J&L Steel Site

St. Lawrence County

Clifton, New York

INTERIM SITE MANAGEMENT PLAN

NYSDEC Site Number: 8706728, 645029 & S645029

USEPA ID # [Z2BF-FPN: E14202]

Prepared for:

St. Lawrence County

County Courthouse

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Revisions to Final Approved Site Management Plan:

Revision No.	Date Submitted	Summary of Revision	NYSDEC Approval Date

MAY 2021

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LIST OF ACRONYMS AND UNITS

CAMP	Community Air Monitoring Plan
DER	Division of Environmental Remediation
EE	Environmental Easement
EC	Engineering Controls
FT/BGS	Feet Below Ground/Grade Surface
HASP	Health and Safety Plan
IC	Institutional Controls
IRM	Interim Remedial Measure
J&L	Jones and Laughlin Steel Site
MNA	Monitored Natural Attenuation
NYCRR	New York Code of Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PCBs	Polychlorinated Biphenyls
PRR	Periodic Review Reports
RI	Remedial Investigation
SMP	Site Management Plan
SSV	Sub-Slab Vapor
SVOC	Semi-Volatile Organic Compound
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

EXECUTIVE SUMMARY

The following provides a brief summary of the controls implemented for the Site, as well as the inspections, monitoring, maintenance and reporting activities required by this Site Management Plan:

Site Identification: **NYSDEC Site Numbers 8706728, 645029 & S645029**
J&L Steel Site
NYS Route 3 and County Route 60

Institutional Controls:	1. The property may be used for commercial and industrial use
	2. All Engineering Controls must be operated and maintained as specified in this SMP.
	3. All future activities on the property that will disturb any soils or residual contamination must be conducted in accordance with this SMP.
	4. The use of the groundwater underlying the property is prohibited and will require re-evaluation prior to any potential future use.
	5. Access to the property shall be permitted in order to evaluate the continued maintenance of any and all controls.
	6. All ECs must be inspected at a frequency and in a manner defined in the SMP. This statement is to be included here if there are ECs per the site's remedial program.
Engineering Controls:	1. Cover System
	2. Vapor Barrier
	3. Slab-On-Grade Construction
	4. Sub-Slab Depressurization System (SSDS)
	5. Monitored Natural Attenuation (MNA)
	6. LNAPL collection and treatment

Site Identification: **NYSDEC Site Numbers 8706728, 645029 & S645029**
J&L Steel Site
NYS Route 3 and County Route 60

Engineering Controls:	7. Interceptor trench monitoring	
	8. HDPE Liner	
Inspections:		Frequency
1. Cover system		As needed
2. LNAPL collection system		As needed
3. Interceptor trench		Quarterly
Monitoring:		Frequency
1. Groundwater monitoring		As needed
2. LNAPL gauging in groundwater wells		Quarterly
3. LNAPL collection system performance		Monthly
4. Interceptor trench monitoring		Quarterly
5. Stream seep monitoring		Quarterly
Maintenance:		Frequency
1. Cover system		As needed
2. LNAPL collection system		As needed
Reporting:		Frequency
1. Cover system repair		Annually
2. LNAPL treatment system data		Annually
3. LNAPL gauging in groundwater wells results		Annually
4. LNAPL collection system performance		Annually

5. Interceptor trench monitoring results	Annually
6. Stream seep monitoring	Annually

Further descriptions of the above requirements are provided in detail in the latter sections of this SMP.

1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 Introduction

This document is an element of the remedial program at St. Lawrence County owned parcel of the former J&L Steel Project located in the Town of Clifton, St. Lawrence County, New York (hereinafter referred to as the "Site"), designated as Parcel D in accordance with the site survey dated March 2, 2021.

1.1.1 General

The Site is located in the Town of Clifton, St. Lawrence County, New York. A figure showing the Site location and boundaries is provided in Figure 1. The parcel D is approximately 40 acres in size, and included several large, abandoned buildings that have been demolished. The former buildings areas and former parking areas have been regraded for future development, while the remainder of the property is wooded. The Little River flows from east to west through the central portion of the site. A 2.5-mile long strip mine, now abandoned and flooded, borders the site to the north.

This Site Management Plan (SMP) was prepared to manage any residual contamination at the site, during remediation and following completion of remedial activities. All reports associated with the Site can be viewed by contacting the NYSDEC or the document repository located at the Clifton Community Library, 7171 NY-3, Cranberry Lake, NY 12927.

This interim SMP was prepared by the New York State Department of Environmental Conservation's (NYSDEC) Division of Environmental Remediation's (DER) Spills Program staff on behalf of St. Lawrence County, in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated November, 2009 (NYSDEC, 2009). This interim SMP addresses the means for implementing the Institutional Controls (ICs) and Engineering Controls (ECs) that are required to be protective of human health and the environment.

1.1.2 Purpose

ICs and ECs have been incorporated into the Site plan to control potential exposure to any residual contamination and to ensure protection of public health and the environment. An IC in the form of an environmental easement, which has been recorded with the St.

Lawrence County Clerk, will require compliance with this interim SMP. The ICs places restrictions on site use, and mandates operation, maintenance, monitoring and reporting measures for all ECs and ICs. The IC will take the form of an Environmental Easement granted to the NYSDEC by the current site owner, St. Lawrence County. This interim SMP specifies the methods necessary to ensure compliance with all ECs and ICs required for any residual contamination within Site. This plan has been prepared by the NYSDEC, and compliance with this plan is required by the property owners and its respective successors and assigns. This interim SMP may only be revised with the approval of the NYSDEC.

This interim SMP provides a description of all procedures required to manage any residual contamination, including, but not limited to:

1. implementation and management of all ECs;
2. media monitoring;
3. implementation and management of future intrusive activities;
4. operation and maintenance of all treatment, collection, containment, or recovery systems; and
5. performance of periodic inspections and preparation of Periodic Review Reports (PRR).

To address these needs, this SMP includes three plans:

1. an Engineering and Institutional Control Plan for implementation and management of EC/ICs;
2. a Monitoring Plan for implementation of Site Monitoring; and
3. an Operation and Maintenance Plan for Implementation of remedial collection, containment, treatment, and recovery systems (including, where appropriate, preparation of an Operations and Maintenance Manual for complex systems).

This plan also includes a description of PRRs for the periodic submittal of data, information, and recommendations.

1.1.3 Revisions

Revisions to this interim SMP will be proposed in writing to the NYSDEC's project manager contacts or at the NYSDEC's discretion. In accordance with the ICs for the Site, the NYSDEC will provide a notice of any approved changes to the interim SMP or notify any

changes NYSDEC makes on its own, and append these notices to the interim SMP that is retained in its files.

The intent of the interim SMP is to fill the site management needs while the site is undergoing continuing remedial efforts. The interim SMP will only be finalized once remedial efforts or systems in place have satisfied the remedial goals for the site. A final feasibility study and decision document will be completed before the interim SMP is completed into a final SMP.

1.2 Site Background

This section provides a description of the location and history of Site, nature and extent of contamination, and the remedial actions.

1.2.1 Site Location and Description

The Site covers 40 acres in the northwest region of the Adirondack Mountains in Upstate New York (NY) (Figure 1). The Site is located in Clifton, NY approximately two miles west of the Village of Star Lake in the Little River headwaters. The Little River drains into the Oswegatchie River about four miles downgradient of the Site. The Oswegatchie River drains the sub-watershed and discharges into the St. Lawrence River at Ogdensburg, NY. The boundaries of Parcel D are more fully described in Appendix A.

1.2.2 Site History

The J&L facility operated from 1941 to 1978, processing iron-titanium (Fe-Ti) ore from the historic Benson Mine. The Benson deposit was first identified in 1810 during the surveying of a proposed military supply route connecting the cities of Albany and Ogdensburg. The survey team noted a magnetic anomaly that disturbed compass bearings in the mine vicinity. The orebody was officially discovered a few decades later by the New York Geological Survey. The mine prospect was purchased by David Benson in 1832, but early attempts to develop the ore deposit failed due to the lack of infrastructure, and other mineable resources nearer to the Carthage-Adirondack Railroad.

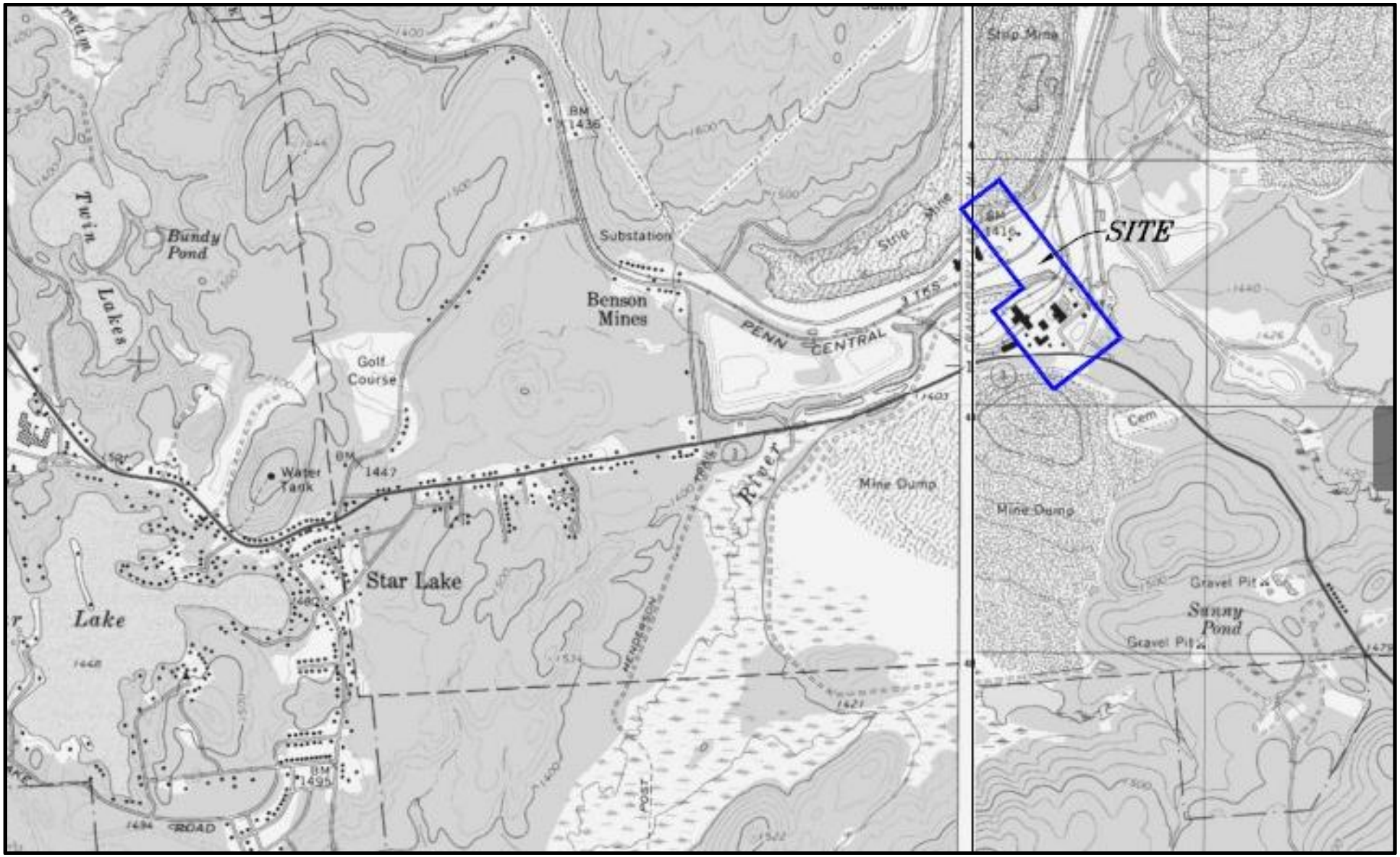
In the late 1880s, increased development in the northwestern Adirondack revived interest in the Benson orebody, with the Magnetite Iron Ore Company determining the orebody had a resource potential of 35.6 million tons of iron and mine life of 50 years. Based on this

substantial economic resource, the Carthage-Adirondack Railway was extended to the Site and by 1890 the mine had entered in to production. The opening of the Benson Mine included the development of the Village of Star Lake to house the workers. The mine operated sporadically from 1890 to 1900 due to the volatility of the iron market and the opening of low-cost iron deposits that were better positioned to provide raw material to foundries in Ohio and Pennsylvania. The mine was idle from 1900 to 1907, but reopened in 1907 and operated intermittently until 1919.

The mine remained closed from 1919 till 1941, but with the onset of World War II it modernized, reopened, and expanded production. A major part of the modernization was the construction of the J&L Facility that utilized technologies including a sintering technology. This process utilized at least seven sintering furnaces that consumed approximately 2¼ million gallons of #2 fuel oil per year. The oil was transported to the Site by rail and stored in six aboveground storage tanks (ASTs), three 30,000-gallon (gal) tanks and three 8,000-gal tanks.

The J&L Facility was constructed on an “upper terrace” above a former railyard (south plain) that boarders the River (Figure 5). Mine production began to slow in the mid-1960s as ore reserves were depleted with mining activities ceasing entirely by 1978. During the decommissioning phase of the facility and mine, oil seeps began to emerge in the River. It is conceivable that constant dewatering of the Benson Pit lowered the water-table, preventing the migration of oil into the Little River. The oil was eventually mobilized into the Little River as the open pit flooded and groundwater levels near the Site vicinity returned to normal conditions.

Figure 1
Site Location Map



1.2.3 Site Surface Geology

In general the following geologic units are found across the Site.

