED-32 from 0-6 and 6-12 inches collected on 11/02/16
e/ WSP-SED-37 from 0-3 inches collected on 12/16/09; WSP-SED-37 from 0-6 and 6-12 inches collected on 11/02/16
f/ WSP-SED-390 is a blind duplicate of WSP-SED-39
g/ WS-SED-51 from 0-3 inches collected on 01/17/13; WSP-SED-51 from 0-6 inches collected on 11/03/16
h/ WSP-SED-113-0-0.5 is a blind duplicate of WSP-SED-51-0-0.5
i/ WSP-SED-52 from 0-3 inches collected on 01/17/13; WSP-SED-52 from 0-6 collected on 11/03/16
j/ WSP-SED-530 is a blind duplicate of WSP-SED-53
k/ WSP-SED-560 is a blind duplicate of WSP-SED-56
l/ WSP-SED-57 from 0-3 inches collected on 05/09/14; WSP-SED-57 from 0-6 and 6-12 inches collected on 11/02/16
m/ WSP-SED-114-0-0.5 is a blind duplicate of WSP-SED-57-0-0.5
n/ WSP-SED-70 from 0-6 inches collected on 10/25/16; WSP-SED-70 from 6-12 inches collected on 11/04/16
o/ WSP-SED-76 from 0-6 inches collected on 10/26/16; WSP-SED-76 from 6-12 inches collected on 11/04/16
p/ WSP-SED-100-0-0.5 is a blind duplicate of WSP-SED-76-0-0.5

Table 9

Sediment Sampling Results - Target Analyte List Metals
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID:	NYSDEC's Freshwater Sediment Guidance Values (b)			Phillipsburg Creek												
				WSP-SED-I84-01	WSP-SED-29	WSP-SED-38	WSP-SED-39		WSP-SED-40	WSP-SED-41	WSP-SED-42	WSP-SED-43	WSP-SED-52	WSP-SED-53	
Sample Type:				Primary	Primary	Primary	Primary	Duplicate	Primary	Primary	Primary	Primary	Primary	Primary	Duplicate
Depth (inches):				0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-6	0-3	0-3
Sampling Date:	Class A	Class B	Class C	10/07/08	12/16/09	10/20/11	10/20/11	10/20/11 (c)	10/20/11	10/20/11	10/20/11	10/20/11	11/03/16	01/17/13	01/17/13 (d)
Aluminum	-	-	-	10,400	11,800	11,900	9,380	8,850	9,600	22,000	22,000	9,160	12,000	15,600	17,600
Antimony	-	-	-	8.7	1.5 U	2.7 U	2.7 U	2.7 U	2.8 U	3.3 UJ	3.4 U	2.7 U	2.8 U	12.3	13
Arsenic	<10	10-33	>33	**31.6**	**11.3**	8.3	4.3	**10.5**	4.4	6.7	5.8	4.3	**10.3**	**20.4**	**20.6**
Barium	-	-	-	69.3	42.2	70.3	54.8	54	44.1	107	130	45.5	79.3	129	142
Beryllium	-	-	-	0.99 U	0.61 J	0.68	0.46	0.85	0.54	0.92	1	0.51	0.72	1.5	1.5
Cadmium	<1	1-5	>5	2.3 U	0.5 J	0.33	0.33 U	0.33 U	0.36 U	0.41 U	0.73	0.34 U	0.70 U	**2.6**	**2.9**
Calcium	-	-	-	2,830	5,220	3,440	1,880	4,310	3,180	2,120	3,620	3,660	15,100	5,660	5,610
Chromium	<43	43-110	>110	18.3	18.9	18.3	13.2	12.2	13.7	23.5	24.7	13.4	18.6	23.1	24.2
Cobalt	-	-	-	14.4	10.8	8.9	7.5	7.5	7.4	10.4	9.4	7.2	11.1	13.9	15.1
Copper	<32	32-150	>150	26.9	28.2	24 J	13.6 J	12 J	15.2 J	17.9 J	25.2 J	15.8 J	28	**45.4**	**50.9**
Iron	-	-	-	28,500	27,300	24,600	18,900	32,000	20,300	25,500	23,600	19,200	22,000	21,900	24,700
Lead	<36	36-130	>130	**699**	**155**	**37.3**	19.7	25.6	22	**93.4**	**195**	23.5	**75.9**	**772**	**891**
Magnesium	-	-	-	4,940	6,980	4,370	3,690	3,430	4,550	3,910	4,390	4,180	6,020	4,250	4,770
Manganese	-	-	-	1,630	1,050	789	805	712	545	1,760	1,080	530	606	3,500	3,570
Mercury	<0.2	0.2-1	>1	-	-	0.042 U	0.043 U	0.041 U	0.043 U	0.065	0.084	0.043 U	0.035 U	0.074 U	0.078 U
Nickel	<23	23-49	>49	**29.5**	**28.1**	19.4 J	15.3 J	13.7 J	17.1 J	18 J	21.4 J	16.3 J	**26.8**	**26.6**	**29 J**
Potassium	-	-	-	829	654 J	1,550	1,300	1,300 U	1,470	1,610 J	1,900	1,400 U	1,990	2,300 U	2,500 U
Selenium	-	-	-	4.1 U	3.6 U	2.7 U	2.7 U	2.7 U	2.8 U	3.3 U	3.4 U	2.7 U	2.8 U	4.5 U	5 U
Silver	<1	1-2.2	>2.2	1.3 U	1.5 U	0.67 U	0.66 U	0.66 U	0.71 U	0.82 U	0.84 U	0.68 U	0.7 U	**1.1**	1.3 U
Sodium	-	-	-	100	96.3 J	1,300 U	1,300 U	1,300 U	1,400 U	1,600 U	1,700 U	1,400 U	1,400 U	2,300 U	2,500 U
Thallium	-	-	-	14 U	1 U	1.3 U	1.3 U	1.3 U	1.4 U	3.3 U	1.7 U	1.4	1.4 U	4.5 U	5.0 U
Vanadium	-	-	-	18.5	16.2	21.2	14.9	16.7	14.2	32.9	32.3	14.5	20.3	25.8	27.8
Zinc	<120	120-460	>460	**182**	108	**332**	**184**	**174**	94.7	117	**185**	90	76.8	**227**	**258**

