PROPOSED REMEDIAL ACTION PLAN

K&K Stripping
State Superfund Project
Lima, Livingston County
Site No. 826021
February 2020

Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

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SECTION 1: SUMMARY AND PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), is proposing a remedy for the above referenced site. The disposal of hazardous wastes at the site has resulted in threats to public health and the environment that would be addressed by the remedy proposed by this Proposed Remedial Action Plan (PRAP). The disposal of hazardous wastes at this site, as more fully described in Section 6 of this document, has contaminated various environmental media. The proposed remedy is intended to attain the remedial action objectives identified for this site for the protection of public health and the environment. This PRAP identifies the preferred remedy, summarizes the other alternatives considered, and discusses the reasons for the preferred remedy.

The New York State Inactive Hazardous Waste Disposal Site Remedial Program (also known as the State Superfund Program) is an enforcement program, the mission of which is to identify and characterize suspected inactive hazardous waste disposal sites and to investigate and remediate those sites found to pose a significant threat to public health and environment.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York; (6 NYCRR) Part 375. This document is a summary of the information that can be found in the site-related reports and documents in the document repository identified below.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all PRAPs. This is an opportunity for public participation in the remedy selection process. The public is encouraged to review the reports and documents, which are available at the following repository:

Lima Public Library
Attn: Catherine Allen
1872 Genesee Street
Lima, NY 14485
Phone: 585-582-1311

A public comment period has been set from:

02/26/2020 to 03/26/2020

A public meeting is scheduled for the following date:

03/17/2020 at 6:30 pm.

Public meeting location:

NYSDEC – Region 8 Headquarters
6274 East Avon-Lima Road
Avon, New York 14414

At the meeting, the findings of the remedial investigation (RI) and the feasibility study (FS) will be presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period will be held, during which verbal or written comments may be submitted on the PRAP.

Written comments may also be sent through 03/26/2020 to:

Todd Caffoe
NYS Department of Environmental Conservation
Division of Environmental Remediation
6274 East Avon-Lima Road
Avon, NY 14414
todd.caffoe@dec.ny.gov

The Department may modify the proposed remedy or select another of the alternatives presented in this PRAP based on new information or public comments. Therefore, the public is encouraged to review and comment on the proposed remedy identified herein. Comments will be summarized and addressed in the responsiveness summary section of the Record of Decision (ROD). The ROD is the Department's final selection of the remedy for this site.

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The site is a former furniture stripping facility known as K&K Stripping located at 1920 Buell Avenue in the Village of Lima, in the northeastern corner of Livingston County, New York. The parcel is identified on real property records as Tax Map Number 37.14-1-21.2.

Site Features: This small property is located along a primarily residential street one block southeast of the intersection of Routes 20 and 15A. It is surrounded on three sides by residential properties. A small furniture repair shop abuts the site to the south. There is a vacant single-story commercial structure on-site (approximately 4,300 square feet) along the northern property line. The property is serviced by a gravel driveway. The perimeter and rear of the property are grass-covered. The area is served by a public water supply.

The topography is generally flat and to the south a drainage ditch along the southern property line. Surface water runoff flows to the drainage ditch which flows in an easterly direction before entering a culvert flowing beneath Buell Avenue. The ditch discharges to a class C unnamed tributary of Spring Brook.

Current Zoning and Land Use: The site is zoned residential according to the Village of Lima, although actual use of the site had been commercial. The property is currently abandoned.

Past Use of the Site: Prior to Livingston County acquiring the property in August 2010, the former owner operated a furniture stripping business at the site. The stripping business ceased operations following the conviction of the former owner (October 2000) for treatment of hazardous wastes without authorization. Solvents utilized during facility operations included acetone, toluene, MEK, methanol, and methylene chloride.

This site was the subject of two Department criminal investigations (1997-1998 and 2009-2010) and a hazardous waste removal action by the Department in 2009 (Spill #0900191). Samples collected in 1997 from the sanitary sewer upstream of the municipal sewer main documented VOC and metals being discharged to the village sewer system causing WWTP upsets and high metals in sludge. Data also showed mishandling of hazardous waste with evidence of solvent spillage on the concrete floors and high lead levels in the gravel driveway. In 2009, DEC initiated a removal action which pumped/disposed of 2,000 gallons of solvent waste from a subfloor sump and removed/disposed of some assorted waste containers.

