

Phase I Environmental Site Assessment

Scovil Hoe Mill

11 Candlewood Hill Road
Higganum, CT

Town of Haddam

Haddam, CT

February 2018



FUSS & O'NEILL

146 Hartford Road
Manchester, Connecticut 06040



February 16, 2018

Ms. Liz Glidden
Town of Haddam
30 Field Park Drive
Haddam, CT 06438

RE: Phase I Environmental Site Assessment
Scovil Hoe Mill
11 Candlewood Hill Road, Higganum, CT

Dear Ms. Glidden:

We are pleased to submit the enclosed report of the Phase I Environmental Site Assessment (Phase I ESA) for the above-referenced Site. The assessment was conducted in conformance with Standard Practice E 1527-13 for Environmental Site Assessments published by ASTM International. Note that ASTM 1527-13 requires that certain elements of a Phase I ESA be updated if the report is to be relied upon more than 180 days following its completion. If updated, the report will remain viable for up to one year. Assuming the completion date is the date of the site inspection, which was conducted on November 9, we recommend you contact us to discuss your options to update or develop a new report after May 8, 2018.

We have identified several recognized environmental conditions associated with the Site. These are discussed in the conclusions of our report (Section 8). In accordance with the requirements of the ASTM 1527-13 Standard, we declare that to the best of our professional knowledge and belief, we meet the definition of an environmental professional as defined in §312.10 of 40 CFR 312 and we have the specific qualifications based on education, training, and experience to assess the nature, history, and setting of the subject property. We have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Thank you for the opportunity to conduct this work. Please contact us if we can be of further assistance.

Sincerely,

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1 Introduction

Fuss & O'Neill, Inc. has been retained by the Town of Haddam to conduct a Phase I Environmental Site Assessment (Phase I ESA) of the property located at 11 Candlewood Hill Road in Higganum, CT (the "Site"). We understand that the Town of Haddam requested this Phase I ESA as part of a due diligence analysis of the Site.

In portions of this report, we refer to the Connecticut Department of Energy and Environmental Protection (DEEP). The Connecticut Department of Environmental Protection (CTDEP) was re-named the Department of Energy and Environmental Protection (DEEP) in July 2011. For convenience and consistency, we refer to the agency as the DEEP throughout this report, including the timeframe prior to July 2011, except when citing references.

1.1 Objective

The objective of this Phase I ESA was to identify recognized environmental conditions (RECs) present at the Site. As defined by Standard Practice for Environmental Site Assessments E 1527-13 developed by the American Society for Testing and Materials (ASTM, 2013), REC means:

...the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.

Historically identified Areas of Concern (AOCs) were previously identified for the Site as described in *Section 2.3*. On review of the information, these AOCs meet the definition of an REC and are referred to as RECs in *Table 1*.

1.2 Scope of Services

Our Phase I ESA was performed in conformance with Standard Practice E 1527-13 for Environmental Site Assessments by ASTM International (ASTM, 2013).

Unless otherwise stated in this report, assessments for other business environmental risks such as asbestos-containing materials, PCB-containing building materials, lead-based paint or plumbing materials, radon gas, and mold were not conducted as part of this Phase I ESA. Furthermore, we did not investigate the potential for the Site to contain wetlands, endangered species, ecological resources or historic/cultural resources. Environmental compliance or permitting issues were not considered during this investigation.

It is our understanding that this work is not being conducted under a United States Environmental Protection Agency (USEPA) Brownfield Assessment and Characterization Program grant awarded under CERCLA 9604(k)(2)(b); therefore, our investigation did not include an assessment of controlled substances. Refer to *Appendix A* for the scope of work and restrictions of this ESA and to *Section 10* of this report for limitations on this work product.

2 Site Overview

2.1 Site Information

2.1.1 Property Location, Size of Parcel, and Site Plan

The Site, occupied by the former Scovil Hoe Mill, is located on the south side of Candlewood Hill Road in a residential zone of Higganum, CT (Middlesex County). A portion of a United States Geological Survey (USGS) topographic map showing the Site location is provided as *Figure 1* (USGS, 1971) and is available on-line at http://goto.arcgisonline.com/maps/USA_Topo_Maps.