Table 9

Sediment Sampling Results - Target Analyte List Metals
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID:	NYSDEC's Freshwater Sediment Guidance Values (b)			Phillipsburg Creek			Wallkill River Transects			
				WSP-SED-56		WSP-SED-67	WSP-SED-80		WSP-SED-85	
Sample Type:				Primary	Duplicate	Primary	Primary	Duplicate	Primary	Duplicate
Sampling Date:				05/09/14	05/09/14 (e)	09/02/15	10/26/16	10/26/16 (f)	10/27/16	10/27/16 (g)
Depth (inches):	Class A	Class B	Class C	0-3	0-3	0-3	0-6	0-6	0-6	0-6
Aluminum	-	-	-	12,500	11,100	13,800 J	8,870 J	13,700	12,400	11,700
Antimony	-	-	-	3.5	3.1	2.4 U	2.0 UJ	2.6 U	4.2 UJ	1.9 UJ
Arsenic	<10	10-33	>33	**12.5**	**10.6**	**13.0**	5.8	**12.4**	7.3	8.9
Barium	-	-	-	92.2	74.2	63.2	34.9	85.7	45.5	47.4
Beryllium	-	-	-	0.70	0.64	0.74	0.42	0.68	0.66	0.61
Cadmium	<1	1-5	>5	0.90	0.74	0.84	0.5 U	0.66 U	1.0 U	0.47 U
Calcium	-	-	-	5,900	5,540	2,910	6,850 J	6,300 J	4,550 J	4,450 J
Chromium	<43	43-110	>110	18.4	16.5	19.7	14.2	22.0	20.4	19.2
Cobalt	-	-	-	12.8	11.0	13.3	7.5	13.3	11.8	10.8
Copper	<32	32-150	>150	26.5	24.2	30.4	13.4	22.4	24.0	19.9
Iron	-	-	-	26,700	23,800	28,000	18,000	32,200	29,800 J	31,400 J
Lead	<36	36-130	>130	**270**	**237**	**108**	11.4	17.1	14.2	18.4
Magnesium	-	-	-	5,140	4,490	6,530	5,600 J	9,330 J	8,040 J	7,410 J
Manganese	-	-	-	1,510	1,460	1,240 J	395 J	1,060 J	738 J	724 J
Mercury	<0.2	0.2-1	>1	0.037 U	0.041 U	0.035 U	0.029 U	0.033 U	0.033 U	0.038 U
Nickel	<23	23-49	>49	**25.6**	22.7	**29.0**	18.0	**29.0**	**29.6**	**25.4**
Potassium	-	-	-	1,930	1,977	1,420 J	1,010 J	1,320 J	1,020	1,070
Selenium	-	-	-	2.5 U	2.7 U	2.4 UJ	2.0 U	2.6 U	4.2 U	1.9 U
Silver	<1	1-2.2	>2.2	**1.1**	0.97	0.59 U	0.5 U	**6.6**	**2.3**	0.95 U
Sodium	-	-	-	1,300 U	1,400 U	1,200 U	1,000 U	1,300 U	1,000 U	950 U
Thallium	-	-	-	3.0 U	3.0 U	1.2 U	1.0 U	1.3 U	2.1 U	0.95 U
Vanadium	-	-	-	20.4	18.9	20.3	13.9	21.7	19.2	18.0
Zinc	<120	120-460	>460	**141 J**	**136 J**	120	84.9	**133**	116	108

