Niagara Falls Armed Forces Reserve Center (AFRC)
9400 Porter Road
Niagara Falls, New York

Five Year Review

Prepared for:
the Base Realignment and Closure Office (BRAC)

Prepared by:

US Army Corps of Engineers (USACE)
Louisville District

US Army Corps of Engineers ®

October 2020

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List of Acronyms

AEC	Army Environmental Command
AFRC	Armed Forces Reserve Center
AOC	Area of Concern
bgs	below ground surface
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
Class GA	NYSDEC Class GA Groundwater Effluent Limitations
COC	contaminant of concern
CPC	Contaminant of Potential Concern
CSCO	Commercial Soil Cleanup Objective
CVOC	chlorinated volatile organic compounds
DD	decision document
DERP	Defense Environmental Restoration Program
DOD	Department of Defense
DOT	Department of Transportation
DPT	Direct Push Technology
DPW	Department of Public Works
ECP	Environmental Condition of Property
EPA	Environmental Protection Agency
FID	Flame Ionization Detector
FYR	Five Year Review
HHRA	Human Health Risk Assessment
IRA	Interim Remedial Action
LSI	Limited Site Investigation
LUC	Land Use Control
MEP	Military Equipment Parking
mg/kg	Milligrams per Kilogram
MNA	Monitored Natural Attenuation
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NFA	No Further Action
NPL	National Priorities List
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OMS	Organizational Maintenance Shop
OSHA	Occupational Safety and Health Administration
PARS	PARS Environmental, Inc.
PCB	Polychlorinated biphenyl
PID	Photoionization Detector
POTW	Publicly Owned Treatment Works
POV	Privately Owned Vehicle
PP	Proposed Plan
PPRTVs	Provisional Peer Reviewed Toxicity Values

RAO	Remedial Action Objective
RD	Readiness Division
RI	Remedial Investigation
RME	Reasonable Maximum Exposure
ROD	Record of Decision
RSC	Regional Support Command
SARA	Superfund Amendments and Reauthorization Act of 1986
SCL	Soil Cleanup Level
SCO	Soil Cleanup Objective
SVOC	Semi-Volatile Organic Compound
TCL	Target Compound List
UCL	Upper Concentration Limit
µg/kg	Micrograms per Kilogram
µg/L	Micrograms per Liter
US	United States
USACE	United States Army Corps of Engineers
USAR	United States Army Reserve
USCO	Unrestricted Soil Cleanup Objective
USEPA	United States Environmental Protection Agency
USGS	United Soil Classification System
UST	Underground Storage Tanks
VOC	Volatile Organic Compound

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1.0 Introduction

On behalf of the Base Realignment and Closure Office (BRAC), the United States Army Corps of Engineers (USACE) – Louisville District has conducted this Five Year Review at the Niagara Falls Armed Forces Reserve Center, hereby referred to as the "Site". The Site is located at 9400 Porter Road Niagara Falls, New York. The Site is an approximately 19.5 acre parcel located in the southern portion of Niagara Township in Niagara Falls, Niagara County, New York. The Site is currently vacant and was formerly a national defense facility used for maintenance of air defense missiles. There is a collection of buildings on the property including a former Army reserve center; various buildings and shops; and a large aircraft hangar with service areas. The property is almost completely paved. The site is currently owned by Reger Holdings LLC. The Site is currently zoned by the Town of Niagara as Light Industrial. A Site location map is provided on Figure 1 and current satellite imagery is provided on Figure 2.

This Five Year Review is considered abbreviated since the remedy at the Site consists of a land use control (LUC) that was incorporated into the current 2019 Deed (Appendix B) as an "Environmental Protection Provision" (restrictive covenant). Although abbreviated, this Five Year complies with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, 42 U.S.C. §§ 9600 et seq., and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR §300.430(f)(4)(ii). Additionally, this Five Year Review follows the USEPA's 2001 Comprehensive Five-Year Review Guidance, OSWER 9355.7-03B-P, June 2001 and the USEPA's 2016 Five Year Review Recommended Template, OSWER/OLEM-9200.0-89 (January 2016). The specific methods used to complete and findings/conclusions of this Five Year Review are documented in this report.