In 2012, the Department completed a site characterization and identified high levels of lead in soil, solvents in interior sumps, and low levels of acetone, xylene, toluene, and 1,3,5 trimethylbenzene in groundwater. Total VOCs in groundwater were less than 10 parts per billion (ppb), lead was detected in groundwater at levels exceeding the New York State groundwater standards. No site-related contamination was detected in surface water. Based upon the Site Characterization Report, the Department completed an interim remedial measure (IRM) at the site in 2016.

Site Geology and Hydrogeology: The uppermost overburden underlying the site generally consists of fill ranging in thickness from approximately one foot to 10 feet. The fill consists of

varying amounts of silt, sand, gravel, small amounts of clay and at times ash and metal fragments. The fill is underlain by clay-rich glacial till with variable gravel and silt content. The thickness of the overburden is unknown, and mapping indicates that Onondaga Limestone underlies the site.

Groundwater was encountered in monitoring wells at depths ranging from 4.5 to 10 feet below ground surface. Groundwater flows toward the south-southeast, generally following with the topography and likely influenced by the drainage ditch and nearby stream.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives that restrict the use of the site to residential use (which allows for commercial use and industrial use) as described in Part 375-1.8(g) are/is being evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the investigation to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is included in the Tables for the media being evaluated in Exhibit A.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The PRP for the site, documented to date, include:

Kenneth Schreib

The PRP for the site declined to implement a remedial program when requested by the Department. After the remedy is selected, the PRP will again be contacted to assume responsibility for the remedial program. If an agreement cannot be reached with the PRP, the Department will evaluate the site for further action under the State Superfund. The PRP is subject to legal actions by the state for recovery of all response costs the state has incurred.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

The analytical data collected on this site includes data for:

- groundwater
- soil

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. The tables found in Exhibit A list the applicable SCGs in the footnotes. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a hazardous waste that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

lead acetone

As illustrated in Exhibit A, the contaminant(s) of concern exceed the applicable SCGs for:

- soil
-groundwater

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Record of Decision.

The following IRM was completed at this site based on conditions observed during the Site Characterization in 2012.

Soil Removal and Oil/Water Separator Demolition

In 2016, a soil removal and oil/water separator demolition was completed by a Department-hired contractor. The goal was to excavate and dispose of lead contaminated soils exceeding commercial SCOs of 1,000 parts per million (ppm) lead based on a proposed zoning change from residential to commercial. Approximately 67 tons of lead-contaminated soil was excavated from the western portion of the property to a depth of approximately 2 feet. These soils were disposed of off-site at a permitted landfill. The excavation was backfilled with crusher-run stone. Within the building an elevated oil/water separator structure was pumped out, and demolished. Approximately 1,050 gallons of solvent contaminated liquids and sludge were disposed of off-site as a hazardous waste. Approximately 110 tons of associated concrete, fill material, and wooden structural materials were disposed of off-site at a permitted landfill. Confirmatory soil samples indicated lead levels of 696 ppm and 826 ppm which exceed the residential SCO of 400 ppm for lead, but met the targeted commercial SCO of 1,000 ppm. This area was also backfilled with crusher-run stone. Surface water samples from a drainage ditch on the south side of the property did not indicate any site-related contamination. The IRM is documented in a construction completion report that is included as an appendix in the Remedial Investigation Report prepared by Ramboll dated October 2019.

The proposed zoning change to commercial use never went forward, and the property remains zoned for residential use. Figure 2 depicts the IRM areas.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water.

Based upon the resources and pathways identified and the toxicity of the contaminants of ecological concern at this site, a Fish and Wildlife Resources Impact Analysis (FWRIA) was deemed not necessary for this site.

Nature and Extent of Contamination:

The Remedial Investigation was completed at the site in 2019. The goal of the RI was to determine the nature and extent of contamination remaining on-site after completion of the IRM in 2016.