a/ Concentrations are in units of milligrams per kilogram (mg/kg). J = Estimated result; U = Not detected above reporting limit; NC = Not collected due to auger refusal
b/ Values in bold exceed NYSDEC's Class A Freshwater Sediment Guidance Value. Highlighted values also exceed NYSDEC Class B Freshwater Sediment Guidance Value.
c/ WSP-SED-390 is a blind duplicate of WSP-SED-39
d/ WSP-SED-530 is a blind duplicate of WSP-SED-53
e/ WSP-SED-560 is a blind duplicate of WSP-SED-56
f/ WSP-SED-101-0-0.5 is a blind duplicate of WSP-SED-80-0-0.5
g/ WSP-SED-102-0-0.5 is a blind duplicate of WSP-SED-85-0-0.5

Table 10

Sediment Sampling Results - Volatile Organic Compounds
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID:	NYSDEC's Freshwater Sediment Guidance (a)			Wallkill River Transects	
				WSP-SED-85	
Sample Type:				Primary	Duplicate
Sampling Date:				10/27/16	10/27/16 (c)
Depth (inches):	Class A	Class B	Class C	0-6	0-6
Acetone	-	-	-	17.9	12 U
Benzene	<530	530-1,900	>1,900	0.48 U	0.61 U
Bromochloromethane	-	-	-	4.8 U	6.1 U
Bromodichloromethane	-	-	-	1.9 U	2.4 U
Bromoform	-	-	-	4.8 U	6.1 U
Bromomethane	-	-	-	4.8 UJ	6.1 UJ
2-Butanone (MEK)	-	-	-	9.6 U	12 U
Carbon disulfide	-	-	-	1.9 U	2.4 U
Carbon tetrachloride	<1,070	1,070-9,600	>9,600	1.9 U	2.4 U
Chlorobenzene	<200	200-1,700	>1,700	1.9 U	2.40 U
Chloroethane	-	-	-	4.8 U	6.1 U
Chloroform	-	-	-	1.9 U	2.4 U
Chloromethane	-	-	-	4.8 U	6.1 U
Cyclohexane	-	-	-	1.9 U	2.4 U
1,2-Dibromo-3-chloropropane	-	-	-	1.9 U	2.4 U
Dibromochloromethane	-	-	-	1.9 U	2.4 U
1,2-Dibromoethane	-	-	-	0.96 U	1.2 U
1,2-Dichlorobenzene	<280	280-2,500	2,500	0.96 U	1.2 U
1,3-Dichlorobenzene	<1,800	1,800-7,100	>7,100	0.96 U	1.2 U
1,4-Dichlorobenzene	<720	720-3,300	>3,300	0.96 U	1.2 U
Dichlorodifluoromethane	-	-	-	4.8 U	6.1 U
1,1-Dichloroethane	<520	520-4,700	>4,700	0.96 U	1.2 U
1,2-Dichloroethane	-	-	-	0.96 U	1.2 U
1,1-Dichloroethene	-	-	-	0.96 U	1.2 U
cis-1,2-Dichloroethene	-	-	-	0.96 U	1.2 U
trans-1,2-Dichloroethene	<1,200	1,200-11,000	>11,000	0.96 U	1.2 U
1,2-Dichloropropane	-	-	-	1.9 U	2.4 U
cis-1,3-Dichloropropene	-	-	-	1.9 U	2.4 U
trans-1,3-Dichloropropene	-	-	-	1.9 U	2.4 U
1,4-Dioxane	-	-	-	35 U	38 U
Ethylbenzene	<430	430-3,700	>3,700	0.96 U	1.2 U
Freon 113	-	-	-	4.8 U	6.1 U
2-Hexanone	-	-	-	4.8 U	6.1 U
Isopropylbenzene	<210	210-1,800	>1,800	1.9 U	2.4 U
Methyl Acetate	-	-	-	4.8 U	6.1 U
Methylcyclohexane	-	-	-	1.9 U	2.4 U