The purpose of this Five Year Review is to evaluate the implementation and the performance of the selected remedy identified in the 2015 Record of Decision (ROD) (US Army/Pars Environmental, 2015) in order to determine that the remedy is and will remain protective of human health and the environment.

An Interim Removal Action (IRA) was completed for soil and was shown to remove residual contamination, also removing all the potential risks for the current and future Land Use. An erroneous risk assessment showed unacceptable risk to construction workers through groundwater. Therefore, Remedial Action Objectives (RAOs) were developed for groundwater and are as follows:

- Reduce or eliminate inhalation of volatiles from exposed contaminated groundwater during subsurface construction activities.
- Reduce or eliminate dermal contact with groundwater that may occur during construction activities.

The erroneous risk assessment was corrected, and no unacceptable risk was found for construction workers or any other receptors. However, the RAOs specific to the construction workers were not updated.

The selected Alternative in the 2015 ROD was Alternative 1: No Further Action (NFA) as the remedy for the Site. The NFA determination was due to the presence of no unacceptable risk, but the ROD did include Land Use Controls (LUCs). The LUCs can also be considered

Institutional Controls (ICs). The LUCs currently utilized to achieve protectiveness are:

- A restriction preventing residential use of the Site was placed into the deed transferring the Site out of Federal ownership in 2018 (Appendix B).

Although not specifically a LUC, the remedy also included the following requirement:

- Because residual contamination remains at concentrations that do not allow unrestricted use/unlimited exposure (UU/UE), a CERCLA§ 12l(c) review will be conducted every five years until the Army and State of New York concur these reviews are no longer necessary.

This abbreviated Five Year Review was conducted June 2020 to August 2020 and is the first FYR since the 2015 No Further Action (NFA) ROD.

Because the LUCs are memorialized in the 2019 Deed, they will be maintained as long as the 2019 Deed is in place and will transfer to any new ownerships. These LUCs are in effect until the concentration of hazardous substances in the groundwater are at such levels to allow for UU/UE. The US Government/Department of Defense (DOD) is responsible for implementing, maintaining, reporting on, and enforcing the LUCs. This may be modified to include another party should the site-specific circumstances warrant it. Although the DOD has transferred these procedural responsibilities to another party by contract, property transfer agreement, or through other means (i.e., 2018 Deed), the DOD shall retain ultimate responsibility for remedy integrity and completion of the CERCLA Five Year Reviews. Any transfer of property also transfers the LUCs (restrictions in the Deed prohibiting Residential Land Use (both land and groundwater). The current 2019 Deed includes language that identifies consequences has for any activity that is inconsistent with the RAOs, remedy, use restrictions, or any other action that may interfere with the effectiveness of the LUCs.

1.1 5 Year Review Summary Form

SITE IDENTIFICATION		
Site Name: Niagara Falls AFRC		
EPA ID: Not Applicable		
Region: 2	**State:** NY	**City/County:** Town of Niagara, Niagara County

SITE STATUS	
NPL Status: Non-NPL	
Multiple OUs? No	**Has the site achieved construction completion?** Yes

REVIEW STATUS
Lead agency: DOD
Author name: William Clabaugh
Author affiliation: US Army Corps of Engineers Louisville District Technical Manager
Review period: 6/11/2020 - 8/3/2020
Date of site inspection: 7/28/2020
Type of review: Policy
Review number: 1
Triggering action date: 4/3/2015
Due date *(five years after triggering action date)*: 4/3/2020

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

Protectiveness Statement		
Operable Unit: Niagara AFRC	*Protectiveness Determination:* Protective	*Planned Addendum Completion Date:* Not Applicable
Protectiveness Statement: The remedy at Niagara AFRC is protective of human health and the environment.		

