



PUBLIC COMMENT DRAFT

Analysis of Brownfields Cleanup Alternatives

MassDEP RTN 1-11501

July 2020

A handwritten signature in black ink that reads 'Maxwell P. Scott'.

Prepared by: Maxwell Scott

Former Dalton Hardwood North Street Dalton, Massachusetts

Prepared For:

Town of Dalton
462 Main Street
Dalton, Massachusetts 01226

Prepared By:

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650 Suffolk Street
Lowell, Massachusetts 01854

A handwritten signature in blue ink that reads 'Thomas M. Biolsi'.

Reviewed by: Thomas Biolsi, PG



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1.0 Introduction

TRC Environmental Corporation (TRC) prepared this Analysis of Brownfields Cleanup Alternatives (ABCA) report for the Former Dalton Hardwood property located at North Street in Dalton, Massachusetts (the Site) on behalf of the Town of Dalton (the “Town”). Additional Brownfields Assessment grant funding through the Berkshire Regional Planning Commission (BRPC) and a sub-grant awarded to the Town of Dalton in June 2020 from BRPC’s Brownfields Revolving Loan fund program will fund the required cleanup of the Site prior to its redevelopment.

1.1 Site Description and History

Based on information obtained during TRC’s 2018 Phase I Environmental Site Assessment (ESA), the Old Dalton Hardwood Site (the Site) is approximately 9.5 acres located on North Street in Dalton, Berkshire County, Massachusetts, in a rural area with a few small commercial and residential structures nearby. The Site is described by the Town of Dalton tax assessor as Map 215, Lot 13, is zoned as R4 residential, and is currently owned by the Town of Dalton.

The Site historically was used as a staging yard and saw mill, “aka old Dalton Hardwood,” from approximately 1950 until the mid-1990s, when operation ceased and moved to an adjacent property to the east, just over the Town border to the Town of Windsor. The Town of Dalton acquired the Site in 2014. The Site is currently vacant land with one garage structure in poor condition and a visible foundation of a former house.

A Site Location Map is provided as Figure 1 and a Site Plan is provided as Figure 2.

1.2 Surrounding Properties Use and History

The Site is bordered by North Street to the south, undeveloped land to the north and west, and the current Dalton Hardwood Company to the east, just over the Town border in the Town of Windsor. Surrounding properties are and historically have been occupied by a mixture of agricultural land and residential development. The Site is abutted by wooded land to the north and south, commercial property to the east (existing Dalton Hardwood operation), and wooded and agricultural land to the west.

1.3 Site and Surrounding Resource Areas

As part of an American Society for Testing and Materials (ASTM) Phase I Environmental Site Assessment (ESA) prepared by TRC in November 2018, TRC reviewed the online Massachusetts Geographic Information Systems (MassGIS) Massachusetts Department of Environmental Protection (MassDEP) Priority Resource Map for information regarding the location of drinking water supplies and other resource areas in the vicinity of the Site. According to the map, the Site is not located within designated groundwater protection areas or Interim Wellhead Protection Areas and is mostly surrounded by Protected Open Space. However, the southern corner of the Site is located within 500 feet of an Interim Wellhead Protection Area. A copy of the Priority Resource Map is included as Figure 3.

GW-1 Selection Criteria	Applicable (Yes or No)
The groundwater is within a Zone II	NO
The groundwater is within an Interim Wellhead Protection Area	NO
The groundwater is within a Potentially Productive Aquifer	NO
The groundwater is within Zone A of a Class A Surface Water Body	NO
The groundwater is located greater than 500 feet from a public water system distribution pipeline	NO
The groundwater is located within 500 feet of a private water supply well that was in use at the time of notification pursuant to 310 Code of Massachusetts Regulations (CMR) 40.0300 and was installed in conformance with an applicable laws, by-laws, or regulations	NO
Notes: Information Source - <i>MassGIS MassDEP Priority Resource Map.</i>	

The surface elevation of the Site is approximately 1,431 feet above mean sea level with local topography sloping steeply to the south/southeast. Shallow groundwater is presumed to flow to the south-southeast toward Weston Brook based upon local topography.

1.4 Proposed Site Use

The Town of Dalton intends to redevelop the Site into a park/recreational area (North Mountain Park) for residents and visitors and users of the Town of Dalton.

1.5 Applicable Soil and Groundwater Reporting and Cleanup Categories

Results of the soil samples will be compared to the Massachusetts Contingency Plan (MCP) Reportable Concentrations (RCs) for S-1 soils (RCS-1) and to the Method 1 S-1 soil cleanup standards to evaluate potential additional cleanup options. Groundwater is not anticipated to be encountered during cleanup activities as groundwater is reportedly deeper than 16 feet below grade. However, if groundwater is encountered and if groundwater samples are collected, the results of groundwater samples will be compared to RCs for GW-2 groundwater (RCGW-2) and to the Method 1 GW-3 groundwater cleanup standards to evaluate potential cleanup options.