- Fill Material
- Marsh Mat
- Glacial River Deposits

The fill materials on the Site are all placed by human activity and can be made up of the following types of materials:

- **Fill (clean cover material):** brown, tan and orange clayey silt to fine sand, with some rounded rock fragments. The fill is generally loose and dry. Less than 2 feet thick.
- **Building Debris:** crushed concrete and brick in varying sizes, with rebar and steel structural components, nails, bolts, etc. This material is compacted and below grade and filled in with clean sand and soil. Anywhere from 5 to 15 feet thick in the location of former Site buildings.
- **Black Tailings:** black, fine to medium grain tailings, with some rounded pebbles. Tailings have weakly to well-developed horizontal bedding lines, relatively dense, and moist to damp. Less than 10 feet thick.
- **Boulders:** mine waste (boulders) and with other fill (i.e., clay, silt sand and cobbles). The boulders ranges from 2 to 13 feet thick.
- **Mixed River Deposits and Green Tailings:** dark gray to gray, clayey silt to fine sand, with pebbles and cobbles. The mixed material is poorly sorted, dense, soft wet or moist gook/mud.

The marsh mat on the Site is the remnants of an old marshland and is made up of the following materials:

- **Marsh Mat:** dense mat of decomposing roots, grasses, reeds, branches and twigs. The under marsh mat is a black to dark gray, organic-rich clay. The marsh mat acts as a confining unit where it is found. The marsh mat is not consistent site-wide and has localized holes/penetrations where it is found. The moisture content of the marsh mat ranges from dry to saturated. The marsh mat is less than 4 feet thick were found.

The glacial rivers deposits on the Site are all placed by nature and can be made up of the following types of materials:

- **Overbank Deposits:** black to light gray, clayey silt to fine sand with organic matter (i.e. wood fragments, roots, grass, reeds, etc.). The overbank deposits can be up to 5 feet thick when found.
- **Glacial River Sand and Gravel:** the glacial river sand and gravel deposits is made of the three distinct units below:
    - Upper Sand: spotted, light gray to dark gray and tan to white, silt to course sand
    - Channel Deposits: coarse gravels mixed with sand
    - Lower Sand: spotted, light gray to dark gray and tan to white, silt to course sand

1.2.4 Site Bedrock Geology

The following section provides a summary of the geologic conditions within the Site. Additional information can be found in the document repositories.

Bedrock geology of the Adirondack region of New York State where the Site is located is made up of metamorphic rocks which have made through high temperatures and pressures at depths of up to 30 kilometers (19 miles) in the earth's crust. This deformation occurred approximately 1.1 billion years ago when the earth's crust was compressed during a continent-to-continent collision.

The Benson Mines bedrock is located in an area that has been more intensely folded than the rest of the central Adirondacks. The gneiss folds offered an easy pathway for dissolved magnetite grains and concentrated them into ore bodies.

The quartz magnetite gneiss of the Benson Mines is above ground in a band about 1,000 feet wide and nearly three miles long between Benson Mines and the village of Newton Falls. The ore body appears as rusty brown with coarse grains of magnetite.

Most of the Benson Mines property to the south of the ore body, in the vicinity of NY Route 3, bedrock is made up of hornblende syenite gneiss and hornblende granite gneiss. The hornblende syenite gneiss makes a long, linear body about 1,000 feet wide south of the ore body, moving southwest between the Little River and Star Lake. The dark mineral in the rock is hornblende, which gives this medium to coarse-grained rock a dark grey color.

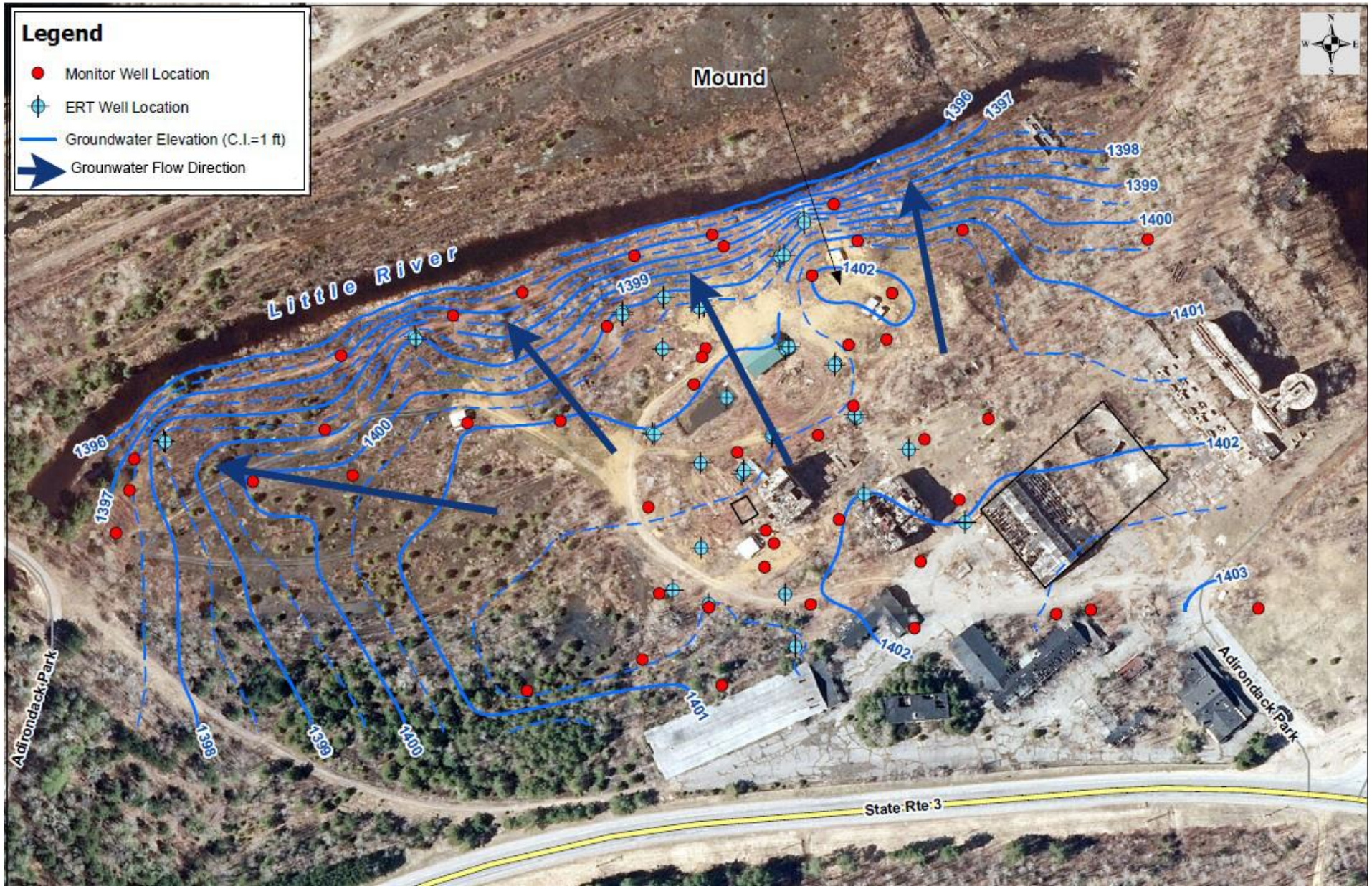
1.2.5 Hydrogeology

The site is in the Oswegatchie sub-watershed within the St. Lawrence River Watershed. The Oswegatchie sub-watershed is further separated into ten third-order sub-watersheds that include the site's Little River drainage (NYSDEC, 2009).

The Little River is a tributary to the East Branch of the Oswegatchie River. The headwaters of the tributary are located approximately three miles upgradient of the site in an intermountain meadow. The Little River is characterized by shallow and fast-moving waters that are punctuated by broad open marshlands. The Little River discharges into the channel of the Oswegatchie River about four miles downgradient of the site. The drainage is filled with glacier river deposits, but in the site vicinity the glacial river sediments are covered by mine waste, tailings and/or assorted fill material associated with the Benson Mine and/or J&L ore processing facility (Leonard and Buddington, 1964). At the site, the Little River is restricted to a man-made channel but was an open marshland prior to development. The filling of the marshland began in the 1890s, with the construction of the Carthage-Adirondack Railroad on the J&L site. During the construction of the railyard, a bypass canal was engineered through the site and the Little River was permanently re-routed to the present-day channel. Groundwater is typically encountered between five and ten feet bgs in the south plain area of the site. Where the marsh mat geological unit is found, groundwater is divided into an upper and lower unit. Currently groundwater flows predominantly north towards the Little River and may be influenced by the 200-foot recovery trench located along the embankment of the Little River directly north of the former Sintering Area. The second flow direction likely follows the former course of the Little River, which was filled during the 1940s. This flow trend begins in the vicinity of the former above ground storage tanks and spirals westerly until it connects with the present course of the Little River in the area just upstream of an existing multi-culvert bridge. See Figure 2 for the site's general groundwater flow direction.

Surface water runoff at the site primarily drains north to the Little River. The steep slopes in the Sintering Area direct runoff from the Main Processing Area north towards the Little River. The area south of the Ore Crushing Area slopes toward the Little River.

Figure 2
Groundwater Flow Map



1.3 Summary of Remedial Investigation Findings

Late 1980's Preliminary Site Assessment

The site was first investigated in response to an oil sheen which was reported on the Little River on November 7, 1987. Staff from the NYSDEC subsequently investigated areas along the Little River to locate the source of the sheen. Oil was observed to be seeping from the embankment of the Little River in the area of the Benson Mines facility. To limit the seepage of oil into the Little River, Fourth Coast Pollution Control installed a 200-foot-long oil recovery trench along the Little River in 1988. Oil and water from the trench were pumped from a vertical well to an open pit located near the former AST area for Benson Mines. (CDM 2009) In the late 1980s, the NYSDEC completed a preliminary site investigation, which identified a significant concentration of mobile fuel oil near the former ASTs and sintering furnaces (Atlantic Testing Laboratories, 1989). The volume of fuel oil released from 1941 to 1978 has not been determined.

Site Characterization Investigation (2012)

A site characterization investigation was conducted during 2012 under the guidance of NYSDEC to further assess potential contamination at the site. Several tasks were conducted to complete this assessment including:

- On-site building evaluation;
- Asbestos investigation;
- Petroleum product survey and assessment;
- Evaluation of the petroleum product recovery system that operated between 1993 and 1999;
- Groundwater investigation;
- Surface soil sampling (including off-site transformer locations);
- Little River surface water and sediment investigation; and

Based on the 2012 site investigation results, supplemental investigation activities were conducted in 2013 to determine if there was ongoing discharge of petroleum into the Little River and if other site contaminants were comingled with the petroleum plume and

impacting the Little River. Further site investigation activities were conducted at the site in September 2015 and included the following:

- Additional inspection of pipeline tunnels;
- Visual inspection of suspected asbestos disposal area;
- Building sub-slab soil sampling;
- Building drain sampling; and
- Surface soil sampling.

The results of the efforts of these investigation activities are presented in The Site Characterization Report for the Former J&L Steel Site (Parsons, 2016).

USEPA Site Assessment (2017)

The Environmental Protection Agency (USEPA) Region 2 conducted a site assessment and developed a Conceptual Site Model (CSM) to guide the removal evaluation and select a remedial alternative to abate the discharge of oil into the Little River from the site.

The site assessment was conducted from 2015 through 2016 and utilized several technologies, including:

- Laser induced fluorescence (LIF);
- Cone penetrometer (CPT);
- Electrical conductivity (EC);
- Vibracore sampling;
- Light non-aqueous phase liquid (LNAPL) bail-down testing;
- Sonic drilling for borings and soil sampling;
- Monitoring well installation; and
- Test pitting.

The results of the test pitting indicated that the HDPE liner was not installed to the specified depth in certain areas. Four locations along the western portion of the site the liner was installed at a depth shallow enough to allow the migration of NAPL to the Little River. An oil sheen was observed on the groundwater surface in 10 of the 14 test pits.

Sediment samples collected within the Little River channel margins were analyzed for total petroleum hydrocarbons (TPH). TPH concentrations ranged up to 4,620 parts per million (ppm) with an average concentration of 51 ppm. Results of the assessment were consistent with visual observations showing two areas in which NAPL was seeping into the Little River. The main seepage zone is located at the western limit of the site by the culverted river crossing and the secondary seepage zone was located approximately 1,200 feet up-gradient of the main seep.

The results of the laser induced fluorescence (LIF) and cone penetration testing (CPT) profiling were used to develop a three-dimensional model. The modeling indicated a LNAPL footprint over approximately 11.1 acres on the site with the highest impacts near the former ASTs in the south plain. Modeling additionally indicated attenuation of the LNAPL plume to the west and impacts along the riverbank consistent with the locations of the oil seeps.

USEPA LNAPL transmissivity and recoverability assessments showed evidence of mobile LNAPL found in six soil borings. Four soil boring locations that were converted to monitoring wells also accumulated LNAPL. Test pits were excavated at two locations where LNAPL was known to be present at depth. At one test pit location a frothy oil/water emulsion was observed, and a thin oil film developed over a 24-hour period. At the second test pit location, oil drained into the pit from the marshland mat material as groundwater rose in the excavation, also creating a frothy oil/water emulsion. The water level stabilized in less than one hour and a thin oil film was observed on the water surface.

In-well oil was identified in 12 monitoring well locations, three screened in the groundwater unit above the marsh mat and nine in the groundwater unit below the marsh mat. Eight wells gauged in November 2016 had in-well oil thickness greater than 0.5 feet. Wells screened below the marsh mat with oil present also exhibited varying vertical gradients indicated that oil confined below the marsh mat is under pressure.