2.0 Site Chronology

Environmental investigations and remediation on the Site first began in 2008 with the investigation and remediation of a drainage swale and storm sewer at outfall number 5 (Figure 5) conducted by the PARS Environmental Inc. The purpose of the investigation was to determine the presence of polychlorinated biphenyls (PCBs) and volatile organic compounds (VOCs) and evaluate potential impacts associated with the spill of material from the aforementioned drainage swale. A removal action was conducted that included the excavation of 134 tons of PCB impacted soils. In 2010, a site inspection was performed in order to evaluate potential impacts associated with the former underground storage tanks (UST) at former Building 2 (Figure 3) and the fire protection main. In 2011, a remedial investigation of soil and groundwater was performed in the vicinity of the six former USTs, the former vehicle fueling area, and the fire protection main. Soil and groundwater samples were taken to determine the presence of PCBs, VOCs, and semi-volatile organic compounds (SVOCs). An IRA was performed in September 2011. The action included the excavation of approximately 40 tons of soil and the pumping of approximately 2,000 gallons of ground water from the excavation. In 2012, a supplemental investigation was conducted to further evaluate the horizontal extent of groundwater impacts on the eastern portion of the Site. See chronology of events in **Table 1** below.

Table 1: Chronology of Site Events

Event	Date
Investigation/Remediation of Drainage Swale and Storm Sewer	October 2008 – September 2009
Investigation/Remediation of USTs, former Building 2, and fire protection main	November 2010 – September 2011
Supplemental Investigation of eastern portion of Site	November 2012
Niagara Falls Armed Forces Reserve Center No Further Action Record of Decision	3 April 2015

3.0 Background

The Niagara Falls Armed Forces Reserve Center (AFRC) Site consists of approximately 19.5 acres. The Site is currently vacant. There is a collection of buildings on the property, including a former Army reserve center, various building and shops, and a large aircraft hangar that includes service areas. The property is almost completely paved (Figure 2). The Site is located in the town of Niagara, Niagara County, New York and is located within the southern portion of the Niagara Township. The property is bounded by airport hangars and taxiways to the North and East, Porter Road to the South, and woods and retail commercial property to the West. See Figure 1 for site location and boundaries. The immediate area surrounding the Site is zoned by the Town of Niagara as Light Industrial and since conveyance the Site is subject to local codes including the *Town of Niagara Zoning Ordinance.* The Draft Niagara Falls

International Airport Master Plan concludes that non-compatible residential structures, a mobile home park and a hotel, already exist in the vicinity of Runways 6 and 10R on the opposite side of Porter Road. Site Boundaries are shown in **Figures 2** in **Appendix A**. Deed transfers are shown in **Appendix B.**

3.1 Topography

The Site is relatively flat with a slight gradient to the west/southwest and the elevation is approximately 575 feet above mean sea level. The site is located in the Erie-Ontario Lowlands Physiographic Province. The region is characterized by relatively flat topography and dissected by east-west trending escarpments. The site is located about 5 miles south of the Niagara Escarpment.

3.2 Geology

The Site area is underlain by glacial sediment consisting mainly of till and lacustrine silt and clay, which is approximately 5 to 80 feet thick. The glacial deposits overlay weathered dolomite and limestone of the Lockport Group (Niagaran Series of Middle Silurian age). The Lockport Group is underlain by approximately 100 feet of shale and limestone (Clinton Group), which is underlain by 110 feet of sandstone and shale (Medina Group).

Soils encountered during the site inspection and remedial investigation consisted of non-cohesive fill from 0 to 4 feet below ground surface (bgs). Fill material at some probe locations extended from 8 to 13 feet bgs. The fill material encountered was comprised of a coarse-grained mixture of sand and gravel with varying amounts of fine-grained silt and clay. Varying amounts of brick, slag, concrete, rebar, asphalt and wood were observed within this mix. Native surficial soils are comprised of silty clay with trace fine sand. Bedrock was not encountered during the investigation and probes were not advanced beyond 13 feet bgs.