2.0 Environmental Site Conditions

2.1 Previous Environmental Investigations

In July 2018, MassDEP was on Site to inspect the possible release of contamination. One building and remnants of other foundations were observed. The one building still standing appeared to have been used as a maintenance and repair garage. Several aboveground storage tanks (ASTs) and metal pipes were observed in the center of the Site. One of the on-Site personnel during the visit indicated the possibility of the Dalton Hardwood Company accepting tanks as scrap metal. The Town commission previously had a few test pits excavated to determine the depth to bedrock and uncovered a car frame, crushed drums, and scrap metal. The location of the pits was approximately 400 feet north of the garage. No indication of petroleum contamination was observed during test pit excavation activities, which extended down to approximately 16 feet below ground surface (bgs). Within the garage, several containers sized 5 to 30 gallons were observed containing lubricating and hydraulic oils. It was recommended to conduct a Phase I ESA/due diligence prior to development. Based on the findings of TRC's Phase I ESA report dated November 2018, two recognized environmental conditions (RECs) were identified as summarized below.

REC No. 1

Information was provided by a person interviewed during the Phase I regarding oil sprayed on the dirt road for dust suppression during former Site operations. Although no oil was observed along the access road on the Site, the potential exists for oil contamination to be present along the dirt road that runs through the Site and/or under the existing pavement under the access road in the southern portion of the Site. This would constitute a REC by the potential presence of hazardous materials in the environment. Depending upon the duration, amount, and frequency of oil application, the REC may be associated with potential soil and/or groundwater contamination.

Following the completion of the Phase I ESA, based on information received from contacts with knowledge of historic Site usage, a water truck was used for dust suppression and there was no knowledge of oil being used as a dust suppressant anywhere on the Site. Therefore, TRC concluded a miscommunication likely occurred during the Site visit in October 2018, and as a result, REC #1 was no longer considered a REC. However, as a conservative measure, soil sampling was completed along the dirt road through the Site (as described below) during Phase II investigations.

REC No. 2

TRC observed a vent pipe along the southeast corner of the garage on the Site. TRC believed a UST may be present near this location, possibly located in front of the garage near the southeast corner of the building due to the lack of large trees in this area. No additional information was available that indicated the contents, size, or age of this suspected UST but TRC assumes the UST was less than 1,000 gallons and contained No. 2 fuel oil to heat the garage and possibly the former adjacent house. The potential exists for the assumed contents of petroleum in the UST to have impacted the subsurface conditions at the Site, which would constitute a REC.

Based on the findings of the Phase I ESA, TRC conducted Phase II ESA activities at the Site in May 2019 consisting of the following:

- The collection of four surface soil samples from 0 to 3 feet along the dirt road through the Site for laboratory analysis of petroleum-related compounds and lead. No petroleum-related compounds or lead were identified in the soil above the State's reporting criteria supporting the historical accounts of only water being sprayed on the dirt roads for dust suppression.
- Excavating a test pit near the location of a suspected UST near the southeast corner of the garage and finding a 1,000-gallon UST. The UST appeared to be roughly half-full of petroleum/water mixture and insufficient funds were available at the time to pump, clean, and remove this UST because of the additional liquid present in the UST and the discovery of a previously unknown 275-gallon AST found discarded in the woods approximately 50 feet southeast of the garage as described below.
- Finding a newly discovered 275-gallon AST located approximately 50 feet southeast of the garage in the woods containing approximately 6 inches of liquid. This AST was pumped out, cleaned, and removed off the Site. No petroleum staining was observed under the AST.

The Town of Dalton received a United States Environmental Protection Agency (EPA) ID number in July 2019 to allow the bulk transport and disposal of petroleum liquids from the UST. TRC will conduct oversight of the above activities using EPA Brownfields Petroleum Assessment grant funding under BRPC. Sub-grant funding awarded to the Town of Dalton in June 2020 from BRPC's Brownfields Revolving Loan Fund program will be used by the Town to procure the services of an environmental contractor to remove and dispose of the UST and petroleum containers.

2.2 Regulatory Compliance History

MassDEP inspected the Site on July 13, 2018, for an Initial Compliance Field Response and noted the UST and various containers observed in the garage. MassDEP indicated to the Town that in order to assume active ownership and construct a recreational park on the Site, a Phase I/II due diligence site assessment would likely have to be performed. TRC completed a Phase I ESA in November 2018 and Phase II ESA activities began in May 2019. There are no existing Release Tracking Numbers (RTNs) currently associated with this Site.