Soil:
Acetone and lead were the only contaminants detected above the unrestricted use SCOs. Acetone contamination is limited to shallow soils in a small area beneath the former oil/water separator in the building. This area was subject to the IRM discussed above. Lead contamination exceeds the residential SCO of 400 ppm within the upper 2 feet of soil in two small areas of the site.

Groundwater:
Lead was the only contaminant of concern detected in one groundwater well above the New York State Groundwater Standard of 25 parts per billion (ppb). The highest level detected was 53 ppb. These exceedances for lead may be a result high levels of suspended solids (turbidity) in the groundwater samples.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure.*

People are not coming into contact with the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Access to the site is unrestricted and persons who enter the site could contact contaminants in the soil by walking on the soil, digging or otherwise disturbing the soil.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

SECTION 7: SUMMARY OF THE PROPOSED REMEDY

To be selected, the remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. The remedy must also attain the remedial action objectives identified for the site, which are presented in Section 6.5. Potential remedial alternatives for the Site were identified, screened and evaluated in the FS report.

A summary of the remedial alternatives that were considered for this site is presented in Exhibit B. Cost information is presented in the form of present worth, which represents the amount of money invested in the current year that would be sufficient to cover all present and future costs associated with the alternative. This enables the costs of remedial alternatives to be compared on a common basis. As a convention, a time frame of 30 years is used to evaluate present worth costs for alternatives with an indefinite duration. This does not imply that operation, maintenance, or monitoring would cease after 30 years if remediation goals are not achieved. A summary of the Remedial Alternatives Costs is included as Exhibit C.

The basis for the Department's proposed remedy is set forth at Exhibit D.

The proposed remedy is referred to as Targeted Soil Removal with Partial Building Demolition.

The estimated present worth cost to implement the remedy is $200,000. The cost to construct the remedy is estimated to be $194,000 and the estimated average annual cost is $2,500 (year 1-3).

The elements of the proposed remedy are as follows:

1. Remedial Design
   A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Excavation and Off-site Disposal
   The western portion of the existing on-site building will be demolished and materials which can't be beneficially reused on site will be taken off-site for proper disposal in order to implement the remedy. Soils beneath the demolished portion of the building and near the southern property line which exceed residential SCOs, as defined by 6 NYCRR Part 375-6.8 will be excavated and disposed of at a permitted off-site disposal facility. Approximately 120 cubic yards of contaminated soil will be removed from the site and clean backfill will be imported to the site that meets the residential SCOs.
3. Groundwater Monitoring

   A Monitoring Plan will be developed to assess the performance and effectiveness of the remedy. The plan will include annual monitoring of groundwater. It is assumed that monitoring will continue for a period of three years, though findings will be assessed to determine the need for continued monitoring or other appropriate measures thereafter.

Exhibit A

Nature and Extent of Contamination

This section describes the findings of the Remedial Investigation for all environmental media that were evaluated. As described in Section 6.1, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium for which contamination was identified, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable SCGs for the site. The contaminants are arranged into four categories: volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), polyfluoroalkyl substances (PFAS), and inorganics metals. For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs identified in Section 4 and Section 6.1.1 are also presented.

Groundwater

During the 2012 Site Characterization, several temporary monitoring wells were installed and identified very low levels of acetone, xylenes, toluene, and 1,3,5 trimethylbenzene with total VOC concentrations less than 10 ppb. The scope of the remedial investigation was to determine downgradient groundwater quality after the 2016 IRM was performed. During the RI, three downgradient wells were installed and sampled during three sampling rounds. Two rounds of sampling were for VOCs, SVOCs, PCBs and pesticides, metals, and cyanides. The third sampling round was for PFAs.

Sample results from the RI did not indicate any VOCs in groundwater as were previously detected during the. Site Characterization. 1,4-dioxane was detected at 0.2 ppb and ND which is below the screening level of 1 ppb for groundwater. Iron, lead, manganese, and sodium were all detected above SCGs in groundwater. Iron, manganese and sodium are all naturally occurring in groundwater and were not considered as site-related contaminants. Lead exceeded the groundwater SCG of 25 ppb in one well; however, the water samples had a high turbidity. A decanted sample of water from this well that was analyzed for inorganics did not contain concentrations exceeding the groundwater SCGs. This suggests that lead exceedances observed are likely a result of elevated turbidity. Please refer to Figure 3 for groundwater sample locations and flow direction.