3.3 Hydrogeology

The Site is underlain by the Lakemont silty clay loam and the Fonda mucky silt loam. Both soil types are fine to moderately fine-textured and have a how permeability. These soils are subject to ponding and the water table in the vicinity of the Site is at a depth of less than 4 feet bgs (CH2MHill, 2007).

The glacial deposits at the Site act as a confining unit for the weathered bedrock below. The hydraulic properties in the Lockport dolomite and limestone are related to secondary porosity and permeability owing to the presence of factures and solutioning. The main water-bearing zones in the Lockport Group are the weathered bedrock surface and horizontal fracture zones near stratigraphic contacts. The rock matrix transmits negligible amounts of groundwater because primary porosity is very low. The horizontal hydraulic conductivity of the weathered bedrock is estimated at 40 feet per day.

Investigation of groundwater at the Site was limited to a perched water zone underlying the Site. The perched water zone was encountered at depths ranging from 2 to 6 feet bgs. It is

likely that the coarse-grained fill material overlying the less-permeable native fine-grained clay is creating the perched water conditions at the Site.

3.4 Land Use

The United States Government acquired the Site in 1955 and at that time the United States Navy used the Site to service helicopters and airplanes. Most of the buildings at the Site were constructed by 1956. The US Army obtained the Site from the Navy in 1962. From 1970 to 1975, the Site was used to service Nike Missiles from missile batteries around the State of New York.

The Site was most recently occupied by the 277th Quartermaster Company, the 865th Combat Support Hospital, the 1982nd Forward Surgical Unit and Area Maintenance Support Activity 76. A small presence was also maintained by personnel of the Department of Public Works (DPW), Fort Drum, New York (*Environmental Condition of Property Report,* CH2MHill, June 2007). No personnel or units have occupied the Site as of September 15, 2011 per Based Realignment and Closure (BRAC) law. In September 2018, ownership of the Site was transferred from the DOD to the town of Niagara. Subsequently in April 2019, the site was sold by the Town of Niagara to Reger Holdings LLC. The town of Niagara retained 3.7 acres of land for proposed projects. Language restricting residential use is included in the current quitclaim deed (Appendix B).

Surface and storm water drainage is to Cayuga Creek located immediately south of Porter Road is undeveloped forested land. Niagara Falls International Airport is adjacent to the north and east of the Site boundaries. Other properties in the vicinity of the Site are used primarily for commercial purposes. The draft airport master plan concludes that non-compatible residential structures, a mobile home park and a hotel, already exist in the vicinity of Runways 6 and 10R on the opposite side of Porter Road. There is no basis to conclude that the zoning authority would allow the residential use of property in the vicinity of Runways 6 and 10R that is located on the same side of Porter Road as the runways that conflicts with the existing zoning. Based on the Site location and Army BRAC policy when transferring commercial property under an Economic Development Conveyance, a restriction prohibiting residential use was included in the deed transferring the property.

3.5 Chemicals Identified at the Site

The Site was constructed in 1955 and was operational to its intended purpose of servicing helicopters, airplanes, and missiles until 2011. The potential contaminants that were used during DOD usage were volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and polychlorinated biphenyls (PCBs). In 2008, liquid discharge containing PCBs was observed discharging from a fire protection main into the corrugated storm sewer at Outfall No. 5 (Figure 5) and then into the drainage swale at the southeast corner of the Site. Supplemental investigations resulted in detections of benzene in one temporary well and tetrachloroethene (TCE) in another well.

3.6 Previously Completed Site Investigations

Several investigations have been conducted at the Site. These include the following:

- PARS' Final Remedial Action Report, Niagara Falls, New York, (2010).
- PARS' Final Site Inspection Report, Niagara Falls, New York (2011).
- PARS' Final Supplemental Investigation Report, Niagara Falls, New York (2013).
- PARS' Final Remediation Investigation/Interim Remedial Action/Human Health Risk Assessment Report (December 2014).

The results and findings of these investigations are discussed separately in the following sections.