2.3 Potential Threats to the Public Health and Environment

2.3.1 Soil Migration Pathway

Most of the Site, except for the southern portion of the access driveway to the Site, is unpaved and therefore, the surface soils (top 3 feet) are considered accessible under the MCP. The Site is not currently used and access to the Site is restricted by a gate across the driveway off North Street. However, a potential exists for human exposure to contaminated soil from petroleum-based liquids at the Site including potential trespassers (including children). Possible exposure pathways to trespassers on the Site are dermal contact, ingestion, and inhalation of particulates released from potentially contaminated soil and/ or petroleum-based liquids.

No petroleum-related contaminants have been identified in soil samples collected along the dirt road on the Site but no soil samples have been collected from around or below the UST located near the southeastern corner of the garage.

2.3.2 Groundwater Migration Pathway

Groundwater has not been encountered during environmental investigations performed to date by TRC or others. No evidence of groundwater contamination or exposure pathways currently exists in association with the Site.

2.3.3 Surface Water Migration Pathway

The nearest waterbody is the Weston Brook, which is located approximately 1,000 feet south-southeast of the Site. No evidence of surface water contamination or exposure pathways currently exists in association with the Site.

2.3.4 Air Migration Pathway

No occupied buildings are currently present on the property but one unoccupied building (garage) currently exists. The Town plans to demolish the existing garage building and does not anticipate constructing an occupied building as part of the proposed park development. Therefore, the potential air migration pathway does not currently exist for the Site.

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3.0 Alternatives Analysis

3.1 Remedial Action Objective and Cleanup Goals

The objective of remediation at the Site is to demonstrate that a condition of No Significant Risk exists for current and future users of the property. To achieve a condition of No Significant Risk, exposure to petroleum-related compounds from the contents of the UST and other various containers (now in overpack drums), must be prevented to avoid triggering a reporting obligation under the MCP.

3.2 Identification of Remedial Alternatives

Several potential alternatives were evaluated for addressing the vessels containing petroleum-based fluids at the Site. From that evaluation, TRC identified a limited number of practicable remedial alternatives that could be implemented at the Site based on available Site data and TRC experience. The “No Further Action” alternative was also included as part of the evaluation to establish a basis for conducting remedial actions at the Site. The scenarios will require applicable MCP regulatory submittals and shall be performed in accordance with applicable MCP deadlines. The remedial alternatives identified for consideration under this ABCA include:

1. No Further Action;
2. Pumping, Cleaning, and UST Removal; Post-Excavation Sampling; and Removal/Disposal of Various Containers;
3. Pumping, Cleaning, and UST Removal; Post-Excavation Sampling; Removal/Disposal of Various Containers; and Access Road Excavation.

3.3 Evaluation and Comparison of Remedial Alternatives

Each remedial alternative identified above was first evaluated to determine whether it could achieve a condition of No Significant Risk at the Site as required by the MCP. Those alternatives that were deemed capable of achieving No Significant Risk were further evaluated using the comparative evaluation criteria specified at 310 CMR 40.0858 of the MCP. These criteria include effectiveness, short- and long-term reliability, difficulty of implementation, cost, potential risks, and timeliness. The cost estimates presented in this document are rough estimates that were prepared solely for the relative comparison of the identified alternatives and should not be used as design-level estimates. A comparison of the benefits of the proposed remedial alternatives is provided as Table 2. A table comparing the estimated costs for each selected alternative is provided as Table 3. A description of each alternative and the results of the comparative analysis are presented in the following subsections.

Remedial Alternative #1: No Further Action

This alternative involves no additional response actions. Under this alternative, the UST located at the southeast corner of the garage would not be removed and surrounding soils would not be evaluated for potential petroleum contamination. Therefore, the No Further Action alternative will not achieve a condition of No Significant Risk, as required by the MCP, and would not prevent exposure to Site contaminants. Therefore, the No Further Action alternative will not meet the

remedial action objectives or cleanup goals and will not be evaluated further with respect to the comparative evaluation criteria.

Remedial Alternative #2 – Pumping, Cleaning, and UST Removal; Post-Excavation Sampling; and Removal/Disposal of Various Containers

- Pump, clean, and remove a 1,000-gallon UST located near the southeast corner of the former garage building and collect confirmatory post-excavation soil samples after the UST is removed. If soil under and/or around the UST is found to be contaminated, further soil excavation may be necessary.
- Remove and dispose the four containers of various petroleum-based liquids present inside the garage.