Table 10

Sediment Sampling Results - Volatile Organic Compounds
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID:	NYSDEC's Freshwater Sediment Guidance (a)			Wallkill River Transects	
				WSP-SED-85	
Sample Type:				Primary	Duplicate
Sampling Date:				10/27/16	10/27/16 (c)
Depth (inches):	Class A	Class B	Class C	0-6	0-6
Methyl Tert Butyl Ether	-	-	-	0.96 U	1.2 U
4-Methyl-2-pentanone(MIBK)	-	-	-	4.8 U	6.1 U
Methylene chloride	-	-	-	4.8 U	6.1 U
Styrene	-	-	-	1.9 U	2.4 U
1,1,2,2-Tetrachloroethane	<2,800	2,800-5,400	>5,400	1.9 U	2.4 U
Tetrachloroethene	<16,000	16,000-57,000	>57,000	1.9 U	2.4 U
Toluene	<930	930-4,500	>4,500	1.5	1.9
1,2,3-Trichlorobenzene	<230	230-2,800	>2,800	4.8 U	6.1 U
1,2,4-Trichlorobenzene	<35,000	35,000-55,000	>55,000	4.8 U	6.1 U
1,1,1-Trichloroethane	<1,900	1,900-3,500	>3,500	1.9 U	2.4 U
1,1,2-Trichloroethane	-	-	-	1.9 U	2.4 U
Trichloroethene	< 1,800	1,800 - 8,600	> 8,600	0.96 U	1.2 U
Trichlorofluoromethane	-	-	-	4.8 U	6.1 U
Vinyl chloride	-	-	-	1.9 U	2.4 U
m,p-Xylene	-	-	-	0.96 U	1.2 U
o-Xylene	-	-	-	0.96 U	1.2 U
Xylene (total)	< 590	590 - 5,200	> 5,200	0.96 U	1.2 U

a/ Concentrations are in units of micrograms per kilogram (ug/kg).
b/ J = Estimated result; U = Not detected above reporting limit.
c/ Values in bold exceed NYSDEC's Class A Freshwater Sediment Guidance Value.
d/ WSP-SED-102-0-0.5 is a blind duplicate of WSP-SED-85-0-0.5