PARS' Final Remedial Action Report, Niagara Falls, New York, (2010)

In 2008, the United States Army Reserve (USAR) investigated and reported a spill of a yellow substance discharging from Outfall No. 5 into the drainage swale at the southeast corner of the Site. The product was also discharging from a 6-inch diameter cast iron fire protection main into the 24-inch diameter corrugated storm sewer. A sample of the product was collected and analyzed. Polychlorinated biphenyls were detected in the sample at a concentration of 2.1 mg/kg (i.e., Aroclor 1254).

An investigation of the outfall and drainage swale was performed between October 2008 and August 2009. Aroclor 1254 was detected in the soil samples collected from the drainage swale at concentrations ranging from non-detect to 1,060 mg/kg. Additionally, Aroclor 1260 was detected in one soil sample at a concentration of 2.98 mg/kg. The findings of the investigation are outlined in the Final Remedial Action Report (PARS, March 2010).

PARS' Final Site Inspection (SI) Report, Niagara Falls, New York, (2011)

In November and December 2010, a site inspection was performed to evaluate potential impacts associated with the former USTs as former Building 2 (Figure 3) and the fire protection main. Inspection activities consisted of a geophysical survey, exploratory excavations and soil and water sampling. The geophysical survey identified an approximate 150-foot long linear anomaly in the vicinity of the fire protection main that terminates at the 24-inch diameter corrugated storm sewer line.

Twelve exploratory excavations (TP-1 through TP-12) were completed based on the findings of the geophysical survey (Figure 4). A sample was collected from water flowing from the cast iron fire protection main. Elevated concentrations of toluene, naphthalene, PCBs and chromium were detected in the water sample.

Petroleum product and a heavy sheen were observed within the fill material and on the groundwater surface in one of the exploratory excavations (TP-12). Several compounds, including PCBs, were detected in a water sample collected from TP-12 at concentrations exceeding the NYSEDC Class GA Objectives.

A soil sample was collected from one of the exploratory excavations (TP-1) and several SVOCs were detected at concentrations exceeding the NYSDEC Unrestricted Use Soil Cleanup Objectives (USCO) and Commercial Use Soil Cleanup Objectives (CSCO).

Twenty-one soil probes were completed as part of the site inspection. One soil sample was collected from each probe for laboratory analysis. Acetone, metals, and PCBs were detected in several samples at concentrations exceeding the USCO. Several metals were detected at concentrations exceeding the CSCO. The NYSDEC concluded that fill material may be the cause of the elevated concentrations for certain metals in the soil, which should nullify any concerns for high metal content in the soils. The fill material contains some slag and iron blast slag and open hearth slag from the production of carbon steel is commonly found throughout western New York. The findings of the SI are outlined in the Final Site Inspection Report (PARS, June 2011).

PARS' Final Supplemental Investigation Report, Niagara Falls, New York, (2013)

A supplemental investigation was performed in November 2012 to further evaluate the horizontal extent of groundwater impacts on the eastern portion of the Site. A total seven permanent monitoring wells and six temporary well points were installed as part of the investigation. During drilling activities, soils were continuously logged and screened with a photoionization detector (PID). Based on PID readings, two soil samples were collected from the location of MW-5 and submitted to the laboratory for analysis. No compounds were detected in the two soil samples at concentrations above the applicable USCO or CSCO.

Groundwater samples were collected from the six temporary well points on November 7 and 8, 2012 and from the seven permanent monitoring wells on November 19 and 20, 2012. Two of the permanent wells and one temporary well were dry. Groundwater samples were submitted to the laboratory for analysis. Benzene was detected in the perched groundwater sample from TW-1 and trichloroethene (TCE) was detected in the sample from TW-5 at concentrations slightly above their respective Class GA criteria. TW-1 did not have a sand filter pack or bentonite seal. No other compounds were detected above the Class GA criteria. The findings are outlined in the Final Supplemental Investigation Report (PARS, March 2013)

PARS' Final Remedial Investigations/Interim Remedial Action/Human Health Risk Assessment Report, Niagara Falls, New York, (2014)

In September 2011, a remedial investigation of soil and groundwater was performed in the vicinity of the six former USTs, the former vehicle fueling area and the cast iron fire protection main that discharges to a 24-inch corrugated metal storm sewer line on the eastern boundary of the Site. As part of this work, 30 soil probes (16 primary and 14 secondary) and nine boreholes were completed to collect soil samples and temporary open-hole 1-inch wells were installed in each borehole to collect groundwater samples.