This Alternative assumes subsurface remediation will not be necessary after the UST is removed and the results of the post-excavation soil samples are reviewed in conjunction with the Town's anticipated re-use for the Site. Assuming soil remediation is not warranted, this alternative is likely to eliminate the necessity for an Activity and Use Limitation (AUL) and allow for unrestricted use. This alternative would be very effective at reducing risk levels at the Site and would be easy to implement when compared to the remaining alternative. The estimated cost for implementing Remedial Alternative #2 is approximately \$15,000.

Remedial Alternative #3 – Pumping, Cleaning, and UST Removal; Post-Excavation Sampling; Removal/Disposal of Various Containers; and Access Road Excavation

This alternative is similar to Alternative #2 with the pumping, cleaning, and removal of the UST; post-excavation sampling (following UST removal); and the removal of the four containers of various petroleum-based liquids present inside the garage. However, it also includes excavating the top 3 feet along the dirt access road on the Site.

This alternative assumes the top 3 feet of the access road on the Site would be excavated and recycled/disposed off Site. The dimensions of the access road are approximately 900 feet long and 8 feet wide, which would amount to roughly 800 cubic yards (or approximately 1,360 tons assuming an average bulk density of the soil of 1.7 tons/cubic yard) of soil. Excavation and off-Site recycling/disposal of this soil would likely include a couple weeks of excavation and trucking with police detail likely necessary. Clean, imported fill would be used to replace excavated soil and would also likely require multiple days (up to a week) to place and compact. This alternative would be the most difficult to implement when compared to the remaining alternatives. This alternative would not further reduce risk because water was reportedly used for dust suppression activities (not oil) based on discussions with persons knowledgeable about former Site operations, and soil samples collected by TRC in May 2019 along the dirt access road did not reveal petroleum contamination within the top 3 feet of soil. Assuming \$45/ton for soil disposal at a Massachusetts-lined landfill, the estimated cost for implementing Remedial Alternative #3 is approximately \$90,000.

3.3.1 Comparison to Comparative Evaluation Criteria

This Section presents a relative comparison of the selected remedial alternatives (Alternatives #2 and #3).

Effectiveness – Remedial Alternatives #2 and #3 would both be effective at achieving a Permanent Solution under the MCP, 310 CMR 40.1000. Alternatives #2 and #3 would likely be equally effective as environmental samples have already been collected along the road and have not shown evidence of contamination.

Reliability – Remedial Alternative #2 is highly reliable as Site contaminants would be removed from the Site. Remedial Alternative #3 is reliable because although the UST and potentially impacted soil may remain at the Site, the property usage will be controlled by the Town of Dalton under a revised AUL.

Difficulty of Implementation – Remedial Alternative #3 is the most difficult to implement when compared to the other remedial alternatives as excavating the entire access road would require many trucks to remove excavated soil and bring in clean fill. Additionally, a police detail would likely be needed to direct traffic on North Street as trucks enter and leave the Site. Remedial Alternative #2 would be relatively easy to implement as likely only two trucks would be needed for 1 day to pump out and remove the UST and remove the various containers inside the garage.

Cost-Benefit – The cost to implement Remedial Alternative #1 would be the lowest of the alternatives and Remedial Alternative #3 would be the highest.

Potential Risks – The potential short-term and long-term risks associated with Remedial Alternatives #2 and #3 are both considered low. Potential short-term risks associated with UST pump out and removal include possible accidental spills of contaminated liquids during transport, which could result in short-term exposure to the contaminated liquid by surrounding human populations. However, any accidental spill of contaminated liquid would be immediately cleaned so the duration of potential human exposure to the contaminated liquid would be extremely short-term. Potential short-term risks associated with Remedial Alternative #3 would be creating a possible traffic hazard due to the amount of excavated soil and clean fill that would be transported from and to the Site.

Timeliness – Alternative #3 will take more time than Alternative #2 due to the difference in scale of the two projects. Alternative #2 would be the timeliest of the alternatives because the work can be completed in 1 day as opposed to an estimated 1 to 3 weeks to implement Alternative #3.

3.4 Selection of Remedial Alternative

The No Further Action Alternative (Remedial Alternative #1) was included in this analysis for comparative purposes only and is not a feasible alternative because it does not meet the remedial action objectives.

Remedial Alternatives #2 and #3 were evaluated to address existing petroleum-based liquids in the UST and small containers in the garage on the Site. Remedial Alternatives #2 and #3 are both

effective in terms of their ability to achieve a Permanent Solution and a level of No Significant Risk under the MCP, assuming the UST did not leak into the surrounding soil.

Remedial Alternative #2 is moderately easy to implement and would take less time to complete than Alternative #3. Remedial Alternative #3 would be more complicated to implement than Alternative #2 due to the addition of soil excavation and likely traffic concerns on North Street. Therefore, Alternative #2 is chosen as the preferred remedial alternative.