For PFAS, perfluorooctanoic acid (PFOA) and perflourooctanesulfonic acid (PFOS) were reported at concentrations of ND and 4.6 parts per trillion (ppt), respectively, below the 10 ppt screening levels for groundwater for each. No other individual PFAS exceeded the 100 ppt screening level. The total concentration of PFAS, including PFOA and PFOS, were reported at concentrations of up to 4.6 ppt, below the 500 ppt screening level for groundwater.

Table #1 – Groundwater Monitoring Results

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
Metals			
Lead	3.1 to 53	25	2/9

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.
b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

Based on the findings of the RI, the presence of lead may have resulted in the contamination of groundwater. The site contaminants that are considered to be the primary contaminants of concern which will drive the remediation of groundwater to be addressed by the remedy selection process is: lead.

Soil

Acetone was the only VOC to exceed unrestricted use SCOs and the exceedances were limited to within the footprint of the former elevated oil/water separator. SVOCs were not detected above SCOs. Lead concentrations in subsurface soil exceed the unrestricted use SCO across much of the site including a few of the samples collected along the Site boundary. The Groundwater Protection SCO for lead of 450 ppm was exceeded in one sample. Lead concentrations exceeding residential use SCOs are limited to two general on-site areas: one sample location on the south-central portion of the property and two locations in the northwest corner of the property. The data collected suggest that the limits of residential SCO use exceedances are within the site boundary.

Low levels of PCBs detected in one surface soil sample exceeded the unrestricted use SCO of 0.1 ppm, but PCB concentrations were below the residential use SCO of 1 ppm. PCBs were not detected anywhere else on-site; therefore, PCBs will not be considered a contaminant of concern.

Lead was the only contaminant detected in both soil and groundwater exceeding the residential use SCO of 400 ppm for soil and the SCG for groundwater of 25 ppb. Five surface soil samples exceeded the protection of Groundwater Protection SCO for lead of 450 ppm, and one near surface soil sample (2”-6”) exceeded the Groundwater Protection SCO for lead. Data from the RI suggest that sample turbidity may be the cause for lead exceedances in groundwater and may not be due to the lead detected in on-site soil. Please refer to Figures 4 and 5 for surface and sub-surface soil results exceeding SCOs.

Only one surface soil sample taken in the drainage ditch exceeded the unrestricted use SCO for lead at 65.9 ppm.

Table 2 – Soil Results

Detected Constituents	Concentration Range Detected (ppm)[a]	Residential SCO (ppm)[c]	Frequency Exceeding Residential SCO	Unrestricted SCO/ Groundwater Protection SCO[bd] (ppm)	Frequency Exceeding Unrestricted Use SCO
VOCs					
Acetone	ND to 0.11	100	0 of 20	0.05/0.05	2 of 20
Metals					
Lead	8.9 to 888	400	6 of 63	63/450	49 of 63
PCBs					
Total PCBs	ND to 0.38	1	0 of 2	0.1/3.2	2 of 2

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.
c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Residential Use.
d - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Groundwater.

Migration of lead in subsurface soil by natural transport processes is likely to be minimal, as these soils are not subject to weathering or storm water runoff. In some subsurface soils, lead may bind to organic material and sulfides under reducing conditions within the soil matrix to form relatively insoluble complexes that limit transport and bioavailability. Groundwater in areas of affected soil occurs at depths below the soil interval where lead is known to exceed the groundwater protection SCO, suggesting that groundwater interaction with affected soil is unlikely. Therefore, horizontal and vertical migration of lead in subsurface soil is expected to be limited. The presence of lead in off-site subsurface soil samples below the residential use SCO is indicative that lead transport from the site has not contributed to lead levels in the drainage ditch.

Based on the findings of the Remedial Investigation, the presence of lead and acetone has resulted in the contamination of soil. The site contaminants identified in soil which are considered to be the primary contaminants of concern, to be addressed by the remedy selection process are lead and acetone.

Exhibit B

Description of Remedial Alternatives

The following alternatives were considered based on the remedial action objectives (see Section 6.5) to address the contaminated media identified at the site as described in Exhibit A.