Acetone was detected in soil sample SP-23-2-4 at a concentration of 60 micrograms per kilogram, slightly exceeding the USCO for the compound of 50 micrograms per kilogram. Acetone is a common laboratory contaminant and is not considered a contaminant of concern at the Site. All other detected VOCs were at concentrations below their respective USCO and CSCO.

Six SVOCs were detected at concentrations exceeding their respective USCO in soil sample SP-

29-1-3. Benzo(a)pyrene was also detected at a concentration exceeding the CSCO in this sample. Benzo(B)fluoranthene was detected at a concentration exceeding the USCO in soil sample SP-37-1-3. SVOCs were not detected in any other samples at concentrations exceeding their respective USCO or CSCO.

Total PCB concentrations exceeding the USCO were identified in five samples (SP-28-1-3, SP-19-1-3, SP-30-1-3, SP-32-2-4 and SP-33-0-2). The concentration of PCBs detected at SP-28-1-3 also exceeded the CSCO of 1,000 micrograms per kilogram. PCBs were not detected in the remaining samples at concentrations exceeding the USCO or CSCO.

At the request of the NYSDEC, a surface sample was collected at Outfall No.4 and analyzed for TCL VOCS, TCL SVOCs, and PCBs. Nine SVOCs were detected at concentrations exceeding the respective CSCO. Based on maps of the storm water drainage system, discharge to Outfall No. 4 is only from runoff from parking areas. Total PCBs were detected in the outfall sample at a concentration of 210 µg/kg. This concentration exceeded the USCO for the compound of 100 µg/kg, but not the CSCO of 1,000 µg/kg, which was the cleanup objective established by NYSDEC for the previous remediation of the drainage swale.

On September 26 and 27, 2011, nine temporary well points were installed in the open probe-holes at SP-22, 25, 30, 32, 34, 36, 42, 46, and 49. Eight groundwater samples were collected and analyzed for TCL VOCs, SVOCs, and PCBs. Samples collected at SP-42 and SP-49 were not analyzed for SVOCs and PCBs due to insufficient groundwater recharge.

Benzene was detected in the groundwater sample at SP-49 and trichlorofluoromethane was detected in the groundwater sample at SP-22 at concentrations slightly exceeding the respective Class GA criteria. No other VOCs were detected in the groundwater samples at concentrations exceeding the respective Class GA criteria.

Four SVOCs were detected in the groundwater samples at concentrations exceeding the respective Class GA criteria at three locations (SP-22, SP-25, and SP-34). These compounds are benzo(a)anthracene, benzo(b)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene.

Total PCBs were detected in groundwater samples from locations SP-30, SP-32, and SP-36 at concentrations exceeding the Class GA criteria for the compound of 0.09 µg/L. PCB concentrations in these three samples were 0.77 µg/L (SP-30), 3 µg/L (SP-32), and 13 µg/L (SP-36). These exceedances are most likely the result of turbid water samples from the temporary well points. PCBs were not detected in the other groundwater samples at concentrations above the laboratory method detection limits. The findings of the remedial investigation are outlined in the Final Remedial Investigation/Interim Remedial Action/Human Health Risk Assessment Report (PARS, December 2014).

4.0 Response Action Summary

4.1 Interim Removal Action for Soil – Pre-ROD

An interim remedial action (IRA) was performed on September 29, 2011. The IRA included excavation of an approximately 10-foot (north-south) by 12-foot (east-west) area to a depth of

approximately 5 feet bgs in the vicinity of the former exploratory excavation, TP-12. Excavation boundaries and confirmatory soil sample locations are depicted on Figure 9. Approximately 40 tons of soil was removed from the excavation and transported off-site for proper disposal.

