SECOND FIVE-YEAR REVIEW REPORT FOR CONSOLIDATED IRON AND METAL SUPERFUND SITE ORANGE COUNTY, NEW YORK

Prepared by

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2·21·19

Date

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LIST OF ABBREVIATIONS & ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
EPA	United States Environmental Protection Agency
FS	Feasibility Study
FYR	Five-Year Review
ICs	Institutional Controls
MTBE	Methyl tert-butyl ether
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
NYSDEC	New York State Department of Environmental Conservation
O&M	Operation and Maintenance
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PPM	Parts per million
PRP	Potentially Responsible Party
RAO	Remedial Action Objective
RI	Remedial Investigation
ROD	Record of Decision
RPM	Remedial Project Manager
SVOCs	Semi-volatile Organic Compounds
TAL	Target Analyte List
VOCs	Volatile Organic Compounds

I. INTRODUCTION

The purpose of a five-year review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) is preparing this FYR review pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP)(40 CFR Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the second FYR for the Consolidated Iron and Metal Superfund Site (site). The triggering action for this statutory review is the signing date of the previous FYR Report, July 16, 2014. The FYR has been prepared due to the fact that hazardous substances, pollutants or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure (UU/UE).

The site consists of one operable unit which will be addressed in this FYR.

The Consolidated Iron and Metal Superfund Site FYR was led by Michael Negrelli, EPA Remedial Project Manager (RPM). As of January 2019, Jaclyn Kondrk is the new lead EPA RPM for the site. Participants included Michael Scorca, EPA hydrologist, Nicholas Mazziotta, EPA human health risk assessor, Michael Clemetson, EPA ecological risk assessor, Cecilia Echols, EPA community involvement coordinator, and Wayne Mizerak, New York State Department of Environmental Conservation (NYSDEC) project manager. The City of Newburgh, lead contact for a group of potentially responsible parties (PRPs) for the site, was notified of the initiation of the FYR. The review began on July 31, 2018.

Site Background

The Consolidated Iron and Metal site was a former car and scrap metal junk yard located at the foot of Washington Street, in the City of Newburgh, Orange County, New York. The site, which covers approximately eight acres, is bounded by a boat marina to the north, Conrail railroad tracks and South Water Street to the west, an inactive municipal incinerator and an active wastewater treatment plant to the south, and the Hudson River to the east. Downtown Newburgh is located approximately 500 feet west of the site.

Geologically, the site is underlain by a stratified clay, silt and sand unit with layers of sand and gravel at the land surface and below the water table. The potable water source for the City of Newburgh is surface water drawn from Washington Lake located west of the City in the Towns of New Windsor and Newburgh. According to the Newburgh Water Department, no potable water supply wells are active within the City of Newburgh.

The site occupies a mixed industrial, commercial, and residential area of the City of Newburgh. From World War I until the early 1940s, the Eureka Shipyard operated at the site. Consolidated Iron and Metal Company began scrap metal processing and storage operations in the mid-1950s and continued at the site for approximately 40 years before the facility's closure in 1999. A smelter was operated on-site between approximately 1975 and 1995 and was used primarily to melt aluminum-containing materials to produce

aluminum ingots. Other metallic materials also were smelted, creating a lead-contaminated ash and slag by-product. Other site operations included sorting ferrous and non-ferrous metal for processing, including automobile batteries. Additionally, over the course of time, cars and other metal materials were burned, crushed, baled, sheared, and flattened. Throughout the past 50 years, the site has been covered with piles of debris, scrap metal, numerous small and large mounds of dark-toned and light-toned materials, and numerous areas of dark-stained soil.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Consolidated Iron and Metal		
EPA ID: NYD0002455756		
Region: 2	**State:** NY	**City/County:** Newburgh/Orange
SITE STATUS		
NPL Status: Final		
Multiple OUs? No	**Has the site achieved construction completion?** Yes	
REVIEW STATUS		
Lead agency: EPA ***[If "Other Federal Agency", enter Agency name]*:**		
Author name (Federal or State Project Manager): Jaclyn Kondrk		
Author affiliation: EPA		
Review period: 7/17/2014 - 1/16/2019		
Date of site inspection: 10/30/2018		
Type of review: Statutory		
Review number: 2		
Triggering action date: 7/16/2014		
Due date *(five years after triggering action date)*: 7/16/2019		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