Alternative 1: No Further Action

The No Further Action Alternative recognizes the remediation of the site completed by the IRM(s) described in Section 6.2 This alternative leaves the site in its present condition and does not provide any additional protection of the environment.

Alternative 2: Restoration to Unrestricted Conditions

This alternative achieves all of the SCGs discussed in Section 6.1.1 and Exhibit A and soil meets the unrestricted soil clean objectives listed in Part 375-6.8 (a). This alternative would include: excavation of soil exhibiting lead concentration above the Unrestricted SCO. Demolition of the entire building and removal of the concrete slab is required. Approximately 1,500 tons of soil and 1,200 tons of demolition debris would be required to be disposed of at a permitted off-site facility. Site restoration includes backfill with clean soil and at least six inches of topsoil. The remedy would not rely on institutional or engineering controls to prevent future exposure. There is no Site Management, no restrictions, and no periodic review.

Capital Cost:.....$823,000

Alternative 3: Targeted Soil Removal

This alternative involves excavation and off-site disposal of soils that exceed the Residential SCOs. The remedy involves excavation of approximately 90 tons of soil and disposal at a permitted facility. Up to three years of post-excavation groundwater monitoring are included to confirm that groundwater is not impacted by site-related contaminants. Since lead levels beneath the building will exceed Residential SCOs, the building is included as site cover. This alternative includes an environmental easement, site management plan, and periodic reviews.

Present Worth:.....$174,000
Capital Cost:.....$109,000
Annual Costs:.....$12,500(year 1-3), $2,500 (year 4-30)

Alternative 4: Targeted Soil Removal with Partial Building Demolition

This alternative involves excavation and off-site disposal of soils that exceed the Residential SCOs, partial demolition of the western portion of the building, removal of the concrete slab, and excavation and off-site disposal of soils beneath the slab that exceed the residential SCOs, currently estimated to be two feet deep. Approximately 150 tons of soil and 200 tons of demolition debris are the estimated quantities for off-site disposal at a permitted facility. Up to three years of post-excavation groundwater monitoring are included to confirm that groundwater is not impacted by site-related contaminants. Since lead levels in on-site soil will meet the Residential SCOs, a site cover is not included.

Present Worth: *$200,000*
Capital Cost: *$194,000*
Annual Costs: ..... *$2,500(year 1-3)*

Exhibit C

Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
1. No Further Action	$0	$0	$0
2. Restoration to Unrestricted Conditions	$823,000	$0	$823,000
3. Targeted Soil Removal	$109,000	*$12,500(year 1-3)* *$2,500 (year 4-30)*	$174,000
4. Targeted Soil Removal with Partial Building Demolition	$194,000	*$2,500(year 1-3)*	$200,000

Exhibit D

SUMMARY OF THE PROPOSED REMEDY

The Department is proposing Alternative 4, Targeted Soil Removal with Partial Building Demolition as the remedy for this site. Alternative 4 would achieve the remediation goals for the site by excavation and off-site disposal of soils exceeding the Residential SCO for lead. The elements of this remedy are described in Section 7. The proposed remedy is depicted in Figure 6.

Basis for Selection

The proposed remedy is based on the results of the RI and the evaluation of alternatives. The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375. A detailed discussion of the evaluation criteria and comparative analysis is included in the FS report.

The first two evaluation criteria are termed "threshold criteria" and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

The proposed remedy, Alternative 4 will satisfy this criterion by excavating and disposing of soils exceeding the residential SCOs at a permitted facility. Alternative 2 will meet this criterion because the building will be demolished, and all contaminated soils exceed unrestricted use will be disposed of at a permitted facility. Alternative 3 meets this criterion because all soils exceeding Residential SCOs from currently accessible areas of the site would be disposed of at a permitted facility. Remaining soils beneath a portion of the building would be under site cover. Alternative 1 does not satisfy this criterion because soils exceeding the Residential SCOs will remain on-site and there will be no site cover or use restrictions. Alternative 1 will no longer be considered.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the Department has determined to be applicable on a case-specific basis.