USEPA’s site oil transmissivity calculations, when compared with ITRC’s appreciable LNAPL recovery transmissivity ranges, indicate that the average site transmissivity of <

0.5 ft^2/day falls between the low recovery threshold (< 0.8 ft^2/day) and the unrecoverable threshold (< 0.1 ft^2/day).

1.4 Summary of Remedial Actions

The following is a summary of the Remedial Actions completed on-site:

Curtain Wall and Product Recovery System

Containment of the oil body began in 1993 when a 1,500-foot-long high-density polyethylene (HDPE) curtain was installed along the south bank of the Little River as protection from oil releases (Figure 3). The HDPE curtain was designed to be reach a depth of 15 feet to contain mobile oil from entering the Little River. Four oil recovery sumps (MW4-MH, MW25-MH, MW26-MH, and MW27-MH) were installed inside of the HDPE curtain. The HDPE curtain worked temporarily, but eventually oil seeps reemerged in the Little River (Parsons, 2016).

From 1997 to 1999 three recovery trenches and recovery sumps fitted with oil/water separators were added to the recovery system and housed in two Conex containers in the south plain (former railyard). Oil captured from recovery sumps was pumped to a centrally located Remediation Building for storage in three ASTs having capacities of 20,000-gal, 5,000-gal, and 275-gal (Parsons, 2013).

PCB Interim Remedial Measure

The site characterization investigation identified several PCB “hot spots” where PCB soil concentrations exceeded the Soil Cleanup Objectives (SCOs) for commercial land use of 1 mg/kg. The PCB hot spots were further delineated during an initial pre-design investigation (PDI) effort completed in September 2016 and a supplemental PDI conducted in May 2017. Based on the results of the PCB PDI, an Interim Remedial Measure (IRM) was implemented from October 2018 through December 2018 to remove PCB-impacted soil from six locations on the site. Figure 4 shows the approximate locations of the PCB removal. Detailed metes and bounds of the PCB removal can be found in the 2019 IRM report by Parsons.

Figure 3
HDPE Curtain, Historic Recovery Trenches and Sumps, and USEPA Interceptor Trench

Figure 4
PCB Excavation Areas

Demolition of Site Structures

Demolition of the remaining site structures was initiated by the Development Authority of the North Country (DANC), St. Lawrence County, the St. Lawrence County IDA, and the Town of Clifton in the fall of 2017. Demolition activities completed to date include the removal of structures, slabs, and foundations of all major structures on the site. Within building footprints, foundation excavations were backfilled with crushed concrete or nearby fill. Figure 5 displays the locations of the demolition activities.

USEPA Interceptor Trench

The USEPA interceptor trench was installed in 2018 and 2019 by pre-trenching to remove large boulders and then finished with a one-pass trencher. The interceptor trench is located on the south bank of the Little River and approximately 10 feet south of the HDPE containment curtain. The interceptor trench incorporated the following design parameters:

- Length 1,300 feet (approximate)
- Width 24 inches (average)
- Depth 10 to 15 feet (depth varies with location)
- Monitoring wells 200 feet apart within the trench

Approximate plan view and section view design figures are shown in Figure 6. A map view of the interceptor trench is shown on Figure 3.

Figure 5
Demolition Plan

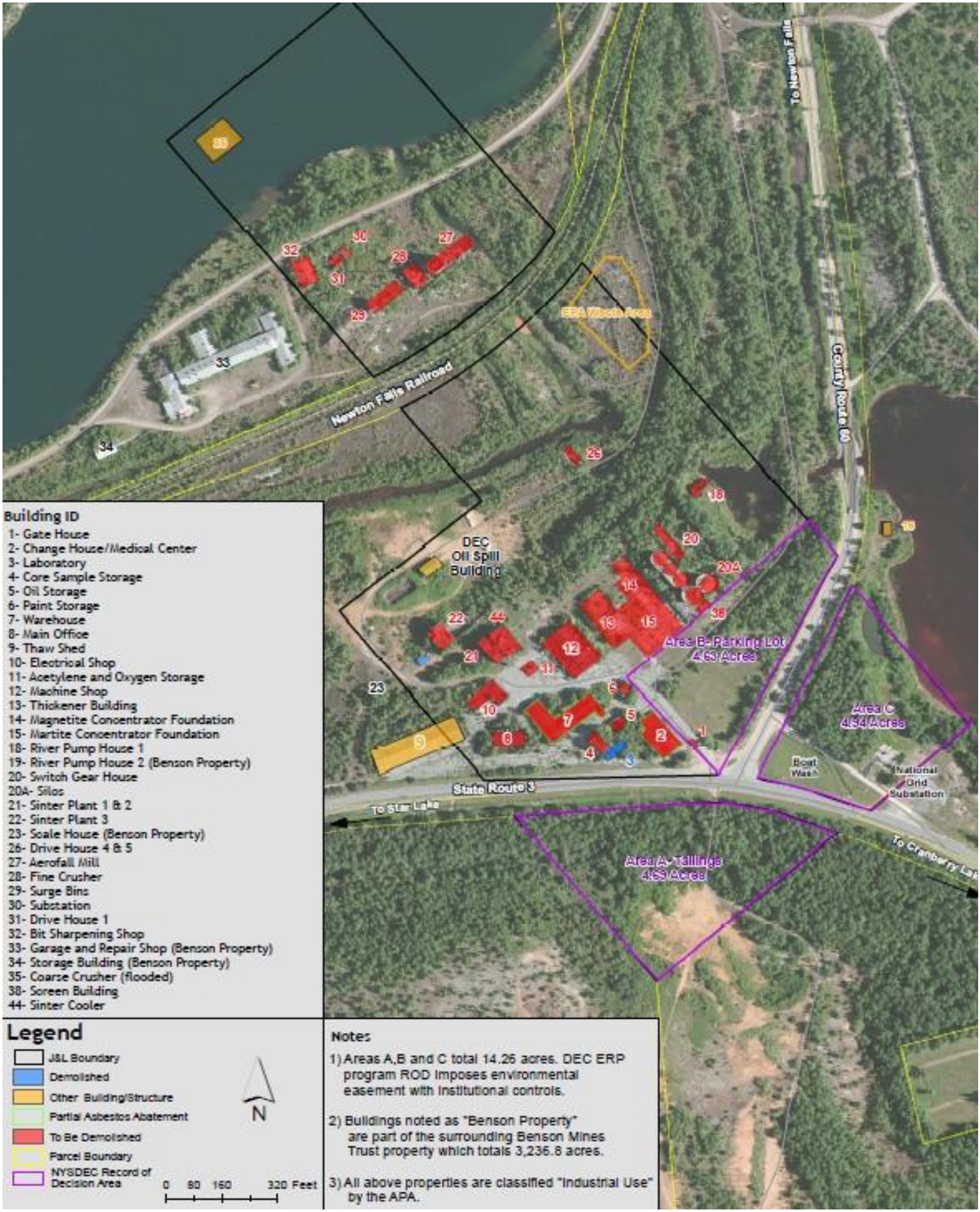
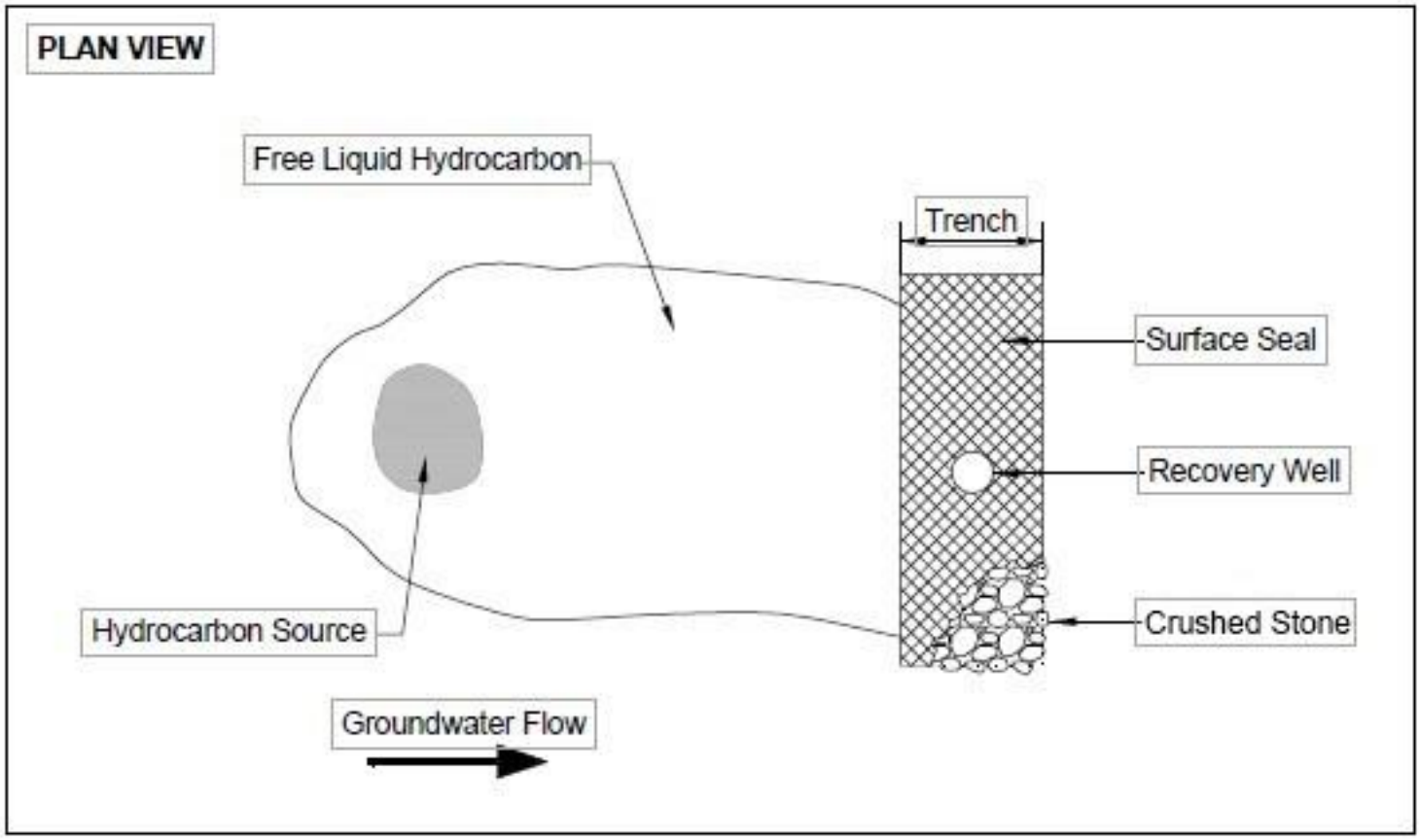
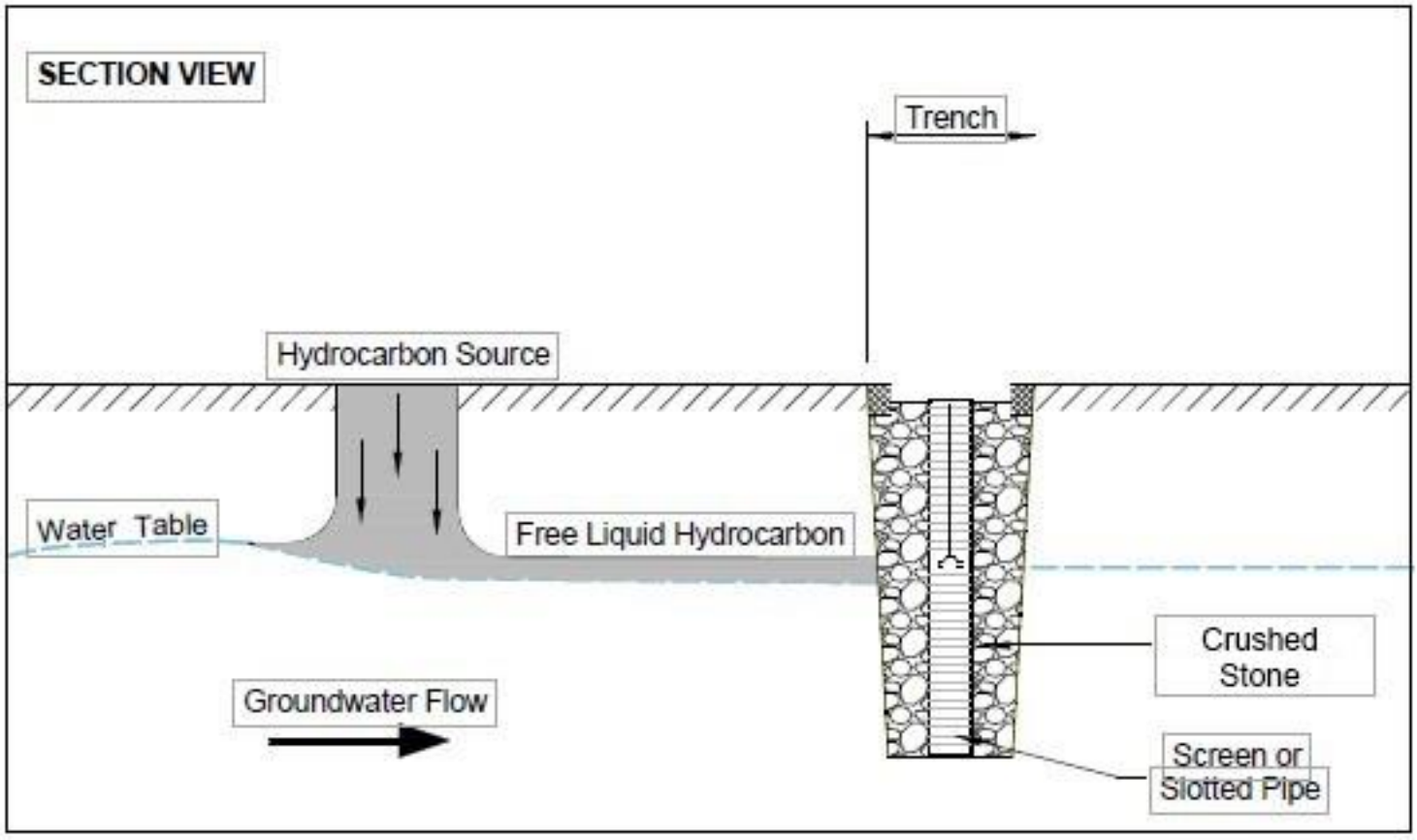


Figure 6
USEPA Interceptor Trench Design





Product Recovery System Expansion

In 2018 and 2019, NYSDEC Region 6 Spills expanded the existing recovery system to include approximately 1,250 linear feet of collection trench and 13 wet wells. The collection trench was constructed of stone backfill and equipped with two eight-inch diameter collection pipes set at approximately five feet and seven feet bgs. A map view of the current interceptor trench is found in Figure 7.