Green and Sustainable Remediation – The following measures will be implemented where applicable, beneficial, or feasible to improve the overall sustainability of the proposed remedial alternative as recommended by the EPA Region 1 Green and Sustainable Remediation Guidance.

Administrative

- Green remediation principles will be incorporated into the contracting process, as much as possible.
- Interim and final documents will be submitted in digital rather than hardcopy format, unless otherwise requested by EPA or required by law, in an effort to save paper. This is especially applicable to voluminous data reports.
- Optimize the use of electronic and centralized communication and outreach to the local community.

General Site Operations

- Use energy efficient equipment;
- Reuse or recycle waste;
- Protect and conserve water;
- Use alternative fuel vehicles (hybrid-electric, biodiesel, ultra-low sulfur diesel);
- Carpool for site visits and project meetings and/or use public transportation; and
- Schedule activities efficiently so as to minimize travel to and from the site.

Remediation Operations

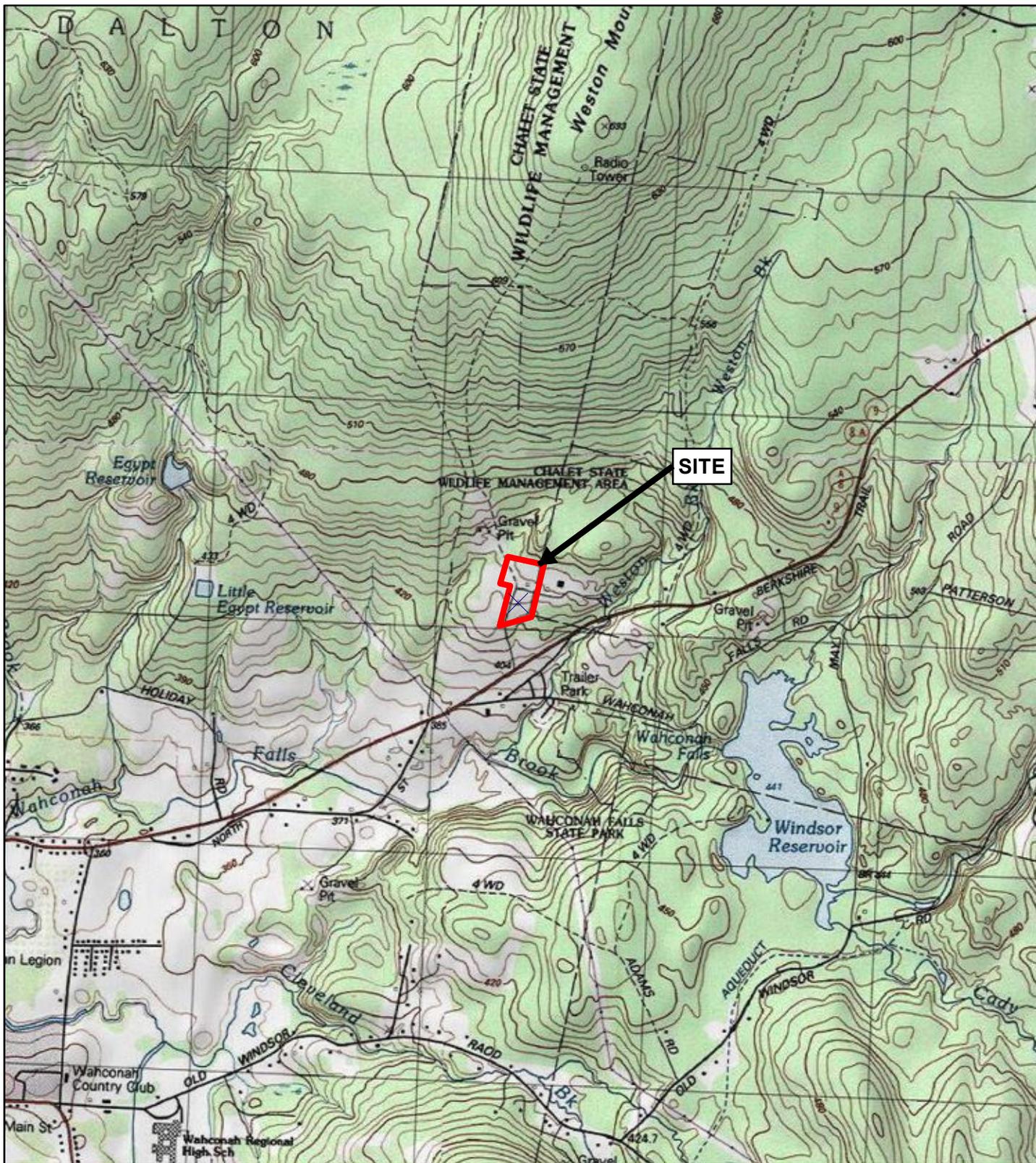
- Encourage use of fuel-efficient/alternative fuel vehicles and equipment;
- Minimize mobilizations;
- Provide for erosion control to minimize runoff into environmentally sensitive areas;
- Encourage use of diesel engines that meet the most stringent EPA on-road emissions standards available upon time of project's implementation;
- Have idle reduction policy and idle reduction devices installed on machinery;
- Use ultra-low sulfur diesel and/or fuel-grade biodiesel as fuel on machinery;
- Maximize use of machinery equipped with advanced emission controls; and
- Maximize efficiency in transport/disposal of soils and backfill, using practices such as backloading.