The remedial investigation (RI) sampling program began in June 2004. The RI determined site soils to be impacted site-wide with metals contamination, particularly lead, and volatile organic compound (VOC) and polychlorinated biphenyl (PCB) contamination in the soils of the former process area of the site (i.e., the area of the site where the smelting, shearing, and compacting occurred). Indicator contaminants were

selected from analytical data collected during the RI based on frequency of detection and magnitude of exceedance of screening criteria, a review of the contaminants of potential concern from the Human Health Risk Assessment (HHRA), and historical activities to determine which contaminants were related to site operations. Indicator contaminants selected for the site include the polycyclic aromatic hydrocarbons (PAHs) benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, ideno (1,2,3-c,d)pyrene, dibenzo(a,h)anthracene, as well as aroclor-1254, arsenic, cadmium, copper, iron, lead, mercury, vanadium, and zinc. Additionally, VOCs are considered indicator contaminants for groundwater.

As part of its studies, EPA evaluated the fate and transport of indicator contaminants at the site. Inorganics, PCBs, and PAHs, are relatively insoluble in water, and show high tendencies to adsorb to soil or organic matter in soil or sediment. Analytical results for the various media support this fate and transport scenario, since many of the contaminants detected in soils and sediment do not exceed screening criteria in surface water or groundwater. As stated, VOCs are considered indicator contaminants in groundwater. These chemicals were likely released at the ground surface within the former process area during site operation and subsequently migrated to groundwater. However, the application of soil cleanup objectives based on protection of groundwater for both VOCs and PCBs and the successive removal of contaminated soils from a depth ranging from six feet to the water table, as stated under the Response Actions section, has since eliminated this migration pathway.

A baseline HHRA and a Screening Level Ecological Risk Assessment (SLERA) were conducted by EPA to provide a quantitative assessment of the health risks to human receptors and a qualitative assessment of risk to ecological receptors under current and future land-use scenarios if no remedial action were taken at the site. Although the risk assessment evaluated all contaminants identified in the groundwater, soils, sediment, and surface water, the conclusions of the risk assessment indicated significant risks and hazards associated with PAHs, PCBs, and lead in the soil at the site, primarily from direct contact by potential future site workers, construction workers, and residents.

The SLERA conducted for the site indicated a potential for ecological risk from exposure to site soils. Because a potential risk was established in the SLERA, a more thorough assessment was conducted. Based on the more detailed evaluation, the ecological risk assessment determined that remediation of the sediments in the Hudson River adjacent to the site is not warranted.

Response Actions

Remedy Selection

A Feasibility Study (FS) was developed in 2005 to evaluate potential alternatives to address the widespread soil contamination at the site. A preferred alternative was presented to the public for review and comment in July 2006 and the site remedy was selected and memorialized in the site Record of Decision (ROD) which was issued on October 4, 2006. The elements of the selected remedy are as follows:

- a remedial design program to provide the details necessary for the construction and monitoring of the remedial program;
- removal and off-site disposal of surface debris and demolition, removal, and off-site disposal of the foundations/basements of the former process area buildings and of the former garage in its entirety;
- excavation and off-site disposal of contaminated soil exceeding the residential preliminary

remediation goal (PRG) for lead (400 parts per million (ppm)) down to six feet below ground surface (bgs);

- excavation and off-site disposal of contaminated soil exceeding the PRG for VOCs and PCBs in subsurface soils (10 ppm total for each) to the water table;
- placement of a readily-visible demarcation material at the interface between the excavations and backfill;
- backfilling the excavated soil with clean fill, meeting the PRG values, to grade;
- imposition of institutional controls in the form of an environmental easement and/or restrictive covenant that will at a minimum require: (a) restricting any excavation below the soil cover's demarcation layer of six feet unless the excavation activities are in compliance with an EPA-approved site management plan (SMP); (b) restricting new construction at the site unless an evaluation of the potential for vapor intrusion is conducted and mitigation, if necessary, is performed in compliance with an EPA-approved SMP; and (c) restricting the use of groundwater as a source of potable or process water unless groundwater quality standards are met;
- development of a site management plan that provides for the proper management of all site remedy components post-construction, such as institutional controls, and that shall also include: (a) monitoring of site groundwater to ensure that, following the soil excavation, the contamination is attenuating and groundwater quality continues to improve; (b) an inventory of any use restrictions on the site; (c) necessary provisions for ensuring the easement/covenant remains in place and is effective; (d) provision for any operation and maintenance required of the components of the remedy, and (e) the requirement that the owner or person implementing the remedy submit periodic certifications that the institutional and engineering controls are in place; and
- periodic reviews by EPA to ensure that the remedy continues to be protective of public health and the environment.