According to town records, the Site is a 4-acre irregularly-shaped parcel that has been owned by the State of Connecticut Department of Transportation since 1941. Structures located on the Site include two two-story brick buildings, an emergency generator shed, and associated paved parking and driveway areas. The remainder of the Site is comprised of grass or overgrown brush. The brick building located on the northern portion of the Site is identified as Building 81-115 and the building on the southern portion of the Site as Building 81-106. The Site is currently unoccupied but was most recently used by the State of Connecticut Department of Transportation as a repair and maintenance facility. The two main buildings were historically part of the D&H Scovil Hoe Company Mill No. 4. The mill, which manufactured farming equipment such as planters, hoes, and milled feldspar, operated the Site from approximately 1844 through 1942. A Site plan is provided as *Figure 2*. Copies of the property description card(s) and assessor's mapping available at the town of Haddam Tax Assessor's office are attached in *Appendix B*. Property cards for the Site dated back only to approximately 1980. It is possible that prior to 1980 the Site was listed at a different address associated with the former Scovil Hoe Mill properties. A description of the Site developed during the site inspection is presented in *Section 6*.

2.1.2 Utilities

Water and Sewer

According to personnel and records at the Town Building Department, the Site has historically been served by on-site septic and potable water supply wells. Neither the Town of Haddam nor the Village of Higganum is served by municipal water or sewer.

Two drinking water supply wells were identified on Site during the Site reconnaissance (*Figure 2*). A drilled well is located on the western-most upgradient limit of the Site. This was reportedly the supply well used by the CT DOT through 2014 based on the presence of a supply line extending from the well to Building 81-115. DOT personnel reported that this well was installed at a depth of 128 feet below grade, is constructed of 8" schedule-80 pipe and has a pump set at approximately 100 feet below grade. A formal well construction log was not identified however. Records reviewed from 2006 indicated that water samples collected from an interior tap served by this well, had concentrations of sodium, chloride, and barium below applicable drinking water criteria.



A second water supply well was identified beneath a manhole north of Building 81-106. No information pertaining to the construction details of this supply well was identified during the Phase I assessment. An *Atlantic Environmental Services, Inc. Summary of Stormwater Drainage Map* dated June 1996 indicated that the well was out-of-use as of at least 1996. Additional information regarding observations of the out-of-use well is provided in *Section 6.2*.

Heat

The Site buildings are not currently heated, as the facility is not currently occupied. The information reviewed indicates several iterations of underground storage tanks (USTs) for heating and vehicle fueling have existed at the Site. Specific areas of known USTs are further described on *Table 1* along with a summary of known status. The most recent information pertaining to USTs associated with heat for the buildings indicates that Building 81-115 was reportedly heated using fuel oil stored in a 2,000-gallon UST located adjacent to the exterior of the northeast building corner through approximately 2016 (REC-13). Building 81-106 was reportedly heated using fuel oil stored in a 2,000-gallon UST located adjacent to the easternmost wall of the building through approximately 2016 (REC-9). These USTs were removed in 2014 by CT DOT as further described in *Section 2.3* and *Table 1*. Historic Sanborn mapping indicates that heat was formerly supplied to the former mill buildings via coal stoves. A coal bin is depicted in the Sanborn maps to the east of Building 81-115.

Other Utilities

According to previous reports, electricity is supplied to the Site by Connecticut Light and Power via overhead lines running east-west along Candlewood Hill Road. No transformers were observed onsite.

2.1.3 Adjoining Land Use

Based on observations made during the site inspection and available mapping, properties adjoining the Site include the following:

Address	Description	Direction from Site
261 – 271 Saybrook Road	Residential	North
7 Candlewood Hill Road	Community Center/Formal Volunteer Fire Building	East
7 – 44 Maple Avenue	Residential	South
Laurel Heights Road	Residential	West
12-60 Candlewood Hill Road	Forest/Residential	West

2.2 Environmental Setting

2.2.1 Physical Setting

Topography and Geology

The topography of the Site slopes down moderately to the south towards Candlewood Hill Brook and slopes down gradually from the western to the eastern portion of the Site (USGS, 1971)(*Figure 2*). The regional topography slopes down gradually to the northeast toward the Connecticut River.