1.5 Residual Contamination

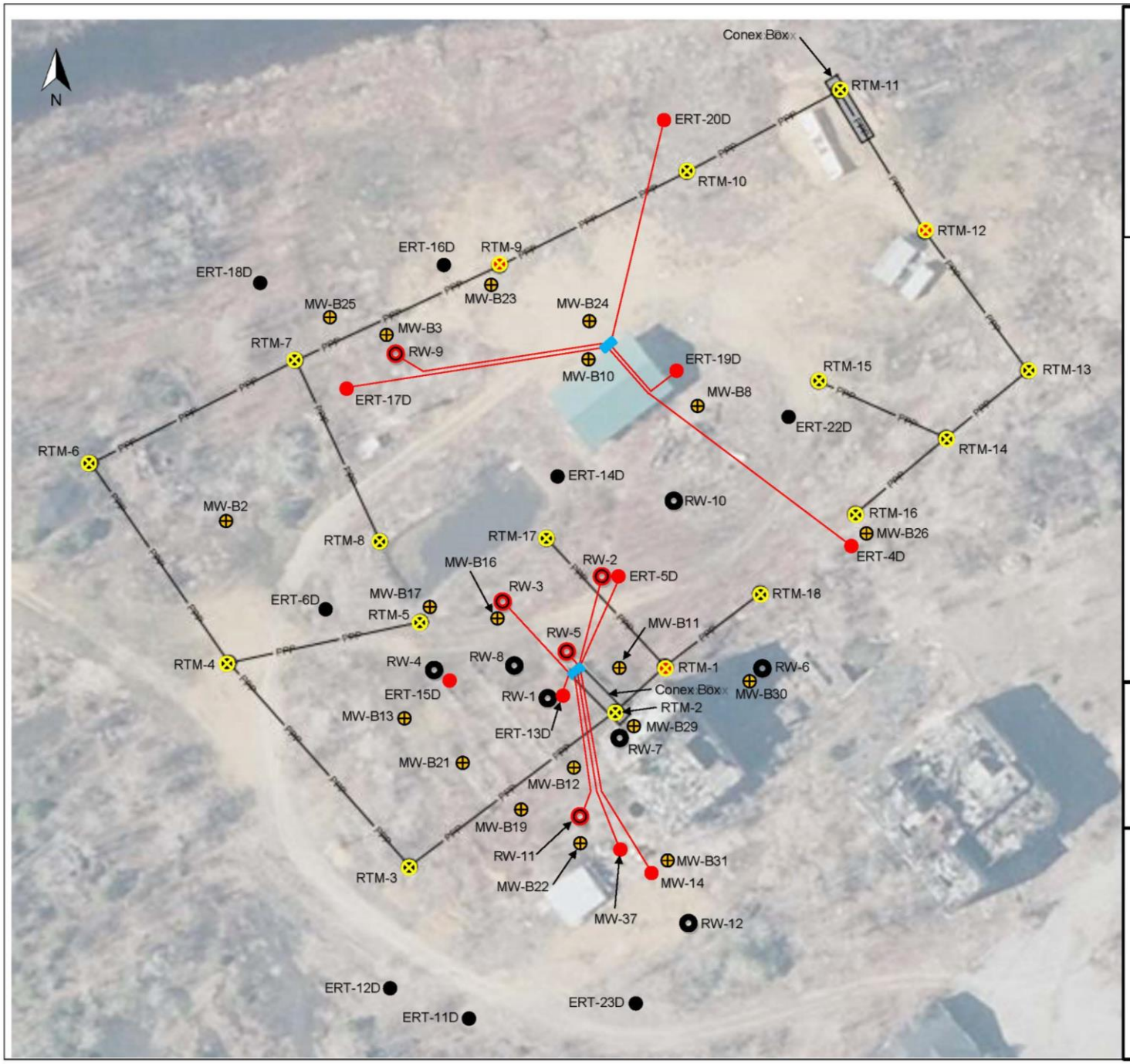
The results are coincident with visual observations, showing two zones in which oil is seeping into the River. The main seepage zone begins near the culvert at the extreme west end of the Site (Figure 8) and extends about 400 feet up-gradient. Based on visual observations and coincidence where the HDPE curtain is installed at shallow depths, the main seepage zone probably consists of a number of discrete discharge points along that 400-foot run. A secondary oil seepage zone is located about 1,200 feet up-gradient of the main oil seep.

LNAPL thickness were gauged at 17 monitor wells, with the thicknesses for shallow/perched groundwater unit are displayed in Figure 9. LNAPL thickness > 0.2 feet depict two isolated ‘pods’ in the perched zone. The LNAPL pods are hydraulically downgradient of the recovery trenches, located approximately 150 feet northwest of the former sintering furnace, and near the riverbank.

The main LNAPL body is located in the deep-confined zoned directly north of the escarpment (sintering furnaces). The LNAPL location is shown in Figure 10. LNAPL thickness > 0.2 feet have a footprint of 500 by 150-feet that is orient northeast positioned and between the recovery trenches. The main LNAPL body is directly north of the sintering furnace.

Figure 7

LNAPL Collection System



Map Legend:

- = Recovery Trench Manhole
- = Recovery Trench MH w/ Oil Skimmer
- = ERT Monitoring Well
- = ERT MW w/ Oil Skimmer
- = 6" Recovery Well
- = 6" Recovery Well w/ Oil Skimmer
- = 1" Monitoring Well
- = Skimmer Controller
- = Skimmer Convayence Tubing

FORMER J&L STEEL SITE

PRODUCT RECOVERY WORK PLAN

Proposed Skimmer Location Map

Created: 5/23/2019

NYSDEC – FORMER J&L STEEL SITE

NYS RT.3, STAR LAKE, NEW YORK 13690

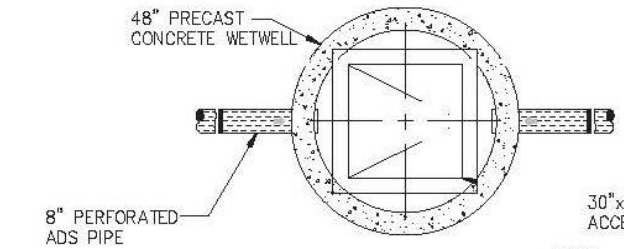
SOURCE: GOOGLE MAPS / **NOT TO SCALE**

NRC PROJECT NO: 123065

NYSDEC SPILL NO: 8706728

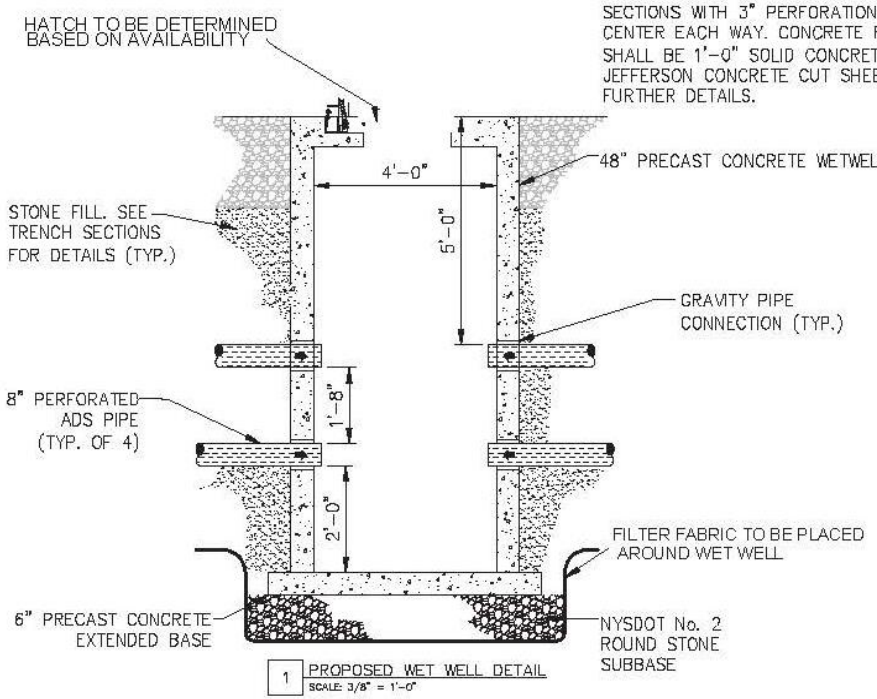
63 Trade Road, Bldg. 4
Massena, NY 13662
Phone: 315.764.1917
Fax: 315.764.9453
www.nrcc.com

Figure 8
LNAPL Interceptor Trench Manhole Construction Details



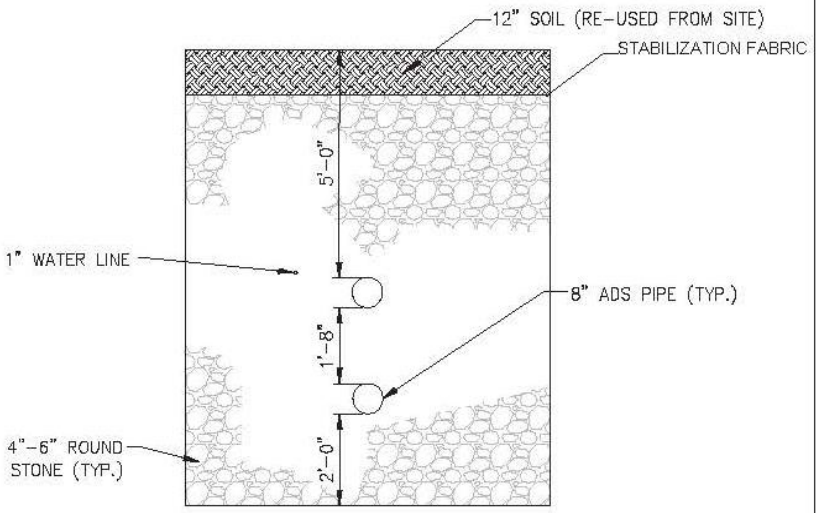
PROPOSED WET WELL PLAN
SCALE: 3/8"=1'-0"

NOTE:
1. CONCRETE MANHOLE BASE SECTION SHALL BE 2'-0" SOLID CONCRETE. THE TWO RISERS SHALL BE 4'-0" PERFORATED DRYWELL SECTIONS WITH 3" PERFORATIONS 12" ON CENTER EACH WAY. CONCRETE RISER TOP SHALL BE 1'-0" SOLID CONCRETE. REFER TO JEFFERSON CONCRETE CUT SHEETS FOR FURTHER DETAILS.



1 PROPOSED WET WELL DETAIL
SCALE: 3/8" = 1'-0"

NOTES:
1. DETAILS PER DIRECTION OF NYSDEC.