The ROD also addressed remedial action objectives (RAOs) for each medium evaluated at the site as follows:

Soils

The RAOs established for site soil are: (1) prevent or minimize exposure to human and ecological receptors through ingestion and inhalation of or dermal contact with contaminated soils; and (2) minimize or eliminate contaminant migration from site soils to groundwater and surface water.

Groundwater

Due to the limited risks and exposure to the groundwater at this site, institutional controls are deemed adequate to address any potential future exposure. Specifically, deed restrictions have been imposed to prevent the use of groundwater as a source of potable or process water unless groundwater quality standards are met. As a result, no RAO is established for groundwater.

Surface Water

Results from the RI indicate that contamination at the site has not significantly impacted the surface water of the adjacent Hudson River. The HHRA and SLERA indicate that exposure to surface water does not contribute to elevated risk or hazard. As a result, no RAO is established for surface water.

Sediment

Results from the RI indicate that contamination at the site has not significantly impacted the sediment above background levels. The HHRA and SLERA indicate that exposure to sediment does not contribute to elevated risk or hazard. As a result, no RAO is established for sediment.

Remedy Implementation

In early 2007, EPA provided notice to the potentially responsible parties (PRPs) identified for the site, offering them the opportunity to undertake the work. Negotiations concluded in 2008 with a Consent Decree cashout settlement entered into by certain of the PRPs and EPA, with EPA performing the work with a combination of PRP and federal funding. The Consent Decree was entered by the Court in February 2009.

In spring 2008, EPA conducted a topographic survey, geophysical survey, geoprobe sampling program, and test pit excavations to develop a design document for the remedial construction. Also in 2008, EPA conducted certain preparatory activities at the site to facilitate the remedial construction. These activities included the demolition and removal of the garage, the demolition and removal of the remaining building foundations, the removal of scrap metal and debris, and the dismantling and removal of a truck frame and metal barges from the shoreline of the site. The RD report was completed in October 2009.

Following the preparatory activities, construction of the remedial action commenced on July 6, 2009. The work was done by EPA in two phases: Phase One involved the excavation and off-site disposal of 60,000 tons of site soils across the southern half of the site to a depth of six feet and backfilling with clean fill. Phase One was completed in October 2009. Phase Two involved the excavation and off-site disposal of approximately 30,000 tons of PCB and VOC impacted soils to the water table and the excavation and off-site disposal of remaining site soils, approximately 27,000 tons, covering the northern third of the site to a depth of six feet and backfilling with clean fill. Phase Two work was completed in August 2010.

Backfilling was performed concurrently with the excavation, maintaining an adequate buffer zone to avoid cross contamination. Backfill material was tested for suitability before placement, meeting the guidelines set by NYSDEC for restricted residential use and the screening values required by the ROD to be met for backfill. Prior to placement of the backfill, the base of the excavation was sampled on a 50-foot grid to characterize and document the soil contamination remaining on site; samples were analyzed for VOCs, SVOCs, PCBs, and metals. Geotextile fabric was then placed to demarcate the interface between potentially contaminated soil and clean backfill material. Following reaching final grade with backfill soil, the entire site was covered with a minimum of six inches of topsoil and hydroseeded to provide a vegetative cover to ensure dust and erosion control.

In addition to the work performed on the site, at the request of the New York State Department of Health (NYSDOH), EPA removed soils just beyond the north and south property boundaries to a depth of approximately two feet (where not hindered by utilities) and backfilled with clean fill. This was done to ensure that any contaminated soil that may have migrated beyond the site property was also mitigated.

EPA conducted a pre-final inspection with NYSDEC at the site on June 9, 2010 and a punch list was compiled. All of the punch list items were subsequently completed, confirmed at a final inspection of the site on August 18, 2010. EPA completed its Remedial Action Report (RAR) for the site on March 16, 2012. The RAR documented all the remedial activities conducted at the site and included as-built drawings to document site conditions at completion. The City of Newburgh, as current property owner, is responsible for management of the site in accordance with a site management plan (SMP) developed

for post-remediation uses of the site. Site management responsibilities will be transferred to any future site owner.