During soil excavation activities, perched groundwater was observed at approximately two feet bgs. Perched groundwater exhibiting sheen was pumped from the excavation using a vacuum truck. Approximately 2,000-gallons of groundwater was removed from the excavation and transported off-site for proper disposal.

At the completion of soil removal activities, an approximately 8-foot long section of the 6-inch diameter cast iron fire protection main was removed from within the limits of the excavation. The open ends of the pipe were fitted with a Fernco and PVC cap prior to backfilling.

Five confirmatory soil samples were collected from this excavation. The confirmatory soil samples were analyzed for TCL VOCs, TCL SVOCs and PCBs. No compounds were detected in the confirmatory samples at concentrations exceeding the applicable USCOs and CSCOs (NYSDEC Unrestricted Use Soil Cleanup Objectives (USCO) and Commercial Use Soil Cleanup Objectives (CSCO).

The findings of the remedial investigation are outlined in the Final Remedial Investigation/Interim Remedial Action/Human Health Risk Assessment Report (PARS, December 2014). Because this IRA eliminated residual contamination in soil and the criteria for Industrial Land Use were met, no additional response actions were required for soil.

4.2 Basis for Taking Response Actions for Groundwater

The basis for taking action was due to contaminants remaining in groundwater at concentrations that exceed their respective maximum contaminant limits (MCLs), as established under the Safe Drinking Water Act and water quality criteria established under Section 304 or 303 of the Clean Water Act. The MCLs are set levels per the NCP, that should be attained to define beneficial use of the groundwater. Prior interim remedial actions have reduced the risk below acceptable levels for the current and foreseeable Land Use based on the Light Industrial zoning. The risk assessments evaluated potential risks to a worker using a Commercial/Industrial Exposure Scenario. The zoning and Deed restrictions on the Land Use makes the Site safe for its current Land Use. The restrictions are protective of the public health, welfare, and environment from actual or threatened releases of hazardous substances into the environment.

4.3 Remedy Section

The selected Remedy in the 2015 ROD for the Site was Alternative 1 -No Further Action. This determination is based on the findings of the corrected human health risk assessment (HHRA) that concluded that following the IRA there were no remaining unacceptable risks from exposure to soil and groundwater for the commercial/industrial worker or construction worker. Only the Commercial/Industrial Land Use and associated Exposure Scenarios were assessed in the HHRA since the Reasonably Anticipated Future Land Use (because of site

location and current zoning) is Industrial Land Use. This ROD included plans for including a restriction in the deed for the Site that prohibits the use of the land for residential purposes, including a restriction in the deed that prohibits the use of groundwater. While the soil on the site meets residential standards, the restriction on residential usage was included in the transfer deed as a precautionary measure requested by the state, since DOD does not has the ability to enforce Land Use Controls on property after transferring ownership. CERCLA reviews will be conducted every five years until the Army and State conclude these reviews are no longer necessary.

4.4 Status of Remedy Implementation

NYSDEC concurs with the selected remedy. The ROD Approval Letter From NYSDEC dated 27 March 2015 is included as Appendix E. DOD no longer maintains ownership and control of the property, and a restriction prohibiting residential land use, which includes residential groundwater use, was included in the deed transferring the site.

5.0 Five Year Review Process

5.1 Five Year Review Team Members and Community Involvement

The team includes engineering, geologic and environmental professionals. The team is led by Craig Combs, Project Manager for the USACE Louisville district, and Will Clabaugh, Matthew Riley, Sara Durr, and Matthew Moss of the USACE Louisville District. The Site visit was performed by the Laura Rosten from the USACE, Buffalo District. Other support members from the USACE, Louisville District provided internal technical review (ITR) for this Five Year Review.