Alternative 2 meets all SCGs because there will no longer be any contaminants on-site exceeding the unrestricted SCOs. Alternative 3 will meet SCGs because the accessible soils exceeding residential SCOs will be excavated and disposed of off-site. The remaining soils exceeding residential SCOs will be beneath the building. Alternative 4 meets SCGs because all soils exceeding residential SCOs will be excavated and disposed of at a permitted facility, and there will be no site cover requirements.

The next six "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of

these controls.

Long-term effectiveness is best accomplished by Alternative 2, because all contaminated soils exceeding Unrestricted SCOs would be excavated and disposed of at a permitted facility. Alternative 4 will have long-term effectiveness because all soils will meet the residential SCOs without the requirement for soil cover. Alternative 3 meets this criterion, but it requires a portion of the building to remain as site cover.

4. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

Alternative 2 best reduces, toxicity, mobility, and volume by removing all contaminated soils exceeding Unrestricted SCOs. Alternative 4 meets this criterion by excavation and off-site disposal of all soils exceeding residential SCOs without a cover requirement. Alternative 3 meets this criterion by excavation and off-site disposal of all accessible soils exceeding residential SCOs. Remaining soils exceeding the Residential SCO will be protected by site cover (the building).

5. Short-term Impacts and Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

All of the alternatives will be effective in the short-term because exposure to contaminated soils will be removed or be protected by site cover. Since this site is within a residential neighborhood, Alternative 2 will have the most short-term impacts. Truck traffic will disrupt the neighborhood, and this alternative will have the largest carbon footprint of all of the Alternatives. Alternative 3 will have the least short-term impacts because the building will not be demolished, and the quantity of soil to removed will be relatively small. While the quantity of soil to be removed in Alternative 4 is only a few truckloads more than Alternative 3, partial building demolition will cause more disruptions to the neighborhood.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

All remedies can be implemented within a 6-month period; however, Alternative 2 will be the most difficult to implement because it is much larger scale than Alternative 3 and 4. Alternatives 3 will be the easiest to implement because no building demolition is required, and soil removal quantities are relatively small. Alternative 4 will be more involved because partial demolition and repair of the current structure will be required.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

The capital costs of the alternatives vary $109,000 to $823,000. Alternative 3 has the lowest cost that meets all other criterion. Alternatives 2 and 4 involve partial or complete building demolition, which may not be a

desirable cost. Alternative 2 is the most expensive and provides little additional environmental benefit for a significant added cost.

8. Land Use. When cleanup to pre-disposal conditions is determined to be infeasible, the Department may consider the current, intended, and reasonable anticipated future land use of the site and its surroundings in the selection of the soil remedy.

Currently the property is vacant and zoned for single-family residential use. Alternatives 2 and 4 allow for the best use of the property in accordance with current zoning. Alternative 3 would require institutional and engineering controls and not allow the best use of the property.

The final criterion, Community Acceptance, is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

9. Community Acceptance. Concerns of the community regarding the investigation, the evaluation of alternatives, and the PRAP are evaluated. A responsiveness summary will be prepared that describes public comments received and the manner in which the Department will address the concerns raised. If the selected remedy differs significantly from the proposed remedy, notices to the public will be issued describing the differences and reasons for the changes.

Alternative 4 is being proposed because, as described above, it satisfies the threshold criteria and provides the best balance of the balancing criterion.