Surficial material at the Site is mapped as glacially derived thin till, generally described as being between 10 and 15 feet in thickness (Stone, et al., 1992). Fill is present at the Site comprised of ash, metal, brick, concrete, and asphalt fragments as further described in *Section 2.3* and *Table 1*.

Bedrock beneath the Site is mapped as Monson gneiss, a medium- to coarse-grained gneiss ranging from light to dark in color (Rodgers, 1985). Based on boring logs completed by Fred C. Hart Associates during their 1986 investigation, depth to bedrock at northeastern corner of the Site is approximately 34 feet below grade and depth to bedrock adjacent to the retaining wall comprising the former dam (see dam description below) is approximately 14 feet below grade. Based on boring logs completed by Diversified Technology Consultants (DTC) (*see Section 2.3*) during their 2006 investigation, depth to bedrock at the Site is between 6 and 14 feet below grade across the Site. Based on boring logs completed by Fuss & O'Neill during their 2017 investigation, depth to bedrock in the center of the Site, around the two buildings, is between 7.5 and 15 feet below grade.

Hydrology and Hydrogeology

Groundwater

The quality of groundwater beneath the Site is classified by the Connecticut Department of Energy and Environmental Protection as GA (DEEP, 2017). GA groundwater is presumed to be used for existing private and potential public or private supplies of water suitable for drinking without treatment (CTDEP, 2011).

The direction of groundwater flow within the surficial geological unit is influenced by a number of factors, including the physical characteristics of the geological unit (such as particle size), the local topography, the presence of surface water bodies, the depth to bedrock, and the type of aquifer. For an unconsolidated, unconfined aquifer, groundwater generally flows in the direction of the greatest topographic gradient. Based on USGS mapping and field observations of the local topography, the inferred groundwater flow direction is to the south and to the east. The on-site investigation performed by Fuss & O'Neill indicated that depth to groundwater at the Site ranges from approximately 2 to 15 feet below grade.

Surface Water

The nearest surface water body, Candlewood Hill Brook, is located within the subject Site, running west to east along the southern portion of the Site (USGS, 1971). Candlewood Hill Brook is classified by the



State of Connecticut as A (DEEP, 2017). Designated uses of such inland surface waters are for potential drinking water supply, fish and wildlife habitat, recreational use, agricultural and industrial supply and other legitimate uses including navigation (CTDEP, 2011). Candlewood Hill Brook flows northwest to join with other tributaries that eventually discharge to the Connecticut River, located approximately 0.6 miles northwest of the Site. Topographic maps from the 1940's indicate that Candlewood Hill Brook was dammed in the western third of the Site forming Spar Mill Pond. Spar Mill Pond formerly extended from the existing brook north to the toe of the slope of Candlewood Hill Road. The pond provided water to a flume located on the south side of Candlewood Hill Brook, which served as water power for a former mill building located east of Building 81-106.

The Connecticut River has a classification of SB in this area. Designated uses of such coastal and marine surface waters are for marine fish, shellfish and wildlife habitat, shellfish harvesting for transfer to approved areas for purification prior to human consumption, recreation, industrial and other legitimate uses including navigation (CTDEP, 2011).

2.2.2 Wetlands & Flood Zone Mapping

Based on mapping provided in the Environmental Data Resources (EDR) report included in *Appendix C*, mapped state wetlands, 100-year, and 500-year flood zones are located on the southern portion of the Site, surrounding Candlewood Hill Brook. Note that Fuss & O'Neill did not independently determine wetland boundaries or the presence of wetlands as part of this assessment.

2.2.3 Radon

According to the USEPA *Radon Zones (with State Information)* map, which is available on-line at <https://geopub.epa.gov/Radon/>, the Site is located in a county with a high radon propensity (greater than 4 picocuries per liter).