Status of Implementation

The previous section of this report summarizes the implementation of the remedial actions carried out at the site. EPA continues to monitor the systems in place at the site to ensure their effectiveness in meeting site cleanup goals. Following is a discussion of institutional control implementation.

Institutional Control Implementation

The ROD called for the following with respect to institutional controls: imposition of institutional controls in the form of an environmental easement and/or restrictive covenant that will at a minimum require: (a) restricting any excavation below the soil cover's demarcation layer of six feet unless the excavation activities are in compliance with an EPA-approved SMP; (b) restricting new construction at the site unless an evaluation of the potential for vapor intrusion is conducted and mitigation, if necessary, is performed in compliance with an EPA-approved SMP; and (c) restricting the use of groundwater as a source of potable or process water unless groundwater quality standards are met. The restrictions are memorialized in an environmental easement filed with the Orange County Clerk on September 11, 2012.

IC Summary Table

Table 1: Summary of Planned and/or Implemented ICs

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Groundwater and Sub-surface Soils	Yes	Yes	Entire site	Restrict installation of ground water wells and ground-water use; employ site management plan for excavation below demarcation layer; employ site management plan to address potential soil vapor intrusion	Environmental Protective Easement and Declaration of Restrictive Covenants, September 2012

Systems Operations/Operation & Maintenance

The ROD called for the development of a SMP to provide for the proper management of all post-construction remedy components. The SMP was completed in June 2014.

The SMP includes operation and maintenance (O&M) activities required for the site. Because there are no mechanical systems installed at the site, O&M activities consist of periodic inspections of the site property (minimally once per year and additionally following severe weather events) to note general site conditions and to ensure that the security fence and monitoring wells are in good repair. Groundwater sampling of the ten on-site monitoring wells is conducted in accordance with the schedule established in

the SMP to verify that the low levels of contamination in site groundwater are attenuating and that groundwater quality improves as a result of the site remediation.

In addition to media monitoring, O&M activities include periodic certification that the institutional controls established in the environmental easement attached to the site property are unchanged and that nothing has occurred that would impair the ability to protect public health and the environment or otherwise constitute a violation or failure to comply with site controls. This certification is provided in the Periodic Review Report, to be submitted annually by the site owner.

Potential site impacts from climate change have been assessed, and the performance of the remedy is currently not at risk due to the expected effects of climate change in the region and near the site.

III. PROGRESS SINCE THE LAST REVIEW

Table 1: Protectiveness Determinations/Statements from the 2014 FYR

OU #	Protectiveness Determination	Protectiveness Statement
1	Protective	The remedy is protective of human health and the environment.
Sitewide	Protective	The implemented remedy for the site is protective of human health and the environment.

There were no issues and recommendations identified in the last FYR.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

On October 1, 2018, EPA Region 2 posted a notice on its website indicating that it would be reviewing site cleanups and remedies at 42 Superfund sites in New York and New Jersey, including the Consolidated Iron and Metal site. The announcement can be found at the following web address: https://www.epa.gov/aboutepa/fiscal-year-2019-five-year-reviews. In addition to this notification, a public notice was made available by posting on the City of Newburgh municipal website a public notice titled "U.S. Environmental Protection Agency Reviews Cleanup at the Consolidated Iron and Metal Superfund Site" on 10/31/2018, stating that there was a FYR and providing EPA contact information to address any questions about the FYR process or the site in general. The results of the review and the report will be made available at the Site information repository located at the Newburgh Free Library at 124 Grand Street, Newburgh, NY.

Data Review

Data are collected and reviewed to ensure that RAOs are met following implementation of the remedial action. As previously stated, RAOs were only established for soil. The RAOs for soil are (1) prevent or minimize exposure to human and ecological receptors through ingestion and inhalation of or dermal contact with contaminated soils; and (2) minimize or eliminate contaminant migration from site soils to groundwater and surface water. These RAOs and the associated cleanup levels set forth in the ROD were

met upon completion of the remedial construction, documented in the Remedial Action Report (RAR) for the site dated March 16, 2012.