2 COLLECTION TRENCH DETAIL
SCALE: 3/8" = 1'-0"

NRC

MISC. SITE DETAILS

FORMER J&L SPILL SITE IRM
STAR LAKE NEW YORK

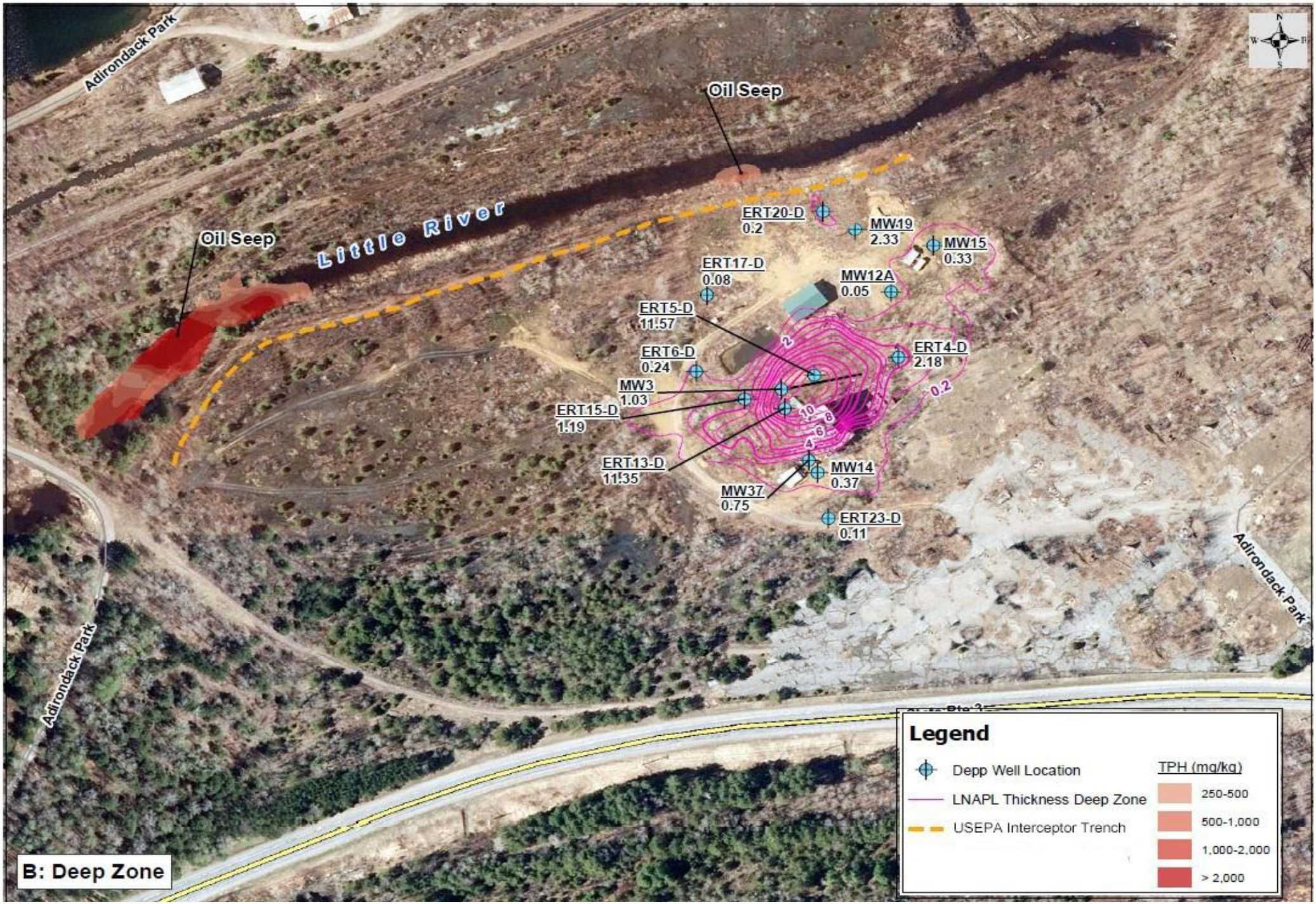
DATE: 3/2018

FIGURE 2

Figure 9, TPH Concentrations - Little River

Figure 10, Shallow/Perched Zone LNAPL Map

Figure 11, Deep Zone LNAPL Map



2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

2.1 Introduction

2.1.1 General

Since contamination in soil and groundwater exists beneath the site, ECs and ICs are required to protect human health and the environment. This Engineering and Institutional Control Plan describes the procedures for the implementation and management of all EC/ICs at the site. The EC/IC Plan is one component of the SMP and is subject to revision by NYSDEC.

2.1.2 Purpose

This plan provides:

- A description of all EC/ICs on the St. Lawrence County parcel;
- The basic implementation and intended role of each EC/IC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the features to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of EC/ICs, such as the implementation of the Excavation Work Plan for the proper handling of soil and groundwater during maintenance or redevelopment work; and
- Any other provisions necessary to identify or establish methods for implementing the EC/ICs as determined by the NYSDEC.

2.2 Engineering Controls

A description of all ECs including, but not limited to, those ECs that will be incorporated into the design of any future occupied structure (i.e., building, building extensions) is described below.

2.2.1 Engineering Controls Systems

The site will have the following primary ECs that will address any potential for contact with contaminated soil or groundwater, as well as vapors, as described below.

1. Site Cover
2. Slab-On-Grade Construction
3. Vapor Barrier
4. Sub-Slab Depressurization System (SSDS)
5. Monitored Natural Attenuation
6. LNAPL collection and treatment
7. USEPA Interceptor trench monitoring
8. HDPE Liner

2.2.1.1 Site Cover

Potential exposure to any remaining contamination in soil/fill within the site will be prevented by a site cover system that covers remaining contamination. The site cover system can consist of the following components:

- New or existing surface pavement (greater or equal to 6 inches of asphalt);
- New or existing buildings foundations (greater or equal to 6 inches of concrete); and
- New placement of or existing fill materials found site wide (greater or equal to 1 foot of material).

The Excavation Work Plan (Appendix C) outlines the procedures required to be implemented in the event the cover system is breached, penetrated or temporarily removed and/or any underlying residual contamination is otherwise disturbed.

2.2.1.2 Slab on Grade Construction

As a proactive measure in an effort to minimize the potential for vapor migration from the subsurface into the buildings, each building or building expansion will be built without a

basement within the limits of Figure 12. The slab-on-grade construction will reduce the potential for vapor migration into the first floor of the building.

2.2.1.3 Vapor Barrier

A vapor barrier will be placed below the slab of each newly constructed building or building expansion constructed on the parcel, as a proactive, precautionary measure within the limits of Figure 12. The soil vapor barrier shall be designed and installed to meet the NYSDEC and New York State Department of Health (NYSDOH) requirements for vapor intrusion mitigation and shall be approved and/or certified by a licensed professional engineer. The vapor barrier will include a polyethylene or similar membrane designed to retard vapors. The vapor barrier will mitigate the potential for VOCs from migrating into the building(s).

2.2.1.4 Sub-Slab Depressurization System

For newly constructed buildings, a passive sub-slab ventilation system will be installed below each of the building slabs and associated vapor barriers, as a proactive, precautionary measure, in an effort to provide a mitigative pathway to manage potential vapor that may accumulate beneath the vapor barriers within the limits of Figure 12. Structures that do not fall under this requirement include buildings not intended for long term occupancy (e.g. garages, storage units) and temporary buildings with ventilated or exposed foundations (e.g. work trailers). The system shall be designed and installed to meet the NYSDEC and NYSDOH requirements for vapor intrusion mitigation and shall be approved and/or certified by a licensed professional engineer. This system will be installed for passive operation with the ability to be retrofitted for active use, if required by NYSDEC). The passive sub-slab ventilation system shall be operated and maintained in accordance with Operation and Maintenance Plan to be prepared by the NYSDEC or the SSDS installation firm. To the extent the NYSDEC requires an active system or the property owner, in their discretion wishes to make the system active, the system shall be converted from a passive system to an active system, and shall be operated and maintained in accordance with the Operation and Maintenance Plan.

2.2.1.5 Monitored Natural Attenuation

Site-wide wells will be gauged for LNAPL quarterly basis. A representative number of wells shall be monitored throughout the parcel. LNAPL elevations and thicknesses will be gauged to determine the change overtime and movement of the LNAPL plume

2.2.1.6 LNAPL Collection System

The LNAPL collection system is comprised of several recovery wells, recovery manholes, skimmers and trenches. The system routes fluids to a remediation building that houses several USTs the store the product and groundwater for treatment/disposal. The current system layout is shown in Figure 7.

The systems operates during the warmer months and is winterized during sustained freezing temperatures. Operation, maintenance and optimization of the system is necessary for continued product recovery.

2.2.1.7 USEPA Interceptor Trench

The USEPA interceptor trench was installed south of the HDPE liner to collect migrating LNAPL in the upper unit. The trench location is displayed in Figure 3. LNAPL that migrates into the trench drops into gravel that is aerated with passive venting via well caps though out the wells installed in the trench. The aeration of the LNAPL is intended to promote breakdown before the product meets the HDPE liner.

2.2.1.8 HDPE Liner

A vertical, 15-ft. deep, 1,500 ft. long barrier wall made of 40-millimeter high-density polyethylene (HDPE) was installed in 1993 along the south bank of the Little River to a depth of approximately 11 ft. bgs. The HDPE liner location is found in Figure 3. The HDPE liner was installed to prevent migration of fuel oil directly toward the Little River. The wall is located down-gradient of the free product plume parallel to the bank of the Little River and between the river and the USPEPA interceptor trench.

Figure 12

Slab on grade, Vapor Barrier, and SSDS Building Area

2.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when effectiveness monitoring indicates that the remedy has achieved the remedial action objectives identified by a Decision Document. A Decision Document for the site will be prepared at a later date. The remedial systems will be in place through the development of a Decision Document and a revision of the Interim SMP to a Final SMP. The framework for determining when remedial processes are complete is provided in Section 6.6 of NYSDEC DER-10.

2.2.2.1 Site Cover

The site cover is a permanent control and the quality and integrity of this system will be inspected after an intrusive activity in perpetuity. Procedures for the inspection and maintenance of the site cover system are provided in the Monitoring Plan included in Section 3 of this SMP.

2.2.2.2 Slab on Grade Construction

Any new building or building expansion within the area of Figure 12 will be constructed using slab on grade building techniques. In the event that monitoring data indicate that below grade construction is a viable option, a proposal to discontinue the slab on grade construction requirement will be will be submitted to the NYSDEC.

2.2.2.3 Vapor Barrier and Sub-Slab Depressurization System (SSDS)

Any new building or building expansion within the area of Figure 12 will require the installation of a SSDS mitigation system, which shall include a soil vapor barrier and a passive sub-slab ventilation system that is capable of being converted to an active system. Once installed, the operation of such SSDS mitigation system will not be discontinued unless prior written approval is granted by the NYSDEC. In the event that monitoring data indicate that the vapor barrier and SSDS system is no longer required, a proposal to discontinue the vapor barrier installation and SSDS installation/operation will be submitted to the NYSDEC.

2.2.2.4 Monitored Natural Attenuation

LNAPL monitoring activities will continue until residual LNAPL meets the future established remedial action objectives and/or are consistently below NYSDEC standards. Monitoring will continue until deemed appropriate by the NYSDEC.

2.2.2.5 LNAPL Collection System

Product collection, treatment and monitoring activities will continue, until product is no longer feasible to recover. Section 6.6 of NYSDEC DER-10 will be used to make a determination when the LNAPL collection system is no longer feasible. Additional product source removal, treatment and/or control measures will be continually evaluated by the NYSDEC.

2.2.2.6 USEPA Interceptor Trench

The USEPA interceptor trench was intended to remain in place even after remediation at the site is deemed complete and through site management. However, the USEPA interceptor trench can be removed if it is no longer needed to protect the Little River from LNAPL releases as port of the site remedial goals. The NYSDEC will make a determination for removal based section 6.6 of NYSDEC DER-10.

2.2.2.7 HDPE Liner

The HDPE liner was intended to remain in place even after remediation at the site is deemed complete and through site management. However, the HDPE liner can be removed if it is no longer needed to protect the Little River from LNAPL releases as port of the site remedial goals. The NYSDEC will make a determination for removal based section 6.6 of NYSDEC DER-10.

2.3 Institutional Controls

Institutional Controls are required to:

1. implement, maintain and monitor Engineering Control systems;

2. prevent future exposure to any residual contamination by implementation of SMP procedures and requirements relative to any activities that result in potential disturbances of the subsurface contamination; and
3. limit the use and development of the parcel to Commercial (as described in 6 NYCRR Part 375-1.8(g)(2)(iii)) and Industrial (as described in 6 NYCRR Part 375-1.8(g)(2)(iv)).

Adherence to these Institutional Controls is required and will be implemented in accordance with this Site Management Plan. The Institutional Controls and restrictions applicable to this parcel require:

- Compliance with the Institutional Controls recorded with the St. Lawrence County Clerk, as well as with this SMP, by the property owner and its successors and assigns.
- All Engineering Controls must be operated and maintained as specified in this SMP.
- All Engineering Controls within the parcel must be inspected at a frequency and in a manner defined in the SMP, or as otherwise required by NYSDEC.
- Groundwater and other environmental or public health monitoring must be performed as defined in this SMP.
- Data and information pertinent to site management of the parcel must be reported at the frequency and in a manner defined in this SMP, or as otherwise required by NYSDEC.
- Use and development of the property is limited to Commercial (as described in 6 NYCRR Part 375-1.8(g)(2)(iii)) and Industrial (as described in 6 NYCRR Part 375-1.8(g)(2)(iv)).
- Unless prior written approval by the NYSDEC, or if the NYSDEC shall no longer exist, any New York State agency or agencies subsequently created to protect the environment of the State and the health of the State's citizens (hereinafter referred to as "the Relevant Agency"), is first obtained, there shall be no construction, use, or occupancy of the property that results in the disturbance or excavation of soil within the property that threatens the integrity of the site cover system, or which results in unacceptable human exposure to contaminated soils or groundwater.
- In the event that a SSDS system is installed, it shall be operated and maintained, whether such system is passive or becomes active, in accordance with the Operation and Maintenance Plan.

- All future activities on the property that will disturb any residual contamination must be conducted in accordance with this SMP.
- The use of the groundwater underlying the property is prohibited and will require re-evaluation prior to any potential future use.
- In accordance with a periodic time frame determined by the NYSDEC, inspections of all Institutional Controls and Engineering Controls will be performed to confirm that they remain in place and continue to be complied with. Following such an inspection, certifications shall be made and a Periodic Review Report (PRR) will be provided to the NYSDEC or prepared by the NYSDEC.
- Access to the property shall be permitted in order to evaluate the continued maintenance of any and all controls.

The Institutional Controls may not be discontinued without an amendment to this SMP, or extinguishment of the Institutional Control, upon approval of the NYSDEC.

2.3.1 Excavation Work Plan

Any future intrusive work that will penetrate the site cover, or encounter or disturb any residual contamination, including any modifications or repairs to the existing cover system will be performed in compliance with the Excavation Work Plan (EWP) that is attached as **Appendix C** to this SMP.

Any work conducted pursuant to these requirements must also be conducted, at a minimum, in accordance with the following plans:

- Procedures defined in a Community Air Monitoring Plan (CAMP) plan that satisfies the current NYSDEC guidance (generic CAMP provided in **Appendix D**);
- Procedures defined in a project-specific Stormwater Pollution Prevention Plan (SWPPP) that shall be prepared in accordance with the minimum requirements specified in the EWP and current NYSDEC guidance.