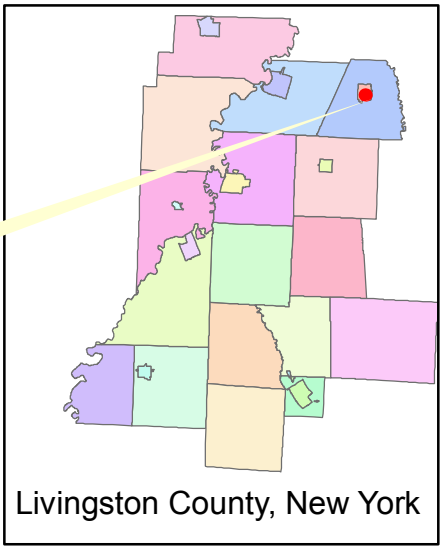
Figure 1 - K&K Stripping

N
W E
S

0 25 50 100 150 200
Feet

Legend

- Class C Spring Brook Trib.
- Culvert
- Drainage Ditch



NOTES:
1. IRM - INTERIM REMEDIAL MEASURES
2. 6 NYCRR PART 375, TABLE 375-6.8 SOIL CLEANUP OBJECTIVES, DECEMBER 14, 2006 AND CP-51, SOIL CLEANUP GUIDANCE, TABLE 1: SUPPLEMENTAL SOIL CLEANUP OBJECTIVES, OCTOBER 21, 2010.
3. SAMPLE LOCATION SYMBOLS WITHOUT COLORED LINES REPRESENT SAMPLES WITH RESULTS BELOW SCOs.
4. IMPORTED GRAVEL ABOVE GRADE WAS LAID OVER FABRIC DURING IRM ACTIVITIES.
5. Area 2 limits of excavation demarcated with orange snow fence, backfilled to grade with gravel and compacted.
6. Area 3 demolition left exposed soil at grade. Exposed soil from demolition covered with orange snow fence and six inches of gravel and compacted.

AERIAL IMAGERY PROVIDED BY NYS GIS CLEARINGHOUSE, IMAGERY YEAR 2015

N

LEGEND

IRM DOCUMENTATION SAMPLING

- COMPOSITE SIDEWALL SAMPLE (0-2')
- IRM EXCAVATION LIMITS
- COMPOSITE SIDEWALL SAMPLE (0-2')
- COMPOSITE SIDEWALL SAMPLE EXCEEDING UNRESTRICTED SCOs
- COMPOSITE SIDEWALL SAMPLE EXCEEDING RESIDENTIAL AND PROTECTION OF GROUNDWATER SCOs
- COMPOSITE FLOOR SOIL SAMPLE (6") EXCEEDING UNRESTRICTED, RESIDENTIAL, AND PROTECTION OF GROUNDWATER SCOs

SITE FEATURES

- UNDERGROUND PIPE
- APPROXIMATE FORMER ELEVATED OIL WATER SEPARATOR
- EXTENT OF IMPORTED GRAVEL ABOVE GRADE
- PROPERTY LINE
- DITCH

NYSDEC
REMEDIAL INVESTIGATION
K&K STRIPPING SITE
LIMA, NEW YORK
SITE NO. 826021

INTERIM REMEDIAL MEASURES SITE LAYOUT

0 10 20 40
Feet

FILE 62147
FEBRUARY 2018

O'BRIEN & GERE ENGINEERS, INC.

Figure 3 - Groundwater

N
W E
S

0 10 20 40 60 80
Feet

Legend

- SC-Wells
- RI Wells
- Sump Discharge Pipe
- Culvert
- Drainage Ditch
- IRM Areas

NOTES:

1. RI - REMEDIAL INVESTIGATION
   IRM - INTERIM REMEDIAL MEASURES
   SC - SITE CHARACTERIZATION
2. 6 NYCRR PART 375, TABLE 375-6.8 SOIL CLEANUP OBJECTIVES, DECEMBER 14, 2006 AND CP-51, SOIL CLEANUP GUIDANCE, TABLE 1: SUPPLEMENTAL SOIL CLEANUP OBJECTIVES, OCTOBER 21, 2010.
3. SAMPLE LOCATION SYMBOLS WITHOUT COLORED RINGS REPRESENT SAMPLES WITH RESULTS BELOW SCOs.
4. GRAYED SYMBOLS REPRESENT LOCATIONS IN WHICH NO SAMPLE WAS COLLECTED AT A DEPTH LESS THAN 2".
5. IMPORTED GRAVEL ABOVE GRADE WAS LAID OVER FABRIC DURING IRM ACTIVITIES.
6. SURFACE SOIL (0-2")
7. NEAR SURFACE SOIL (0-6")

AERIAL IMAGERY PROVIDED BY NYS GIS CLEARINGHOUSE, IMAGERY YEAR 2015

N

LEGEND

RI SAMPLE LOCATIONS

- MONITORING WELL
- SOIL BORING
- SURFACE SOIL
- NEAR SURFACE SOIL

SC SAMPLE LOCATIONS

- NEAR SURFACE SOIL
- SOIL BORING

IRM SAMPLE LOCATIONS

- COMPOSITE FLOOR SOIL SAMPLE (6") EXCEEDING UNRESTRICTED, RESIDENTIAL, AND PROTECTION OF GROUNDWATER SCOs
- IRM EXCAVATION LIMITS