Groundwater

Due to the limited risks and exposure to the groundwater at this site, institutional controls are deemed adequate to address any potential future exposure. Specifically, deed restrictions have been imposed to prevent the use of groundwater as a source of potable or process water unless groundwater quality standards are met. As discussed above, an environmental easement was filed in the County Clerk's office on September 11, 2012, which restricts the use of groundwater as a source of potable or process water unless groundwater quality standards are met. Long-term monitoring will be conducted to ensure that the selected site remedy is protective of human health and the environment. The groundwater will be monitored as part of the post-construction response action to ensure that the contamination is attenuating and groundwater quality continues to improve.

In May 2013, groundwater samples were collected from the ten monitoring wells re-installed at the site following construction. Samples were analyzed for VOCs, SVOCs, PCBs, and inorganics (target analyte list (TAL) metals). Two subsequent sampling events were conducted in accordance with the SMP, with results reported in the Periodic Review Reports dated December 2015 and November 2017. Another groundwater sampling event is scheduled for the last quarter of 2018, with results to be reported in 2019. Groundwater sampling results for the indicator contaminants reported in the ROD are provided in table format attached to this report (Attachment 2).

The highest levels of VOCs were detected above screening criteria in monitoring well MW-01, but are generally at very low concentrations or not detected in the remaining monitoring wells, suggesting a past spill in the area of MW-01. The inorganic elements iron, magnesium, manganese, sodium, and zinc exceeded the screening criteria in most wells. However, these metals occur in high concentrations naturally in New York State and the levels measured are comparable to levels measured in 2004. They will continue to be monitored. The contaminant of concern, lead, was detected above the screening criterion in the groundwater sample collected in 2013 from MW-06, at 70 ug/L, and at 47 ug/L and 45 ug/L, respectively in MW-04 and MW-08 in 2015. In 2017, the lead concentration had dropped to 29 ug/L and 5 ug/L in MW-06 and MW-04, respectively, and was measured at 43 ug/L in MW-08 and 33 ug/L in MW-02.

Groundwater data review indicates that the levels of contamination in site groundwater are attenuating compared to baseline levels measured prior to remedial activities. The main contaminants of concern identified in the ROD were VOCs and lead. Levels of these contaminants in groundwater occur above groundwater standards in only isolated instances and at levels commensurate with, or lower than, initial baseline sampling (i.e., they are not significantly increasing). These data support the ROD assumption that the groundwater contamination is localized and the decrease in frequency of detections of some contaminants indicates that limited residual groundwater contamination has mostly attenuated. Groundwater quality will continue to be monitored in accordance with the SMP.

The existing ICs for the site prohibit the use of on-site groundwater as potable water. Additionally, the Hudson River is the immediately downgradient receptor receving groundwater discharge from the site. There are no known or previously identified sensitive ecological resources downgradient of the site that could be impacted by the migration of the groundwater. Consequently, contamination within site-wide groundwater does not pose a potential threat to human health or the environment.

Site Inspection

The inspection of the Site was conducted on 10/30/2018. In attendance were Michael Negrelli, EPA RPM, Wayne Mizerak, NYSDEC Project Manager, and Jason Morris, City Engineer for the City of Newburgh. The purpose of the inspection was to assess the protectiveness of the remedy.

During the site inspection, there were no problems or deviations observed with respect to the ongoing operation and maintenance activities. Currently the site is available for public use as a waterfront park and the walkway around the site perimeter is part of the City of Newburgh Hudson River Waterfront Trail.

V. TECHNICAL ASSESSMENT

QUESTION A: Is the remedy functioning as intended by the decision documents?

Question A Summary:

The remedy is functioning as intended by the 2006 ROD. Soils exceeding cleanup levels selected in the ROD have been excavated and disposed of at an off-site location. A demarcation layer has been placed at the bottom of the excavation as required by the ROD and remedial design. Post-excavation samples confirm that the ROD cleanup levels have been met and document the levels of contamination remaining on-site.

An institutional control, in the form of an environmental easement, has been placed on the property which a) restricts any excavation below the soil cover's demarcation layer of approximately six feet unless the excavation activities are in compliance with an EPA-approved SMP; b) restricts new construction at the site unless an evaluation of the potential for vapor intrusion is conducted and mitigation, if necessary, is performed in accordance with an EPA-approved SMP; and c) restricts the use of groundwater as a source of potable or process water unless groundwater quality standards are met.