The project-specific SWPPP, and amendments/ revisions to the J&L CAMP, if warranted, must be prepared and submitted for approval to the NYSDEC prior to the start of the work.

Any parties performing this work, including, but not limited to, the property owner and its contractors, are completely responsible for the safe performance of all intrusive work, the structural integrity of excavations, proper disposal of excavation generated materials,

control of runoff from open excavations, and for structures that may be affected by excavations (such as building foundations). The property owner will ensure that site development activities will not interfere with, or otherwise impair or compromise, the Institutional Controls and Engineering Controls described in this SMP.

2.4 Inspections and Notifications

2.4.1 Inspections

Inspections of all remedial components installed at the property will be conducted at the frequency specified in the SMP Monitoring Plan schedule (see Section 3) and in accordance with the division of responsibility outlined in Appendix D. The inspections will determine and document the following:

- Whether Engineering Controls continue to perform as designed, and if these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Institutional Controls;
- Achievement of remedial performance criteria;
- Sampling and analysis of appropriate media during monitoring events, if applicable;
- If site records are complete and up to date;
- Changes, or needed changes, to the remedial or monitoring system; and
- Whether additional remedial measure are warranted.

Inspections will be conducted in accordance with the procedures set forth in the Monitoring Plan of this SMP (Section 3).

If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs, an inspection of property will be conducted within 7 days of the event to verify the effectiveness of the EC/ICs by a qualified environmental professional as defined by NYSDEC guidance.

2.4.2 Notifications

Notifications will be submitted by the property owner to the NYSDEC and by the NYSDEC to the property owner as needed for the following reasons:

- 60-day advance notice of any proposed changes in use for the property, as required by 6 NYCRR Part 375, and/or Environmental Conservation Law.

- 7-day advance notice of any proposed ground-intrusive activities.

- Notice within 48-hours of any damage or defect to the foundations, structures or engineering controls that reduces or has the potential to reduce the effectiveness of Engineering Controls and likewise any action to be taken to mitigate the damage or defect.

- Verbal notice by noon of the following day of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of Engineering Controls in place at the property, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

- Follow-up status reports on actions taken to respond to any emergency event requiring an ongoing response action shall be submitted to the NYSDEC or property owner within 45 days and shall describe and document actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the property or the responsibility for implementing this SMP will include the following notifications by the property owner:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the purchaser has been provided with a copy of the Consent Decree, environmental easement and all approved work plans and reports concerning the parcel, including this SMP.

- Within 15 days after the transfer of all or part of parcel, the new owner's name, contact representative, and contact information will be confirmed in writing.

2.5. Emergencies

2.5.1 Emergency Telephone Numbers

In the event of any environmentally related situation or unplanned occurrence requiring assistance, the property owner or the property owner's representative(s) should contact the appropriate party from the contact list below. For emergencies, appropriate emergency response personnel should be contacted. Prompt contact should also be made to the property owner's qualified environmental professional. These emergency and general contact lists must be maintained in an easily accessible location.

Table 1: Emergency Contact Numbers

Medical, Fire, and Police	911
One Call Center	(800) 272-4480 (3 day notice required for utility markout)
Poison Control Center	(800) 222-1222
Pollution Toxic Chemical Oil Spills	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362

Contact Numbers

US Ecology, Inc./NRC (NYSDEC's Environmental Contractor) -Sean Smith	(315) 764-1917
Property Owner St. Lawrence County County Administrator –Ruth Doyle	(315) 379-2276
NYSDEC Region 6 Spills – Potsdam -Mike McLean	(315) 724-3332
NYSDEC Region 6 Spills – Watertown -Matt Duffany	(315) 785-2422
NYSDEC Central Office - Randy Whitcher	(518) 402-9669

* Note: Contact numbers subject to change and should be updated as necessary.

2.5.2 Map and Directions to Nearest Health Facility

- Site Location: Benson Mine/J&L Steel Site

- Nearest Hospital Name: Clifton-Fine Hospital
- Hospital Location: 1014 Oswegatchie Trail Road, Star Lake, NY 13690
- Hospital Telephone: (315) 848-3351
- Directions to the Hospital (from the Site):

    1. Head west on NY-3 W toward Adirondack Park/Adirondack Park Preserve
       2.4 mi
    2. Turn left onto Oswegatchie Trail Rd/School St
       223 ft
    3. Slight left onto Oswegatchie Trail Rd
       0.6 mi
    4. Turn left onto Lake R
       177 ft
    5. Turn right
       121 ft
    6. Turn left Destination will be on the right

    Total Distance: Approximately 3.1 miles

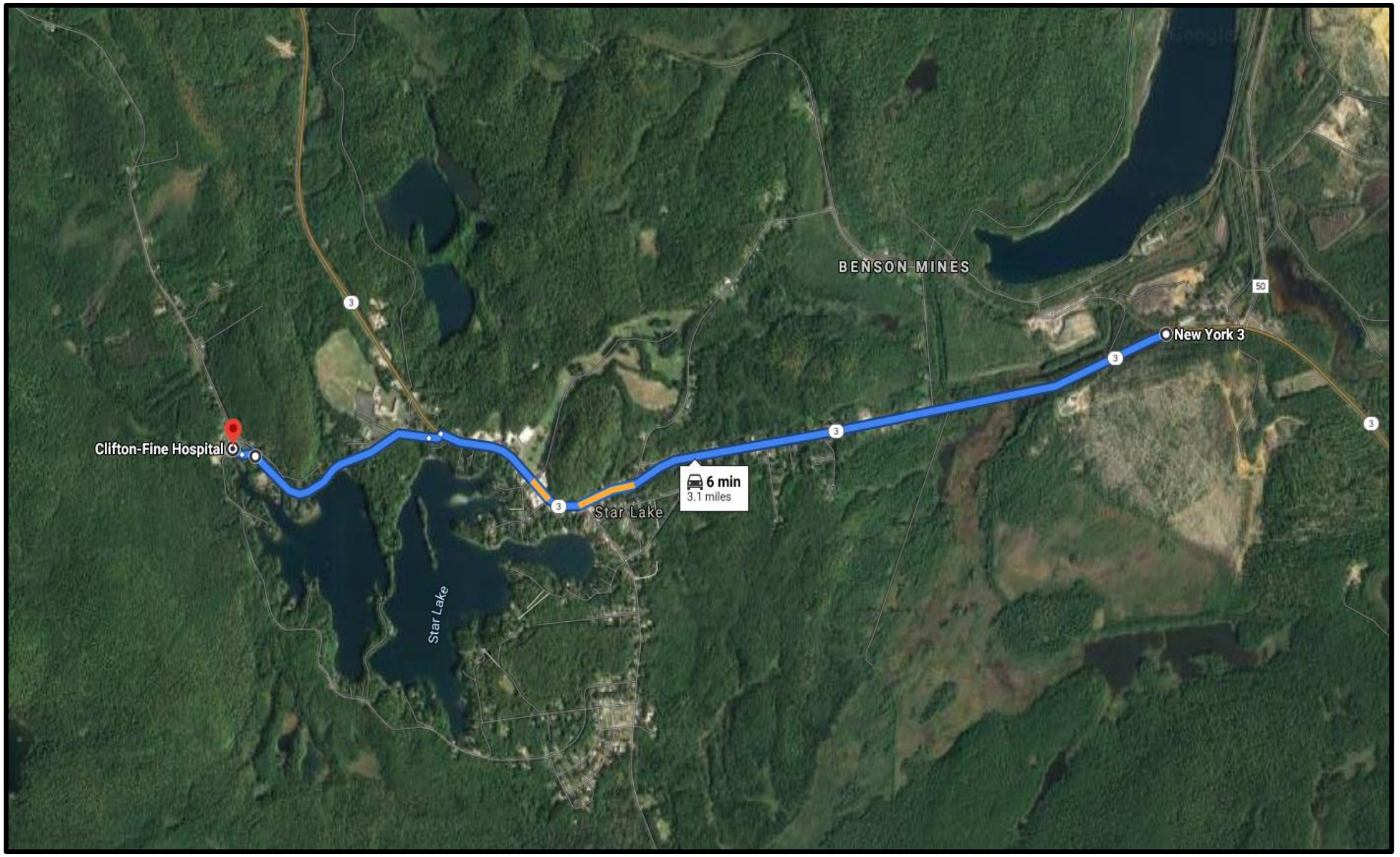
    Total Estimated Time: Approximately 6 minutes

See Figure 13 for a map showing the route from J&L Steel to the hospital.

2.5.3 Response Procedures

As appropriate, the fire department and other emergency response group will be notified immediately by telephone of the emergency

Figure 13, Hospital Travel Route



3.0 SITE MONITORING PLAN

3.1 Introduction

3.1.1 General

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the current remedial systems to reduce or mitigate any residual contamination, the site cover, LNAPL collection system, any SSDS system and all affected site media identified below. This Monitoring Plan may only be revised with the approval of the NYSDEC.

3.1.2 Purpose and Schedule

This Monitoring Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (e.g., groundwater and product guaging);
- Preparing the necessary reports for the various monitoring activities.

To adequately address these issues, this Monitoring Plan provides information on:

- Sampling locations, protocol, and frequency;
- Analytical sampling program requirements;
- Reporting requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and

Periodic monitoring of the performance of remedial systems and overall reduction in contamination on-site will be conducted as determined by the NYSDEC. Trends in contaminant levels in groundwater in the affected areas will be evaluated to determine if the remedial systems continue to be effective in achieving remedial goals. Monitoring programs are summarized in Sections 3.2 through 3.5 below.

3.2 Site Cover Monitoring

The site cover system as discussed in Section 1.4 consists of the following components:

- Existing buildings;
- Existing site soils.

Monitoring, inspection and maintenance requirements for the cover are discussed in the following subsections of this SMP.

Based upon the findings of periodic inspections, the maintenance needs of the cover system will be evaluated and corrective actions will be taken when necessary. A summary of the key potential maintenance issues for inspection and the respective corrective actions is provided below for each component of the cover system.

3.2.1 Existing Buildings

The existing buildings cover within the area of Figure 12 consists of concrete building foundations (buildings without basements). A brief summary of the key potential maintenance issues for inspection and the respective corrective actions for these covers are provided below.

- Significant Cracks (1-inch or Greater) or Delaminations Observed: These deficiencies will be sealed or repaired.
- Gaps or Seal Leaks in Joints: These deficiencies will be resealed or repaired.

3.2.2 Existing Site Soils

The existing site soils are primarily made up of crushed bedrock material, sandy soils and native material. Based the maintenance needs of the evaluated and corrective actions will be taken when necessary. Photographic documentation will be used during the inspections in an effort to evaluate any changes to the surfaces from the previous inspection. A brief summary of the key potential maintenance issues for inspection and the respective corrective actions for these covers are provided below:

- Signs of Disturbance to soil Areas: Photos will be used and compared to previous inspections in an effort to determine if signs of soil disturbance exist. These deficiencies will be addressed on an individual basis, as required.

3.3 Media and Engineering Control Monitoring Program

3.3.1 Groundwater Sampling Protocol

Prior to sample collection, an electronic water level indicator will be utilized to gauge the water level from the top of the well casing at each monitoring well to an accuracy of 0.01

foot. The water level will be recorded in a field book and on the groundwater well sampling log.

Prior to sample collection from the monitoring wells will be purged via low-flow means using a submersible pump. Unless otherwise approved by NYSDEC, the USEPA *Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures* will be employed. Samples and parameter readings will be collected using a flow-through cell in an effort to prevent sample contact with atmospheric air. All well sampling activities will be recorded in a field book and a groundwater well sampling log will be prepared. Other observations (e.g., well integrity, etc.) will be noted on the well sampling log.

The sampling frequency may be modified with the approval of the NYSDEC. The SMP will be modified to reflect changes in sampling plans, as approved by the NYSDEC.

3.3.2 LNAPL Gauging Protocol

On a quarterly basis select wells across the site will be gauged for LNAPL thicknesses. An oil/water interface probe will be used to record the depth to LNAPL, the thickness of LNAPL to groundwater and the depth to groundwater in each well.

If LNAPL in any well is of a significant quantity, measures for LNAPL removal will be employed. If product levels remain consistent through monitoring event additional corrective action measure can be used to address the LNAPL.

3.3.3 LNAPL Collection System Monitoring

On a monthly basis the LNAPL collection system totals will be tabulated. The monthly recovery amounts will be reported in the annual periodic review report. Additional notes on the system's performance will also be added to the monthly totals for informational purposes such as:

- System winterized, not operational;
- Maintenance on recovery well, manhole, etc. No collection from recovery wells RW-1, RW-2, etc.
- Low water table, high water table
- Climate

- Additional LNAPL found at RTM-1, RW-3, etc.

The additional notes will help the NYSDEC make remedial decisions regarding system expansion, system contraction and additional remedial measures.

3.3.4 USEPA Interceptor Trench Monitoring

On a quarterly basis the USEPA interceptor trench wells will be visually inspected for sheens and product accumulation. Should sheening be present in any wells, field staff will ensure that the wells with sheens are equipped with venting caps to promote sheen degradation.

If product is present in the interceptor trench wells, the product will be gauged using the LNAPL gauging protocol in section 3.3.2. If product in any well is of a significant quantity, measures for product removal will be employed. If product levels remain consistent through monitoring event additional corrective action measure can be used to address the product.

3.3.5 River Seep Monitoring

On a quarterly basis seep locations along the Little River will be photographed to document the difference in seep location, seep amount, river elevation and relative river flow. Key seep locations will be selected for photos and survey poles will be placed at these locations. Attention will be given to the photo's direction, elevation and time of the photos, so that visual comparisons can be easily made between quarters, seasons and years of the photos. Additional photo locations and photos can be selected during monitoring events if warranted.