Table 11

Sediment Sampling Results - Semivolatile Organic Compounds
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID:	NYSDEC's Freshwater Sediment Guidance Values (a)			Wallkill River Transects	
				WSP-SED-85	
Sample Type:				Primary	Duplicate
Sampling Date:				10/27/16	10/27/16 (d)
Depth (inches):	Class A	Class B	Class C	0-6	0-6
2-Chlorophenol	-	-	-	69 U	77 U
4-Chloro-3-methyl phenol	-	-	-	170 U	190 U
2,4-Dichlorophenol	-	-	-	170 U	190 U
2,4-Dimethylphenol	-	-	-	170 U	190 U
2,4-Dinitrophenol	-	-	-	170 U	190 U
4,6-Dinitro-o-cresol	-	-	-	170 U	190 U
2-Methylphenol	-	-	-	69 U	77 U
3&4-Methylphenol	-	-	-	69 U	77 U
2-Nitrophenol	-	-	-	170 U	190 U
4-Nitrophenol	-	-	-	350 U	380 U
Pentachlorophenol	<14,000	14,000-19,000	>19,000	140 U	150 U
Phenol	-	-	-	69 U	77 U
2,3,4,6-Tetrachlorophenol	-	-	-	170 U	190 U
2,4,5-Trichlorophenol	-	-	-	170 U	190 U
2,4,6-Trichlorophenol	-	-	-	170 U	190 U
Acenaphthene	-	-	-	35 U	38 U
Acenaphthylene	-	-	-	35 U	38 U
Acetophenone	-	-	-	170 U	190 U
Anthracene	-	-	-	35 U	38 U
Atrazine	-	-	-	69 U	77 U
Benzo(a)anthracene	-	-	-	43.5	38 U
Benzo(a)pyrene	-	-	-	43.8	38 U
Benzo(b)fluoranthene	-	-	-	57.9	38 U
Benzo(g,h,i)perylene	-	-	-	24.6 J	38 U
Benzo(k)fluoranthene	-	-	-	19.8 J	38 U
4-Bromophenyl phenyl ether	-	-	-	69 U	77 U
Butyl benzyl phthalate	-	-	-	69 U	77 U
1,1'-Biphenyl	-	-	-	69 U	77 U
Benzaldehyde	-	-	-	170 U	190 U
2-Chloronaphthalene	-	-	-	69 U	77 U
4-Chloroaniline	-	-	-	170 U	190 U
Carbazole	-	-	-	69 U	77 U
Caprolactam	-	-	-	69 U	77 U
Chrysene	-	-	-	37.7	38 U
bis(2-Chloroethoxy)methane	-	-	-	69 U	77 U
bis(2-Chloroethyl)ether	-	-	-	69 U	77 U
bis(2-Chloroisopropyl)ether	-	-	-	69 U	77 U
4-Chlorophenyl phenyl ether	-	-	-	69 U	77 U
2,4-Dinitrotoluene	-	-	-	35 U	38 U

Table 11

Sediment Sampling Results - Semivolatile Organic Compounds
Operable Unit 3 Remedial Investigation
Revere Smelting & Refining
Middletown, New York

Sample ID:	NYSDEC's Freshwater Sediment Guidance Values (a)			Wallkill River Transects	
				WSP-SED-85	
Sample Type:				Primary	Duplicate
Sampling Date:				10/27/16	10/27/16 (d)
Depth (inches):	Class A	Class B	Class C	0-6	0-6
2,6-Dinitrotoluene	-	-	-	35 U	38 U
3,3'-Dichlorobenzidine	-	-	-	69 U	77 U
Dibenzo(a,h)anthracene	-	-	-	35 U	38 U
Dibenzofuran	-	-	-	69 U	77 U
Di-n-butyl phthalate	-	-	-	69 U	77 U
Di-n-octyl phthalate	-	-	-	69 U	77 U
Diethyl phthalate	-	-	-	69 U	77 U
Dimethyl phthalate	-	-	-	69 U	77 U
bis(2-Ethylhexyl)phthalate	< 360,000	> 360,000	-	69 U	77 U
Fluoranthene	-	-	-	61.5	38 U
Fluorene	-	-	-	35 U	38 U
Hexachlorobenzene	-	-	-	69 U	77 U
Hexachlorobutadiene	< 1,200	1,200 - 12,000	> 12,000	35 U	38 U
Hexachlorocyclopentadiene	< 810	810 - 8,100	> 8,100	350 U	380 U
Hexachloroethane	-	-	-	170 U	190 U
Indeno(1,2,3-cd)pyrene	-	-	-	33.0 J	38 U
Isophorone	-	-	-	69 U	77 U
2-Methylnaphthalene	-	-	-	69 U	77 U
2-Nitroaniline	-	-	-	170 U	190 U
3-Nitroaniline	-	-	-	170 U	190 U
4-Nitroaniline	-	-	-	170 U	190 U
Naphthalene	-	-	-	35 U	38 U
Nitrobenzene	-	-	-	69 U	77 U
N-Nitroso-di-n-propylamine	-	-	-	69 U	77 U
N-Nitrosodiphenylamine	-	-	-	170 U	190 U
Phenanthrene	-	-	-	14.3 J	38 U
Pyrene	-	-	-	75.7	38 U
1,2,4,5-Tetrachlorobenzene	< 3,000	3,000 - 14,000	>14,000	170 U	190 U
Total PAH	<4,000	4,000-35,000	>35,000	NA	NA