5.2 Data Review

A review of relevant documents including the 2015 ROD and historical technical reports was completed for the Five Year review. The following documents were reviewed:

- *Niagara Falls Armed Forces Reserve Center* No Further Action Record of Decision (February 2015)
- *Quitclaim Deed, 9400 Porter Road (Former Niagara Falls Army Reserve Center),* Town of Niagara, New York *(September 2018)*
- *Quitclaim Deed, A Portion of 9400 Porter Road (A Portion of the Former Niagara Falls Army Reserve Center),* Town of Niagara, New York *(April 2019)*

5.3 Site Inspection

On 28 July 2020 Laura Rosten of the USACE-Buffalo District visited the subject property. The site is surrounded by a steel fence with a secured gate and access was not possible. The site is still mostly vacant, and no new construction is present on or around the site. The site visit form can be found in Appendix C.

5.4 Interviews

Phone interviews were conducted on 8 July 2020. Individuals interviewed included:

- Brian McDonald, Environmental Engineer (Niagara Frontier Transportation Authority).
- Chuck Haseley, Zoning Officer/Building Inspector (Town of Niagara).
- Jordan Litwiniak, Vice President, Development and Operations (Reger Holdings).

Copies of the completed interview forms can be found in Appendix C. Results of the interviews indicated that the remedy of No Further Action is working as intended. All people interviewed consider that the remedy has been a success to date.

6.0 Technical Assessment

The main objective of a Five Year Review is to evaluate if the remedy at a site is or will be protective of human health and the environment. The technical Assessment of the protectiveness of the remedy for each site is based on the responses to these three questions:

- Question A: Is the remedy function as intended by the decision documents?
- Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objections (RAOs) used at the time of remedy selection still valid?
- Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

Question A: Is the remedy function as intended by the decision documents?

Yes. The current Land Use is consistent with the Industrial Land Use specified in the ROD. Additionally, the property-use zoning remains as Light Industrial which is consistent with the requirements of the ROD and selected remedy. There is no residential use of groundwater. The 2019 Deed includes an Environmental Protection Provision that prevents residential usage, including residential groundwater usage. Additionally, interviews with landowners/ and municipal officials and site visits indicate the selected remedy is working as intended in the ROD. No residential use of the property was noted during the Site visit.

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

Yes, all assumptions are still valid. The exposure assumptions used in the HHRA remain valid. There have been some changes in the toxicity values for certain chemicals assessed in the HHRA but these are not significant changes that would affect the results of the HHRA. The changes in toxicity values have occurred mainly for SVOCs, in particular for benzo(a)pyrene and similar compounds have had their toxicity values increased. The RAOs are not based on specific cleanup values and the Land Use is restricted to Industrial. There have not been any changes to the cleanup values and the MCLs, which were the basis for the restrictions on groundwater use, have not changed.

However, the RAOs no longer apply to the current HHRA results and are not related to the NFA ROD.

Question C: Has any other information come to light that could call into question the

protectiveness of the remedy?

No, there has not been any new information that would call into question the protectiveness of the remedy.

7.0 Issues

No issues have been identified that would affect the protectiveness of the remedy.

8.0 Other Findings

In addition, the following are recommendations that were identified during the FYR and may improve management of LUCs but do not affect current and/or future protectiveness:

Table 2: Other Findings

Finding	Recommended follow-up actions
RAOs not applicable	It is recommended that the RAOs are updated. The RAOs were developed when a risk assessment showed unacceptable risk to construction workers due to an error in exposure assumptions and were not updated when the risk assessment was corrected. The incorrect RAOs that were inadvertently included in the NFA ROD should be withdrawn. This can be accomplished via Explanation of Significant Differences.

9.0 Protectiveness Statement

The remedy at Niagara AFRC is protective of human health and the environment.

The risk assessment conducted at the site shows that there is no risk to human health and the environment and that no action is required under commercial and residential land usage. Review of the current Deed shows LUCs are in place (Deed restrictions on residential use), and the Town of Niagara zoning review confirms that there is no plan for residential use.

10.0 Next Review

The next Five Year Review is due 23 April 2025.

11.0 References

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