3.3.6 Monitoring Well Repairs, Replacement and Decommissioning

If biofouling or silt accumulation occurs that impacts the intended use of the monitoring wells or extraction wells, the wells will be redeveloped. Additionally, monitoring wells and extraction wells will be properly decommissioned and replaced (as per the Monitoring Plan), if an event renders the wells unusable.

Repairs and/or replacement of wells or other related components (i.e., j-plugs or locks) in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

The NYSDEC will be notified prior to any repair or decommissioning of monitoring wells for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent Periodic Review Report. Well decommissioning without replacement will be done only with the prior approval of NYSDEC. Well abandonment will be performed in accordance with NYSDEC's "CP-43: Groundwater Monitoring Well Decommissioning Policy" issued on November 3, 2009 (NYSDEC, 2009). Monitoring wells that are decommissioned because they have been rendered unusable will be reinstalled in the nearest available location, unless otherwise proposed or approved by the NYSDEC.

3.4 Monitoring Quality Assurance/Quality Control

All sampling and analyses will be performed in accordance with the requirements of a generic Quality Assurance Project Plan. Main components of a QAPP include:

- QA/QC Objectives for Data Measurement;
- Sampling Program:
  - Sample containers will be properly washed, decontaminated, and appropriate preservative will be added (if applicable) prior to their use by the analytical laboratory. Containers with preservative will be tagged as such.
  - Sample holding times will be in accordance with the NYSDEC ASP requirements.
  - Field QC samples (e.g., trip blanks, coded field duplicates, and matrix spike/matrix spike duplicates) will be collected as necessary.
- Sample Tracking and Custody;
- Calibration Procedures:
  - All field analytical equipment will be calibrated immediately prior to each day's use. Calibration procedures will conform to manufacturer's standard instructions.
  - The laboratory will follow all calibration procedures and schedules as specified in USEPA SW-846 and subsequent updates that apply to the instruments used for the analytical methods.
- Analytical Procedures;
- Preparation of a Data Usability Summary Report (DUSR), which will present the results of data validation, including a summary assessment of laboratory data

packages, sample preservation and chain of custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method;

- Internal QC and Checks;
- QA Performance and System Audits;
- Preventative Maintenance Procedures and Schedules; and
- Corrective Action Measures.

3.5 Monitoring Reporting Requirements

Forms and any other information generated during regular monitoring events and inspections will be kept on file. Annual monitoring results will be summarized in the subsequent Periodic Review Report by prepared by NYSDEC.

The Periodic Review will include:

- Dates of monitoring event;
- Description of the activities performed;
- Type of monitoring collected (e.g., groundwater, LNAPL measurements, seep photos, etc.);
- A figure illustrating monitoring type and monitoring locations;
- Any observations, conclusions, or recommendations; and
- A determination on any conditions that changed since the last reporting event.

The periodic review report will be reported in digital format by NYSDEC and also placed in the document repository.

All site system inspection monitoring will be reported on a periodic basis in the periodic review report. The periodic review report will include, at a minimum:

- Date of event;
- Description of the activities performed;
- Any observations, conclusions, or recommendations; and

- A determination as to whether engineering controls have changed since the last reporting event, based upon the considerations outlined in this SMP.

A summary of the monitoring program deliverables are summarized in Table 2 below.

Schedule of Monitoring/Inspection Reports

Task	**Reporting Frequency***
Preparation and Submission of PRR	Annually
Preparation and Submission of Corrective Measures Plan	As Needed
Preparation and Submission of Revisions to approved SMP and referenced appendices	To Be Determined/Case Specific

4.0 OPERATION AND MAINTENANCE PLAN

4.1 Introduction

The O&M Plan describes the measures necessary to operate, monitor and maintain the mechanical components of the LNAPL collection system. This O&M Plan:

- Includes the steps necessary to allow individuals unfamiliar with the site to operate and maintain the LNAPL collection system; and
- Will be updated periodically to reflect changes in site conditions or system.

Information on non-mechanical Engineering Controls (i.e., composite cover system) is provided in Section 3. This Operation and Maintenance Plan is not to be used as a stand-alone document, but as a component document of the SMP. If an active sub-slab depressurization system or a new remedial active remedial component is installed, an Operation and Maintenance Plan for this system will be developed.

4.2 Engineering Control System Operation and Maintenance

4.2.1 LNAPL Collection System

LNAPL collection is occurring at the site year-round. Thousands of gallons of LNAPL (oil) is being collected from the subsurface and properly disposed of off-site. Collection methods vary depending on seasonal temperatures and groundwater elevation. The following methods are utilized at the site:

Collection Trench Oil Removal: Utilizing a vacuum truck, floating oil and shallow groundwater is skimmed from the select Oil Recovery Collection Trench Manholes (RTMs). Historical recovery has been focused to RTM1, RTM2, RTM5, RTM13, RTM14, RTM17, and RTM18.

Recovery Well Pumping: As of August 2020 pumping from select recovery wells at deeper groundwater levels below the marsh mat/collection trench began and is ongoing. Utilizing jet pumps and recently installed groundwater depression pumps, groundwater is pumped from select monitoring wells and oil production/recovery assessed. A peristaltic pump is utilized to recover floating oil from each recovery well, this pumping system is

labor intensive and in the process of being upgraded to Geotech AC Sippers. Recovery wells used most frequently for oil recovery include RW2, RW3, RW4, RW6, RW8, and RW9.

Geotech AC Sippers: The Geotech AC Sipper is a powered remediation system, designed for recovery applications where electrical power is available. This system can be configured for up to eight wells. The AC Sipper uses a unique down well pump to recover hydrocarbons through a floating oleophilic/hydrophobic intake filter. Once the pump canister is filled via the vacuum cycle, the pump reverses, pressurizes the system and pumps the recovered fluid to the surface and into a storage vessel. Two control units utilizing 12 Sippers is ongoing at the site and include locations RW11, MW14, MW37, ERT5D, ERT15D, RW2, RW9, 20D, 17D,4D, 5D, 15D, 19D and 20D.

Geotech Filter Scavenger: The Geotech Large Diameter Filter Scavenger is a unique separating and pumping system designed for the efficient recovery of hydrocarbon product from the surface water. The system is portable and is electrically safe for use in hazardous locations. The heart of the Large Diameter Filter Scavenger is a floating oil/water separator which passes recovered oil to a remote pump and control assembly. Actual separation of oil or other hydrocarbons from water is affected by a mesh screen located in the floating buoy assembly. This screen is specially treated to pass oil and repel water. It can be utilized in manholes, trenches, and large diameter wells to a depth of 20 feet. Locations for the scavenger included RW2, RTM11, and RTM 12.

LNAPL is collected in drums/tanks until disposed of off-site at a permitted disposal facility. Groundwater/LNAPL mixtures are separated utilizing a belt skimmer, weir, and numerous settling tanks. Pumped groundwater is bag filtered to removed particles and iron deposits, treated thru large capacity carbon filters, and sampled to ensure water quality standards are met, before final discharge to the Little River.

4.3 Engineering Control System Performance Monitoring

The EC performance monitoring will consist is discussed in 3.3 above.

4.3.1 General Equipment Monitoring

A visual inspection of the general equipment and systems will be conducted during each monitoring event. Any maintenance or replacement of components or equipment will occur on an as needed basis.

5.0 INSPECTIONS, REPORTING AND CERTIFICATIONS

5.1 Site Inspections

5.1.1 Inspection Frequency

All inspections will be conducted at the frequency specified in this SMP. Inspections of remedial components will also be conducted when a severe weather condition has taken place, such as an erosion or flooding event that may affect the ECs.

5.1.2 Evaluation of Records and Reporting

The results of the inspection and monitoring observations/data will be evaluated as part of the EC/IC annual periodic review report to confirm that the:

- EC/ICs are in place, are performing properly, and remain effective;
- The Media and EC Monitoring Plan is being implemented;
- Operation and maintenance activities are being conducted properly; and based on the above items; and
- Corrective actions are being performed, when applicable.

5.2 Periodic Review Report

In accordance with a periodic time frame, the NYSDEC shall periodically perform inspections of all Institutional Controls and Engineering Controls and confirm that they remain in place and continue to be complied with. The Periodic Review Report (PRR) will be prepared in accordance with NYSDEC DER-10 and submitted annually to the site owner. The PRR will include:

- Inspection information of all EC/IC for the property;
- Monitoring and reporting results of the required media and EC;
- Major maintenance performed during the reporting period;
- A site evaluation, which includes the following:
    - Any new conclusions or observations regarding site contamination based on inspections or data generated by the Monitoring Plan for the media being monitored; and

- Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan

6.0 REFERENCES

Consent on Consent and Administrative Settlement, executed August 7, 2013, In the Matter of a Settlement Relating to the J&L Steel Inactive Hazardous Waste Disposal Site by Settling Respondent St. Lawrence County, Index # W6-1172-05-13, Site # 645029, August 2013.

Agreement, executed August 8, 2013, In the Matter of the Investigation and Remediation of the former J&L Steel Site and the Issuance of Liability Release to St. Lawrence County, August 2013.

NYSDEC, 2010. Division of Environmental Remediation, CP-51: Soil Cleanup Guidance. October, 2010.

NYSDEC, 2010. DER-10 Technical Guidance for Site Investigation and Remediation. May 2010.

NYSDOH, 2006. Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York. October 2006.

Atlantic Testing Laboratories, Limited, 1989. J&L Oil Spill, J&L Steel Mill Company, Star Lake, NY, Subsurface Investigation & Environmental Analyses, Spill No. 8706728, PIN No. 97403, December 1989.

CDM Inc., 1994. Final Phase II Environmental Assessment for the Former J&L Steel Company – Benson Mines Site, October 1994.

OP-TECH Environmental Services, Inc., 2009. J&L Steel Little River Sampling Project Report, NYS Route 3, Star Lake, New York, NYSDEC Petroleum Spill No. 8706728 / Pin No. 97403, September 2009.

CDM Smith, Inc., 2013. Final Site Investigation Report, Former Jones & Laughlin Site 18-Acre Parcels, Environmental Restoration Program (ERP), Site No. E645029, Town of Clifton, St. Lawrence County, New York, January 2013.

Parsons, Inc., 2016. Site Characterization Report for the Former J&L Steel Site, Clifton, New York, August 2016.

Parsons, Inc. 2016. Former J&L Steel Site – Clifton, NY (Site # 645029), Pre-Design Investigation, December 2016.

Lockheed Martin/SERAS, Inc., 2017. Draft Preliminary LNAPL Assessment & Conceptual Site Model Report, J&L fuel Oil Site, Clifton, New York, June 2017.

Parsons, Inc., 2019. Final PCB IRM Construction Completion Report, J&L Steel Site, 4669 Route 3, Star Lake, New York, NYSDEC Site Number: 645029, December 2019.

NRC US Ecology Progress Report February 2021 dated February 25, 2021 NYSDEC Spill #8706728 Star Lake NY

Appendix A

Parcel D Metes and Bounds Description

All that tract or parcel of land situate northerly of New York State Route 3, and westerly of County Route 60, in the Town of Clifton, County of St. Lawrence and State of New York, bounded and described as follows:

Beginning at an iron rod in the northerly boundary of NYS Route 3 at the southwesterly corner of Parcel “B” of a subdivision of the 54 acre parent parcel, this iron rod being located North 84 degrees 22 minutes 36 seconds West a distance of 97.98 feet from an iron rod at the intersection of the northerly boundary of New York State Route 3 with the westerly boundary of County Route 60, and proceeding on a NYS Grid bearing the following courses;

thence southwesterly along the northerly boundary of NYS Route 3, concentric with and 50 feet distant from the centerline thereof, on a curve to the left, 312.28 feet to a point, this course having a tie-chord bearing of South 89 degrees 47 minutes 20 seconds West and a tie-chord distance of 311.94 feet;

thence continuing along the northerly boundary of NYS Route 3 South 85 degrees 31 minutes 13 seconds West a distance of 288.40 feet to a point;

thence North 39 degrees 40 minutes 00 seconds West along a southwesterly boundary of a parcel now or formerly County of St. Lawrence (Instr. 2014-00004457) and a northeasterly boundary of a parcel now or formerly Benson Mines, Inc. (Liber 951 Page 1086) a distance of 666.22 feet to an iron rod;

thence North 50 degrees 20 minutes 00 seconds East along a northwesterly boundary of lands of County of St. Lawrence and a southeasterly boundary of Benson Mines, Inc. a distance of 528.00 feet an iron rod;

thence North 39 degrees 40 minutes 00 seconds West along a southwesterly boundary of lands of County of St. Lawrence and northeasterly boundary of lands now or formerly Benson Mines, Inc. a distance of 366.87 feet to a point in the apparent southerly boundary of the former New York Central Railroad, being now or formerly St. Lawrence County Industrial Development Agency (Liber 1055 Page 592);

thence continuing across the former New York Central Railroad, being now or formerly St. Lawrence County Industrial Development Agency (Liber 1055 Page 592) North 39 degrees 40 minutes 00 seconds West a distance of 124.48 feet to a point in the apparent northerly boundary of the former New York Central Railroad;

thence continuing North 39 degrees 40 minutes 00 seconds West along a southwesterly boundary of lands of County of St. Lawrence and a northeasterly boundary of lands now or formerly Benson Mines, Inc. a distance of 928.64 feet to a point;

thence North 50 degrees 20 minutes 00 seconds East along a northwesterly boundary of lands of County of St. Lawrence and a southeasterly boundary of lands now or formerly Benson Mines, Inc. a distance of 672.00 feet to a point;

thence South 39 degrees 40 minutes 00 seconds East along a northeasterly boundary of lands of County of St. Lawrence and a southwesterly boundary of lands now or formerly Benson Mines, Inc. a distance of 909.31 feet to a point in the apparent northerly boundary of the former New York Central Railroad, being now or formerly St. Lawrence County Industrial Development Agency (Liber 1055 Page 592);

thence continuing across the former New York Central Railroad, being now or formerly St. Lawrence County Industrial Development Agency (Liber 1055 Page 592) South 39 degrees 40 minutes 00 seconds East a distance of 127.77 feet to a point in the apparent southerly boundary of the former New York Central Railroad;

thence continuing South 39 degrees 40 minutes 00 seconds East along a northeasterly boundary of lands of County of St. Lawrence and a southwesterly boundary of lands now or formerly Benson Mines, Inc. a distance of 1056.54 feet to an iron rod at the northerly corner of Parcel “B” of a subdivision of the 54 acre parent parcel;

thence South 49 degrees 59 minutes 54 seconds West along the northwesterly boundary of subdivision Parcel “B” a distance of 723.41 feet to an iron rod at the westerly corner of said subdivision Parcel “B”;

thence South 39 degrees 39 minutes 35 seconds East along the southwesterly boundary of subdivision Parcel “B” a distance of 352.79 feet to the Point of Beginning of this description. EXCEPTING therefrom all that portion of the former New York Central Railroad, now or formerly St. Lawrence County Industrial Development Agency (Liber 1055 Page 592), and being a strip of land 120 feet in width centered on the railroad tracks crossing said lands of County of St. Lawrence, and containing 1.88 acres more or less.