Groundwater samples collected after the excavation confirm the ROD assumption that the groundwater contamination was localized and that soil remediation activities and institutional controls would prevent unacceptable use and exposure to residual contamination. Groundwater samples taken in 2013, 2015, and 2017 show isolated exceedances of lead, benzene, ethylbenzene, and xylenes. Overall water quality, however, has improved since the RI/FS was conducted. It is expected that residual contamination present in the groundwater should continue to attenuate. In the meantime, the aforementioned ICs will successfully interrupt human exposure until the groundwater quality standards are met.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?

Question B Summary:

There are no changes in the physical conditions of the site or site uses that would affect the protectiveness of the selected remedy. The exposure assumptions and the toxicity values that were used to estimate the potential risks and hazards to human health followed general risk assessment practice at the time the risk assessment was performed and are consistent with current practice.

Soils across the site were excavated to a depth of six feet or the water table if shallower than six feet. In the process area, excavation went to 10 feet. An additional excavation to two feet occurred to the north and south of the site until physical barriers, such as drainage pipes or paved roads, were encountered. The western boundary of the site is the Conrail railroad line. Therefore, there is no current exposure to contaminated soils. Future exposure to subsurface site soils is prevented by implementation of the SMP required by the environmental easement.

The evaluation of groundwater in this FYR focused on two primary exposure pathways, direct ingestion (as a potable water source) and the possibility of vapor intrusion if buildings were to be constructed on site. An environmental easement is in place to prevent the use of groundwater for potable purposes. There are no residential or public supply wells in the contaminated area or downgradient. Therefore, the pathway is incomplete.

The only RAOs established for the site are for soil. These RAOs, as described in Section II, remain valid.

Soil Vapor Intrusion

The environmental easement in place also includes a prohibition on development on the site without a vapor intrusion investigation. Based on the most recent groundwater sampling event performed in 2017, benzene (17 ug/L) and ethylbenzene (210 ug/L) exceed the EPA vapor intrusion screening levels of 1.6 and 3.5 ug/L, respectively, in MW-01 . However, there are no buildings currently located onsite and the easement will continue to prevent the vapor intrusion pathway from becoming complete in the event that buildings are constructed at the site in the future.

Ecological Risk Assessment Evaluation

With respect to ecological risk, although the ecological risk assessment screening values used to support the 2006 ROD may not necessarily reflect the current values, the exposure assumptions remain appropriate and thus the remedy remains protective of ecological resources. The terrestrial exposure pathway has been addressed by the removal of contaminated surface soil. As noted in the ROD, based on the conclusions of the Ecological Risk Assessment, remediation of the sediments in the Hudson River is not warranted.

QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy?

No other information has come to light that would call into question the protectiveness of the remedy. There have been no changes at the Site as the result of natural disasters or climate change impacts.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the Five-Year Review:
OU1

VII. PROTECTIVNESS STATEMENT

Protectiveness Statement(s)		
Operable Unit: OU1	*Protectiveness Determination:* Protective	*Planned Addendum Completion Date:* Click here to enter a date
Protectiveness Statement: The remedy is protective of human health and the environment.		

Sitewide Protectiveness Statement	
Protectiveness Determination: Protective	*Planned Addendum Completion Date:* Click here to enter a date
Protectiveness Statement: The implemented remedy for the site is protective of human health and the environment.	

VIII. NEXT REVIEW

The next FYR report for the Consolidated Iron and Metal Superfund site is required five years from the completion date of this review.

APPENDIX A – REFERENCE LIST

Table 2: Documents, Data and Information Reviewed in Completing the Five-Year Review	
Document Title, Author	**Date**
Record of Decision, Consolidated Iron and Metal Site	October 2006
Preliminary Site Close Out Report	September 2010
Final Remedial Action Report	March 2012
Groundwater Sampling Event Trip Report	May 2013
Site Management Plan	June 2014
Periodic Review Report	December 2015
Periodic Review Report	November 2017

APPENDIX B – GROUNDWATER TABLES

Consolidated Iron and Metal Site, Newburgh, New York
Groundwater Sample Analysis May 2013