4.0 DOCUMENTATION AND REPORTING

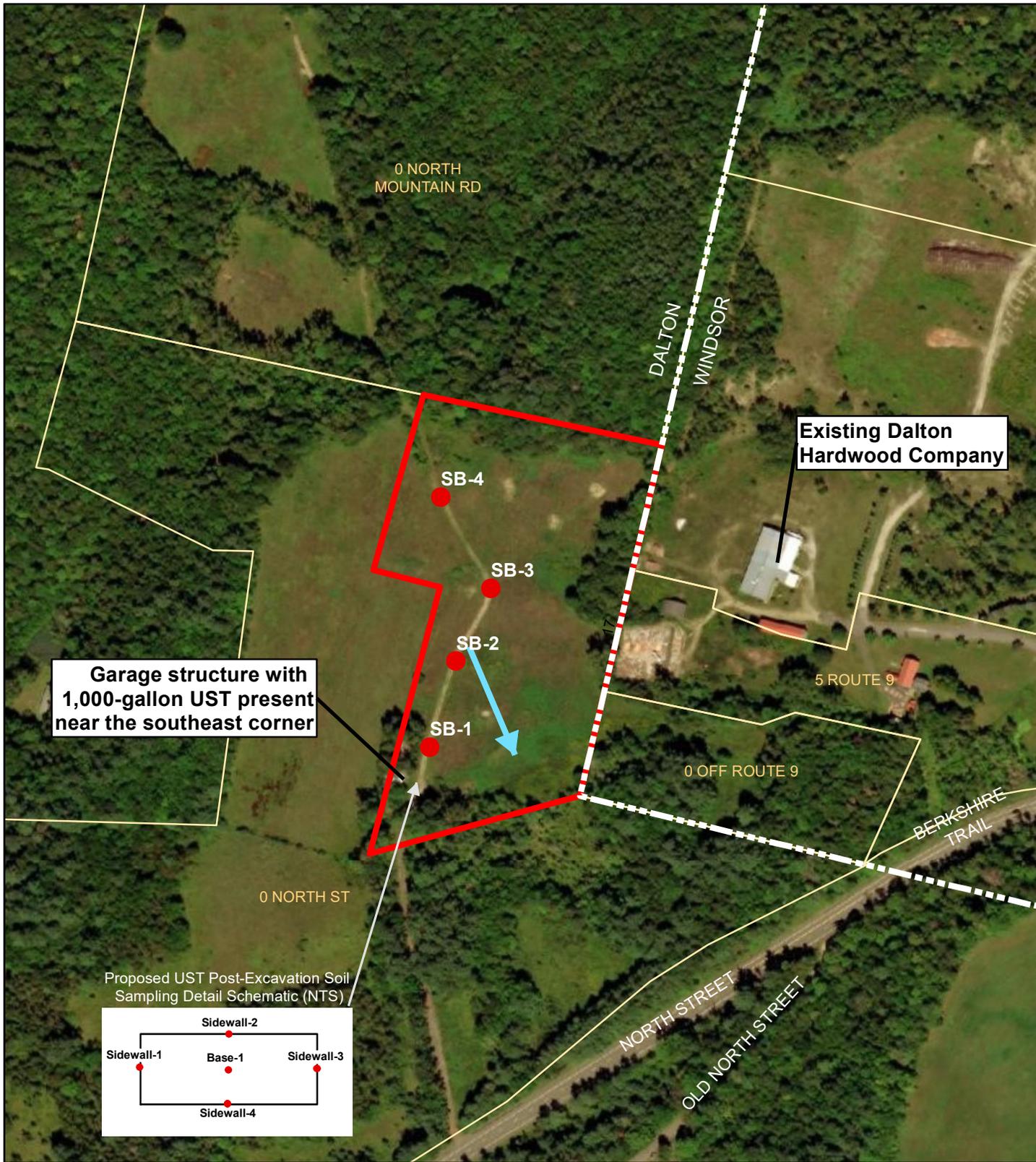
Following pumping, cleaning, and removal of the UST and the various containers inside the garage, a Phase II ESA and UST closure report will be submitted to the Town of Dalton and EPA documenting the completion of response actions at the Site. If a reportable condition is encountered during UST-removal activities, TRC will coordinate with the Town to submit a Release Notification Form to MassDEP and develop a plan to address the release.