Containing 40.42 Acres of land more or less, including lands under water, as prepared by Ronald E. Towne, L.S. 050331 of WCT Surveyors, P.C. Bearings are referenced to New York State Grid North.

Appendix B

Parsons Site Investigation Characterization Report (2016) and USEPA RIR Report (2017) (electronic copies enclosed separately)

Appendix C
Excavation Work Plan

Introduction

The site IC allows for commercial/industrial use. Any future intrusive work that will penetrate, encounter, or disturb the remaining contamination will be performed in compliance with this Excavation Work Plan (EWP). Intrusive construction work must also be conducted in accordance with the procedures defined in a Site Specific Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) (Appendix 1A of DER-10)_ prepared by the contractor.

The parties preparing the remedial documents submitted to the NYSDEC, and parties performing this work, are completely responsible for the safe performance of all invasive work, the structural integrity of excavations, and for structures that may be affected by excavations (such as building foundations and footings).

Notification

At least 10 days prior to the start of any activity that is reasonably anticipated to encounter remaining contamination, the site owner or their representative will notify the NYSDEC. Currently, this notification will be made to:

Chief, Site Control Section
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, NY 12233-7020

This notification will include:

- A detailed description of the work to be performed, including the location and extent, plans for site re-grading, intrusive elements or utilities to be installed below the soil cover, or any work that may impact an engineering control (soil cover);

- A summary of environmental conditions anticipated in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;

- A schedule for the work, detailing the start and completion of all intrusive work;

- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120;

- A copy of the contractor’s HASP, in electronic format;

- Identification of disposal facilities for potential waste streams;
- Identification of sources of any anticipated backfill, along with all required chemical testing results;

- A groundwater handling plan for treatment and discharge of groundwater.

Soil Screening Methods

Visual, olfactory and instrument-based soil screening will be performed by a qualified environmental professional during all development excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed regardless of when the invasive work is executed and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal, material that requires testing, material that can be returned to the subsurface, and material that can be used as cover soil.

Stockpile Methods

Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points. Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced. Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and will be available for inspection by the NYSDEC.

Materials Excavation and Load Out

A qualified environmental professional or an individual under their supervision will oversee all invasive work and the excavation and load-out of all excavated material. The owner of the property and its contractors are solely responsible for the safe execution of all invasive and other work performed under this EWP.

The presence of utilities and easements on the Site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this EWP is posed by utilities or easements on the Site.

Loaded vehicles leaving the Site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, and local requirements (and all other applicable transportation requirements). Locations where vehicles enter or exit the Site shall be inspected daily for evidence of off-site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the Site are clean of dirt and other materials derived from the Site during intrusive excavation activities. Cleaning of the

adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

Materials Transport Off-Site

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the Site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

Truck transport routes will be identified that will:

1. limit transport through residential areas and past sensitive sites;
2. use city-mapped truck routes;
3. minimize off-site queuing of trucks entering the facility;
4. limit total distance to major highways; and
5. promote safety in access to highways.

Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during site remediation and development.

Materials Disposal Off-Site

All soil/fill/solid waste excavated and removed from the Site will be treated as contaminated and regulated material and will be transported and disposed of in accordance with all local, State (including 6 NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this Site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-site management of materials from this Site will not occur without formal NYSDEC approval.

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C/D recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the PRR. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at a minimum, as a Municipal Solid Waste pursuant to 6 NYCRR Part 360-1.2. Material that does not meet the lower of the SCGs for residential use or groundwater protection will not be taken to a NYS recycling facility (6 NYCRR Part 360-16 Registration Facility) without a beneficial use determination issued by the NYSDEC.

Fluids Management

All liquids to be removed from the Site, including excavation dewatering, will be handled, transported and disposed of in accordance with applicable local, State, and Federal regulations.

Backfill from Off-Site Sources

All materials proposed for import onto the Site will be approved by the qualified environmental professional and the NYSDEC. All materials will be in compliance with applicable regulations (6 NYCRR 375-6.7(d)) and guidance (DER-10) prior to receipt at the Site. Material from industrial sites, spill sites, other environmental remediation sites, or potentially contaminated sites will not be imported to the Site. All imported soils will meet the backfill and cover soil quality standards established in 6 NYCRR 375-6.7(d). Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this Site, will not be imported onto the Site without prior approval by the NYSDEC. Solid waste will not be imported onto the Site.

Trucks entering the Site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

Contingency Plan

If underground tanks or other previously unidentified contaminant sources are found during any future subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition. Sampling will be performed on product, sediment and surrounding soils, etc., as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in daily and periodic electronic media reports.

Dust Control Plan

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of a dedicated on-site water truck for road wetting or other dust suppression techniques as approved by the NYSDEC. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.

- Any work conducted pursuant to the excavation work plan must also be conducted in accordance with the procedures defined in site-specific HASP and CAMP prepared for the site in current compliance with DER-10, 29 CFR 1910, 29 CFR 1926, and all other applicable Federal, State and local regulations.

APPENDIX D
Responsibilities of Property Owner and Remedial Party

The responsibilities for implementing the Site Management Plan ("SMP") for the J&L Steel Site for Parcel D (see survey metes and bounds description) are divided between the property owner(s) and the NYSDEC, as defined below. The property owner(s) is currently listed as: **St. Lawrence County** (the "Owner").

Solely for the purposes of this document and based upon the facts related to a particular site and the remedial program being carried out, the term Remedial Party ("RP") refers to any of the following: certificate of completion holder, volunteer, applicant, responsible party, and the NYSDEC, if NYSDEC is carrying out remediation or site management.

Nothing in this page shall supersede the provisions of an Environmental Easement, Consent Order, Consent Decree, agreement, or other legally binding document that affects rights and obligations relating to the Site.

Property Owner's Responsibilities:

1. The Owner shall follow the provisions of the SMP as they relate to future construction and excavation at the property.
2. The Owner shall grant access to the property to the NYSDEC and its agents for the purposes of performing activities required under the SMP and any additional remedial actions or interim remedial measures as necessary.
3. In the event some action or inaction by the Owner adversely impacts the property, the Owner must notify the NYSDEC in accordance with the time frame indicated in the Notifications Section 2.4.2 and coordinate the necessary corrective actions with the NYSDEC. The Owner shall submit Notifications to the NYSDEC for the following reasons:

- 60-day advance notice of any proposed changes in use for the parcel, as required under 6 NYCRR Part 375, and/or Environmental Conservation Law. The foregoing notice shall include a copy of the Owner's plans for the proposed change in use.
- 7-day advance notice of any proposed ground-intrusive activities.
- Notice within 48-hours of any damage or defect to the foundations, structures or engineering controls that reduces or has the potential to reduce the effectiveness of Engineering Controls and likewise any action to be taken to mitigate such damage or defect.
- Verbal notice by noon of the following day of any emergency, such as a fire, flood, or earthquake, that reduces or has the potential to reduce the effectiveness of Engineering Controls in place, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken in response to any emergency event requiring an on-going response action shall be submitted to the NYSDEC within 45 days of such event and shall describe and document actions taken to restore the effectiveness of the ECs.

4. The Owner must notify the NYSDEC of any change in ownership of the property (identifying the tax map numbers in any correspondence) and provide contact information for the new owner of the property. 6 NYCRR Part 375 contains notification requirements applicable to any construction or activity changes and changes in ownership. Among the notification requirements is the following:
    - Sixty (60) days prior written notification must be made to the NYSDEC.
    - Notification is to be submitted to the NYSDEC Division of Environmental Remediation's Site Control Section.
    - Notification requirements for a change in use are detailed in Section 2.4 of the SMP.

- A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html.

5. The Owner will be responsible for completion of the following as per the applicable Section(s) of the SMP:

    - In the event that a new building is constructed, the Owner will ensure the new building includes the installation a soil vapor barrier and a passive SSDS. The design and installation shall be approved and/or certified by a licensed professional engineer; documentation of such approval/certification shall be promptly provided to the NYSDEC. The Owner shall ensure the building owner/operator shall also operate and maintain the passive and active SSDS, to the extent required.

    - In the event that data indicate that an SSDS system is no longer required or not required, a proposal to discontinue the SSDS will be submitted by the Owner following receipt of RP written approval to the NYSDEC (Section 2.2);

    - If defects or damage to any component of the Institutional or Engineering Controls are identified, the Owner will notify the NYSDEC;

    - The Owner shall comply with the Excavation Work Plan and will ensure that site development activities will not interfere with, or otherwise impair or compromise, the engineering controls described in this SMP;

    - Adhere to the notification requirements as specified in the SMP;

    - Adhere to the Health and Safety Plan, Community Air Monitoring Plan, Quality Assurance Project Plan, Hazard Identification Plan as outlined in the SMP (Appendices D, F, G and E, respectively); and

    - Prepare, as necessary, a site specific Stormwater Pollution Prevention Plan as summarized in the SMP as required to complete their respective work scopes.

6. In accordance with the tenant notification law, within 15 days of receipt, the Owner must supply a copy of any vapor intrusion data that is produced with respect to structures and that exceeds NYSDOH or OSHA guidelines on the property, whether produced by the NYSDEC or Owner, to the tenants on the property. The Owner must otherwise comply with the tenant and occupant notification provisions of Environmental Conservation Law Article 27, Title 24.

NYSDEC Site Responsibilities

1. The NYSDEC shall follow the SMP provisions regarding any construction and/or excavation it undertakes at the property.
2. The NYSDEC and its contractors shall cure any EC defects noted in the periodic inspections while the ECs are under the care of the NYSDEC.

3. While the ICs/ECs are under the care of the NYSDEC, the NYSDEC will perform inspections of all ICs/ECs and confirm that they remain in place and continue in compliance.
4. The NYSDEC shall notify to the Owner and stakeholders of all activities required for remediation, operation, maintenance, monitoring, and reporting. Such reporting includes, but is not limited to Interim Remedial Measures (IRMs), corrective action work plans, reports, and updated SMPs.
5. Before undertaking a specific activity, the NYSDEC shall provide the Owner advance notification that shall include an explanation of the work expected to be completed. The NYSDEC shall provide to the Owner a copy of any data generated during the visit and/or any final report produced.
6. The NYSDEC shall notify the Owner property related damages or impacts that may affect the ECs/ICs.
7. Prior to any potential change in use that impacts the remedial system or requirements and/or responsibilities for implementing the SMP, the NYSDEC shall submit to the Owner an amended SMP.

Future property owners, RPs, and their respective successors and assigns are required to carry out the activities set forth above as per the SMP and Institutional Controls.

Appendix E

NYSDOH Generic Community Air Monitoring Plan (CAMP)

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical-specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

> **Continuous monitoring** will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. “Periodic” monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:

   a) Objects to be measured: Dust, mists or aerosols;

   b) Measurement Ranges: 0.001 to 400 mg/m^3 (1 to 400,000 :ug/m^3);

   c) Precision (2-sigma) at constant temperature: +/- 10 :g/m^3 for one second averaging; and +/- 1.5 g/m^3 for sixty second averaging;

   d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);

   e) Resolution: 0.1% of reading or 1g/m^3, whichever is larger;

   f) Particle Size Range of Maximum Response: 0.1-10;

   g) Total Number of Data Points in Memory: 10,000;

   h) Logged Data: Each data point with average concentration, time/date and data point number

   i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;

   j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;

   k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;

   l) Operating Temperature: -10 to 50^{o}C (14 to 122^o F);

   m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

5. The action level will be established at 150 ug/m^3 (15 minutes average). While conservative, Final DER-10 Page 208 of 226 Technical Guidance for Site Investigation and Remediation May 2010 this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m^3, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m^3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/m^3 continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

    a) Applying water on haul roads;

    b) Wetting equipment and excavation faces;

    c) Spraying water on buckets during excavation and dumping;

    d) Hauling materials in properly tarped or watertight containers;

e) Restricting vehicle speeds to 10 mph;

f) Covering excavated areas and material after excavation activity ceases; and

g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m3 action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

Appendix F

Site ALTA Survey (electronic copies enclosed separately)

Appendix G

Site Remedial System Survey (electronic copies enclosed separately)