Chemical Name	Screening Criteria	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10
VOCs											
MTBE	10	U	0.74	10	2.6	5.3	0.97	9.9	U	U	3
Benzene	1	22	U	U	U	U	U	U	U	5	U
Toluene	5	9.9	U	U	U	U	U	U	U	U	U
Ethylbenzene	5	720	U	U	U	U	U	U	U	U	U
m,p-Xylenes	5	73	U	U	U	U	U	U	U	U	U
INORGANICS											
Antimony	3	U	U	U	U	U	U	U	U	U	U
Arsenic	10	U	21	15	6.7	3.6	3.7	1.3	2.6	U	5.6
Iron	300	2900	23000	23000	10000	10000	12000	1200	1400	1700	18000
Lead	15	1.6	U	4.6	5.1	1.2	70	3.2	12	U	9.2
Magnesium	35000	11000	34000	51000	43000	30000	39000	6800	16000	15000	31000
Manganese	300	1500	1500	340	320	1300	1100	110	84	590	1100
Sodium	20000	63000	80000	49000	56000	75000	68000	36000	5500	74000	89000
Thallium	0.5	U	U	U	U	U	U	U	U	U	U
Zinc	5000	6.7	4.3	9.1	5.3	3.1	24	4.9	50	3.8	10

Notes:
All values are in micrograms per liter (ug/L)
Screening Criteria are most stringent of State or federal drinking water standards
Analytes reported on this table correspond to those reported on Table 5 of the 2006 Record of Decision
U = non-detected value

Consolidated Iron and Metal Site, Newburgh, New York
Groundwater Sample Analysis December 2015

Chemical Name	Screening Criteria	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10
VOCs											
MTBE	10	U	0.88	11.0	2.00	5.60	0.41	12.0	U	U	2.10
Benzene	1	37.0	U	U	U	U	U	U	U	1.20	U
Toluene	5	5.30	U	U	U	U	U	U	U	U	U
Ethylbenzene	5	55.0	U	U	U	U	U	U	U	U	U
m,p-Xylenes	5	5.10	U	U	U	U	U	U	U	U	U
INORGANICS											
Antimony	3	U	U	U	U	U	U	U	U	U	U
Arsenic	10	5	38	15	16	6	5	5	10	4	9
Iron	300	13,100	34,900	24,000	12,200	14,100	4,450	14,100	4,470	1,330	15,400
Lead	15	8.0	U	5.0	47.0	4.0	17.0	15.0	45.0	U	U
Magnesium	35000	38,200	33,100	58,800	43,700	32,500	34,900	27,700	24,400	23,300	28,100
Manganese	300	6,010	2,060	309	279	571	1,120	480	702	673	953
Sodium	20000	142,000	72,600	46,600	53,600	73,000	49,500	53,700	6,190	104,000	71,200
Thallium	0.5	U	U	U	U	U	U	U	U	U	U
Zinc	5000	30	38	41	43	31	32	37	57	37	28

Notes:
All values are in micrograms per liter (ug/L)
Screening Criteria are most stringent of State or federal drinking water standards
Analytes reported on this table correspond to those reported on Table 5 of the 2006 Record of Decision
U = non-detected value

Consolidated Iron and Metal Site, Newburgh, New York
Groundwater Sample Analysis November 2017

Chemical Name	Screening Criteria	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10
VOCs											
MTBE	10	U	U	8.20	2.20	4.10	U	6.90	1.20	U	2.10
Benzene	1	17.0	U	U	U	U	U	0.40	U	0.71	U
Toluene	5	U	0.40	U	U	U	U	0.33	U	U	U
Ethylbenzene	5	210	U	U	U	U	U	U	U	U	U
m,p-Xylenes	5	12.0	U	U	U	U	U	U	U	U	U
INORGANICS											
Antimony	3	U	U	U	U	U	U	U	U	U	U
Arsenic	10	4	33	18	9	4	4	8	8	6	7
Iron	300	5,650	34,200	27,000	8,660	10,800	666	11,400	5,940	1,020	16,100
Lead	15	U	U	9.0	5.0	U	29.0	U	43.0	U	U
Magnesium	35000	24,800	36,400	49,800	41,200	37,300	35,000	21,100	24,300	20,700	25,400
Manganese	300	3,730	2,330	276	215	381	229	653	789	616	871
Sodium	20000	233,000	52,100	46,500	49,500	56,300	36,200	39,300	40,500	99,000	69,400
Thallium	0.5	U	U	U	U	U	U	U	U	U	U
Zinc	5000	16	12	20	21	20	47	16	88	17	11

Notes:
All values are in micrograms per liter (ug/L)
Screening Criteria are most stringent of State or federal drinking water standards
Analytes reported on this table correspond to those reported on Table 5 of the 2006 Record of Decision
U = non-detected value

APPENDIX C - SITE MAP

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