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FIGURES



 Site Boundary	 	 Wannalancit Mills 650 Suffolk Street Lowell, MA 01854 978-970-5600
	 Map Location	<p align="center">SITE LOCATION MAP TOWN OF DALTON, MA LOT 215, LOT 13 DALTON, MA</p> <p>FIGURE 1 JULY 2020</p>



- Soil Boring Location
- Site Boundary
- ← Approximate Direction of Groundwater Flow
- Adjoining parcels

UST - Underground storage tank
 NTS - Not to scale

Base Map: ESRI and affiliates

0 300 Feet

Massachusetts

Map Location

TRC Wannalancit Mills
 650 Suffolk Street
 Lowell, MA 01854
 978-970-5600

**SITE PLAN
 FORMER DALTON HARDWOOD
 MAP 215, LOT 13
 DALTON, MA**

FIGURE 2 JULY 2020

TABLES

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Summary of Soil Analytical Results -- May 2019
Old Dalton Hardwood Site
Dalton, Massachusetts

		Sample Location:				SB-01		SB-02	SB-03	SB-04					
		Sample Name:				SB-1	Field Dup-1	SB-2	SB-3	SB-4					
		Sample Depth**:				0-3/0.5 ft	0-3/0.5 ft	0-3/0.5 ft	0-3/0.5 ft	0-3/0.5 ft					
		Sample Date:				05/14/2019	05/14/2019	05/14/2019	05/14/2019	05/14/2019					
Analysis	Analyte	Unit	S-1/GW-2	S-1/GW-3	RCS-1	Field Dup-1									
VPH															
	C5-C8 Aliphatics	mg/kg	100	100	100	13	U	15	U	11	U	12	U	16	U
	C9-C12 Aliphatics	mg/kg	1,000	1,000	1,000	13	U	15	U	11	U	12	U	16	U
	C9-C10 Aromatics	mg/kg	100	100	100	13	U	15	U	11	U	12	U	16	U
	Benzene	mg/kg	40	40	2	0.067	U	0.076	U	0.057	U	0.061	U	0.078	U
	Ethylbenzene	mg/kg	500	500	40	0.067	U	0.076	U	0.057	U	0.061	U	0.078	U
	Methyl tert butyl ether	mg/kg	100	100	0.1	0.067	U	0.076	U	0.057	U	0.061	U	0.078	U
	Naphthalene	mg/kg	20	500	4	0.34	U	0.38	U	0.29	U	0.30	U	0.39	U
	Toluene	mg/kg	500	500	30	0.067	U	0.076	U	0.057	U	0.061	U	0.078	U
	p/m-Xylene	mg/kg	100*	500*	100*	0.13	U	0.15	U	0.11	U	0.12	U	0.16	U
	o-Xylene	mg/kg	100*	500*	100*	0.067	U	0.076	U	0.057	U	0.061	U	0.078	U
EPH															
	C9-C18 Aliphatics	mg/kg	1,000	1,000	1,000	11	U	12	U	11	U	11	U	12	U
	C19-C36 Aliphatics	mg/kg	3,000	3,000	3,000	11	U	12	U	11	U	11	U	12	U
	C11-C22 Aromatics	mg/kg	1,000	1,000	1,000	11	U	12	U	11	U	11	U	12	U
	Acenaphthene	mg/kg	1,000	1,000	4	0.11	U	0.12	U	0.11	U	0.11	U	0.12	U
	Acenaphthylene	mg/kg	600	10	1	0.11	U	0.12	U	0.11	U	0.11	U	0.12	U
	Anthracene	mg/kg	1,000	1,000	1,000	0.11	U	0.12	U	0.11	U	0.11	U	0.12	U
	Benzo(a)anthracene	mg/kg	7	7	7	0.18		0.12	U	0.11	U	0.11	U	0.12	U
	Benzo(a)pyrene	mg/kg	2	2	2	0.23		0.15		0.53		0.11	U	0.12	U
	Benzo(b)fluoranthene	mg/kg	7	7	7	0.27		0.12	U	0.21		0.11	U	0.12	U
	Benzo(ghi)perylene	mg/kg	1,000	1,000	1,000	0.13		0.12	U	0.11	U	0.11	U	0.12	U
	Benzo(k)fluoranthene	mg/kg	70	70	70	0.11	U	0.12	U	0.11	U	0.11	U	0.12	U
	Chrysene	mg/kg	70	70	70	0.22		0.12	U	0.16		0.11	U	0.12	U
	Dibenzo(a,h)anthracene	mg/kg	0.7	0.7	0.7	0.11	U	0.12	U	0.11	U	0.11	U	0.12	U
	Fluoranthene	mg/kg	1,000	1,000	1,000	0.48		0.12	U	0.23		0.11	U	0.12	U
	Fluorene	mg/kg	1,000	1,000	1,000	0.11	U	0.12	U	0.11	U	0.11	U	0.12	U
	Indeno(1,2,3-cd)Pyrene	mg/kg	7	7	7	0.14		0.12	U	0.14		0.11	U	0.12	U
	2-Methylnaphthalene	mg/kg	80	300	0.7	0.11	U	0.12	U	0.11	U	0.11	U	0.12	U
	Naphthalene	mg/kg	20	500	4	0.11	U	0.12	U	0.11	U	0.11	U	0.12	U
	Phenanthrene	mg/kg	500	500	10	0.22		0.12	U	0.11	U	0.11	U	0.12	U
	Pyrene	mg/kg	1,000	1,000	1,000	0.43		0.12	U	0.23		0.11	U	0.12	U
Metals, total															
	Lead	mg/kg	200	200	200	12		8.6		6.5		5.2		17	