LEAD RESULTS COMPARED TO SCOs[1]

- LEAD EXCEEDS UNRESTRICTED SCO (63 mg/kg)
- LEAD EXCEEDS RESIDENTIAL SCO (400 mg/kg)
- LEAD EXCEEDS PROTECTION OF GROUNDWATER SCO (450 mg/kg)

SITE FEATURES

- UNDERGROUND PIPE
- APPROXIMATE FORMER ELEVATED OIL WATER SEPARATOR
- EXTENT OF IMPORTED GRAVEL ABOVE GRADE
- PROPERTY LINE
- DITCH

NYSDEC
REMEDIAL INVESTIGATION
K&K STRIPPING SITE
LIMA, NEW YORK
SITE NO. 826021

SURFACE SOIL (0-2")
LEAD EXCEEDANCES

0 10 20 40
Feet

FILE NO. 8653.62147
FEBRUARY 2018

O'BRIEN & GERE ENGINEERS, INC.

NOTES:

1. RI - REMEDIAL INVESTIGATION
   IRM - INTERIM REMEDIAL MEASURES
   SC - SITE CHARACTERIZATION
2. [1]6 NYCRR PART 375, TABLE 375-6.8 SOIL CLEANUP OBJECTIVES, DECEMBER 14, 2006 AND CP-51, SOIL CLEANUP GUIDANCE, TABLE 1: SUPPLEMENTAL SOIL CLEANUP OBJECTIVES, OCTOBER 21, 2010.
3. SAMPLE LOCATION SYMBOLS WITHOUT COLORED RINGS REPRESENT SAMPLES WITH RESULTS BELOW SCOs.
4. GRAYED SYMBOLS REPRESENT LOCATIONS IN WHICH NO SAMPLE WAS COLLECTED AT A DEPTH >6".
5. IMPORTED GRAVEL ABOVE GRADE WAS LAID OVER FABRIC DURING IRM ACTIVITIES.
6. SURFACE SOIL (0-2")
7. NEAR SURFACE SOIL (0-6")

AERIAL IMAGERY PROVIDED BY NYS GIS CLEARINGHOUSE, IMAGERY YEAR 2015

N

LEGEND

RI SAMPLE LOCATIONS

- MONITORING WELL
- SOIL BORING
- SURFACE SOIL
- SURFACE SOIL/SOIL BORING
- NEAR SURFACE SOIL

SC SAMPLE LOCATIONS

- NEAR SURFACE SOIL
- SOIL BORING

IRM DOCUMENTATION SAMPLING

- COMPOSITE SIDEWALL SAMPLE (0-2')
- IRM EXCAVATION LIMITS

LEAD RESULTS COMPARED TO SCOs[1]

- LEAD EXCEEDS UNRESTRICTED SCO (63 mg/kg)
- LEAD EXCEEDS RESIDENTIAL SCO (400 mg/kg)
- LEAD EXCEEDS PROTECTION OF GROUNDWATER SCO (450 mg/kg)

SITE FEATURES

- UNDERGROUND PIPE
- APPROXIMATE FORMER ELEVATED OIL WATER SEPARATOR
- EXTENT OF IMPORTED GRAVEL ABOVE GRADE
- PROPERTY LINE
- DITCH

NYSDEC
REMEDIAL INVESTIGATION
K&K STRIPPING SITE
LIMA, NEW YORK
SITE NO. 826021

RI, IRM, AND SC SUBSURFACE SOIL (>6" DEPTH) LEAD EXCEEDANCES

0 10 20 40
Feet

FILE 62147
FEBRUARY 2018

O'BRIEN & GERE ENGINEERS, INC.

Figure 6 - K&K Stripping
Proposed Remedy

N
W E
S

0 10 20 40 60 80
Feet

Legend

- K&K Stripping
- Soil Removal Area 1
- Soil Removal Area 2
- Culvert
- Drainage Ditch