a/ Concentrations are in units of micrograms per kilogram (ug/kg).
b/ J = Estimated result; U = Not detected above reporting limit.
c/ Values in bold exceed NYSDEC's Class A Freshwater Sediment Guidance Value.
d/ WSP-SED-102-0-0.5 is a blind duplicate of WSP-SED-85-0-0.5

Table 12

Sediment Sampling Results - Pesticides and Polychloricated Biphenyls
Operable Unit 3 Remedial Investigation
Revere Smelting Refining
Middletown, New York

Sample ID:				Wallkill River Transects	
				WSP-SED-85	
Sample Type:	NYSDEC's Freshwater Sediment Guidance Values (a)			Primary	Duplicate
Sampling Date:				10/27/16	10/27/16 (e)
Depth (inches):	Class A	Class B	Class C	0-6	0-6
Pesticides (µg/kg)					
Aldrin	-	-	-	0.68 U	0.80 U
alpha-BHC	-	-	-	0.68 U	0.80 U
beta-BHC	-	-	-	0.68 U	0.80 U
delta-BHC	-	-	-	0.68 U	0.80 U
gamma-BHC (Lindane)	<47	47-78	>78	0.68 U	0.80 U
alpha-Chlordane	<68	68-38,000	>38,000	0.68 U	0.80 U
gamma-Chlordane	<68	68-38,000	>38,000	0.87 J	0.49 J
Dieldrin	<180	180-780	>780	0.47 J	0.80 U
4,4'-DDD	<44	44-48,000	>48,000	3.1	2.1
4,4'-DDE	<44	44-48,000	>48,000	7.6	2.4 J
4,4'-DDT	<44	44-48,000	>48,000	1.3	0.72 J
Endrin	<90	90-220	>220	0.68 U	0.80 U
Endosulfan sulfate	-	-	-	0.68 U	0.80 U
Endrin aldehyde	-	-	-	0.68 U	0.80 U
Endosulfan-I	-	-	-	0.68 U	0.80 U
Endosulfan-II	-	-	-	0.68 U	0.80 U
Heptachlor	<75	75-10,000	>10,000	0.68 U	0.80 U
Heptachlor epoxide	<15	15-2,100	>2,100	0.68 U	0.80 U
Methoxychlor	<59	>59	-	1.4 U	1.6 U
Endrin ketone	-	-	-	0.68 U	0.80 U
Toxaphene	<6	6-250	>250	17 U	20 U
PCBs (µg/kg) (c)					
Aroclor 1016	-	-	-	34 U	40 U
Aroclor 1221	-	-	-	34 U	40 U
Aroclor 1232	-	-	-	34 U	40 U
Aroclor 1242	-	-	-	34 U	40 U
Aroclor 1248	-	-	-	34 U	40 U
Aroclor 1254	-	-	-	34 U	40 U
Aroclor 1260	-	-	-	34 U	40 U
Total PCBs	<100	100-1,000	>1,000	-	-

a/ Concentrations are in units of micrograms per kilogram (ug/kg).
b/ J = Estimated result; U = Not detected above reporting limit.
c/ Aroclor specific criteria not established. Total PCB criteria is provided.
d/ Values in bold exceed NYSDEC's Class A Freshwater Sediment Guidance Value.
e/ WSP-SED-102-0-0.5 is a blind duplicate of WSP-SED-85-0-0.5

APPENDIX

A CATEGORY B LABORATORY DATA PACKAGES (ON DVD)

APPENDIX

B DATA USABILITY SUMMARY REPORT (ON DVD)

APPENDIX

C PHOTOGRAPHS

PHOTOGRAPHIC LOG		
Revere Smelting & Refining	**OU3 Remedial Investigation Middletown, New York**	**31400623.01**

Photo No.	**Date**
1	September 3, 2015

Reconstructed Phillipsburg Creek at E. Main Street.