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).

U - Analyte was not detected at specified quantitation limit.

Values in **bold** indicate the analyte was detected.

VPH - Volatile Petroleum Hydrocarbons.

EPH - Extractable Petroleum Hydrocarbons.

RC - Reportable concentration.

* - Criteria applicable to xylene (total), the sum of the xylene isomers.

** - Sample depth for other/VPH analysis; otherwise the sample depth applies to all listed analyses.

**Table 2
Remedial Alternative Evaluation Matrix
Former Dalton Hardwood Site
North Street
Dalton, Massachusetts**

Comparative Evaluation Criteria*:		Evaluation Criteria								Notes
		Comparative Effectiveness	Comparative Reliability	Comparative Difficulty of Implementation	Comparative Cost	Comparative Implementation Risks	Comparative Benefits	Comparative Timeliness		
Remedial Action Alternative	#1	No Further Action	Low	Low	Low	Low	High	Low	Short	The No Further Action alternative will not achieve a condition of No Significant Risk as required by the MCP and would not prevent exposure to Site contaminants.
	#2	Pumping, Cleaning and UST Removal, Post Excavation Sampling, and Removal/Disposal of Various Containers	High	High	Moderate	Moderate	Moderate	High	Short 1-2 Days	
	#3	Pumping, Cleaning and UST Removal, Post Excavation Sampling, Removal/Disposal of Various Containers, and Access Road Excavation	High	High	High	High	Moderate	High	Moderate 1-3 Weeks	

* Effectiveness - the ability of the remedy to treat, destroy, detoxify, reuse, or recycle contaminants at the Site, and achieve a Permanent Solution under the MCP.

Reliability - the degree of certainty that the remedy will be successful over the short- and long-term timeframes.

Difficulty of Implementation - comparative difficulty in terms of technical complexity, integration with facility operations, monitoring requirements, and material and labor availability.

Relative Costs - Costs in terms of remedy design and implementation.

Implementation Risks - comparative risks posed by the Site to workers, the community, and the environment during and after remedy implementation.

Benefits - the comparative benefits of the alternative including the provision for productive Site reuse, restoration of natural resources, and other non-pecuniary benefits.

Timeliness - the relative time for the alternative to eliminate uncontrolled hazardous material and achieve a condition of No Significant Risk at the Site.

Table 3
Cost Summary of the Proposed Remedial Alternatives
Former Dalton Hardwood Site
North Street, Dalton, Massachusetts

Remedial Alternative	Approximate Estimated Cost
Remedial Alternative #2: Pumping, Cleaning and UST Removal, Post Excavation Sampling, and Removal/Disposal of Various Containers	\$15,000
Remedial Alternative #3: Pumping, Cleaning and UST Removal, Post Excavation Sampling, Removal/Disposal of Various Containers, and Access Road Excavation	\$90,000

Notes:

- 1 Base Year 2020
- 2 Costs do not include taxes or contractor markups.
- 3 10% soils expansion factor for granular soils
- 4 Bulk mass density of soil is assumed to be 1.7 tons per cubic yard.
- 5 Soil meets standards for disposal at Massachusetts lined landfill