Photo No.	**Date**
2	September 3, 2015

Reconstructed Phillipsburg Creek south of E. Main Street.

PHOTOGRAPHIC LOG		
Revere Smelting & Refining	**OU3 Remedial Investigation Middletown, New York**	**31400623.01**

Photo No.	**Date**
3	September 3, 2015

View of Phillipsburg Creek on Tax Parcel 78-1-34.4.

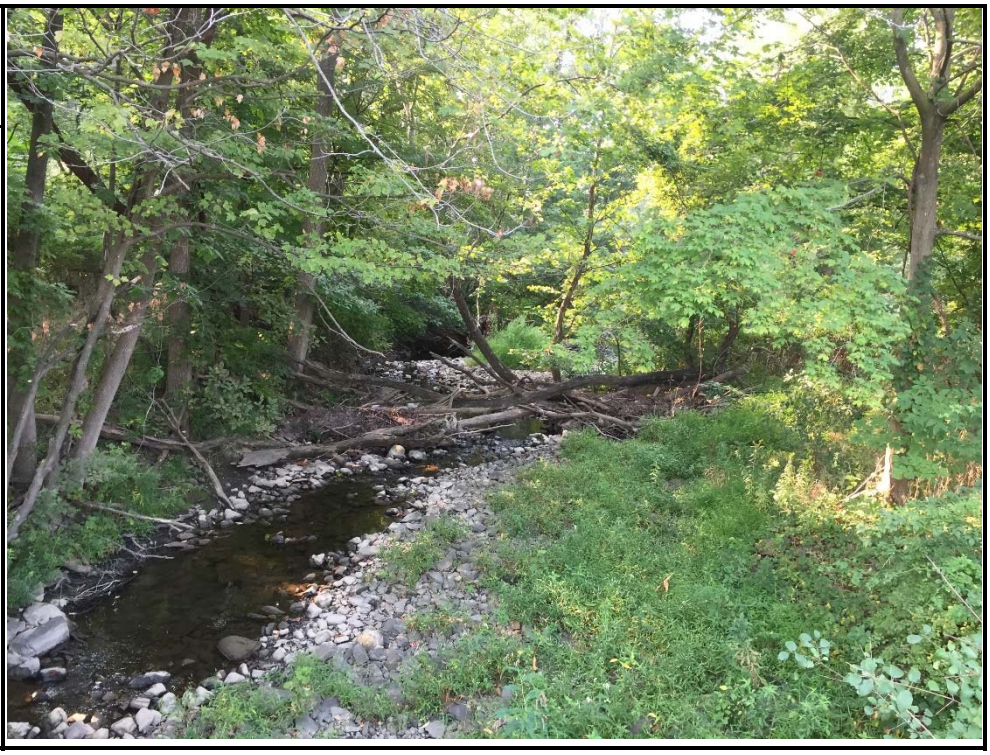


Photo No.	**Date**
4	September 2, 2015

Confluence of Phillipsburg Creek with the Wallkill River on Tax Parcel 78-1-34.4.

PHOTOGRAPHIC LOG		
Revere Smelting & Refining	**OU3 Remedial Investigation Middletown, New York**	**31400623.01**

Photo No.	**Date**
5	July 6, 2016

Confluence of Phillipsburg Creek with the Wallkill River, looking east.

Photo No.	**Date**
6	July 6, 2016

Wallkill River looking south towards Tax Parcel 78-1-30.

PHOTOGRAPHIC LOG		
Revere Smelting & Refining	**OU3 Remedial Investigation Middletown, New York**	**31400623.01**

Photo No.	**Date**
7	July 6, 2016

Wallkill River, looking southwest towards Phillipsburg Road.