2.2.4 Location of Public Water Supply Sources

The DEEP's Connecticut Environmental Conditions Online (DEEP, 2017) and the Atlas of Public Water Supply Sources and Drainage Basins of Connecticut (CTDEP, 1982) show no public water-supply wells or aquifer protection areas within a one-half mile radius of the Site.

2.3 Previous Environmental Investigations

The reports listed below were reviewed as part of our Phase I investigation. Pertinent portions of these reports are provided in *Appendix D*.

- *Phase I Environmental Site Assessment*, prepared by Marin Environmental, Inc., dated January 2001
- *Environmental Condition Assessment Form (ECAAF) for ConnDOT Site #25*, prepared by HRP Associates, Inc., dated April 2002



- *Water Quality Monitoring Evaluation Report, ConnDOT Site #25*, prepared by Diversified Technology Consultants, dated November 2005.
- *Task 240 Water Quality Monitoring Evaluation Report, ConnDOT Site #25*, prepared by Diversified Technology Consultants, dated December 2005
- *Task 220 Exploratory Site Investigation*, prepared by DTC, dated January 2007
- *Underground Storage Tank Closure*, ConnDOT Higganum Repair Garage, 11 Candlewood Hill Road, Higganum, prepared by TRC, dated January 7, 2015.
- *Underground Storage Tank Closure Report Addendum*, ConnDOT Higganum Maintenance & Repair Facility, 11 Candlewood Hill Higganum, prepared by TRC, dated March 2, 2016.
- *Summary of Existing Conditions* prepared by Fuss & O'Neill, September 2016

Concurrently with the preparation of this Phase I ESA, Fuss & O'Neill Inc. also conducted a Phase II investigation at the Site. Sampling details from the 2017 investigation are also included in the REC Summary table provided as *Table 1*.

The potential release areas identified and described in the above reports are discussed in further detail in subsequent sections of this report and in *Table 1*.

Historically Identified Areas

The following 14 areas were identified during the 2001 investigation performed by Marin Environmental:

Marin AOC ID	Associated HRP RA ID	AOC Name and Location
AOC-1*	HRP-RA-1	Suspected fill/dumping area, located on western portion of Site
AOC-2	---	Floor drains and conveyance system, throughout building interiors
AOC-3	---	Hydraulic lift area, located in western repair bays of Building 81-106
AOC-4*	HRP-PRA-6	Historic solvent storage area, located east of Building 81-106
AOC-5*	HRP-PRA-5	Solvent steam cleaning area, located south of western side of Building 81-106
AOC-6*	HRP-PRA-4	Potential solvent release area, located off the northwest corner of Building 81-106
AOC-7	---	Utility pit, traveling north-south between the center of the two buildings
AOC-8*	HRP-PRA-9D	Heating oil and gasoline USTs, located east of building 81-106
AOC-9*	HRP-PRA-9B	Waste oil UST, located north of the center of Building 81-106
AOC-10*	HRP-PRA-9A	Heating oil UST, located off the northeast corner of Building 81-115
AOC-11*	HRP-PRA-10B	4 former USTs, located between the Site buildings
AOC-12	---	Former forge shop, located east of Building 81-106
AOC-13*	HRP-PRA-8	Septic tank and leachfield, located east of Building 81-115
AOC-14*	HRP-PRA-3	Drum storage shed, located southwest of the Site buildings

AOCs denoted with an * indicate AOCs also identified by DTC and/or HRP



The following 12 areas and three potential areas were identified during the 2007 investigation performed by DTC and the 2002 investigation performed by HRP. Note that the historical reports identified these areas as "Release Areas" (RA) although a determination was not made in the report that a release of petroleum hydrocarbons or hazardous substance had occurred at every area.

DTC RA ID	HRP RA ID	RA Name and Location
DTC-RA-1	HRP-RA-1	Historical fill/dumping area, located on western portion of Site
DTC-RA-2	HRP-RA-2	Buried drums of joint sealer, located southwest of the Site buildings
DTC-RA-3	HRP-PRA-3	Drum storage shed, located southwest of the Site buildings
DTC-RA-4	HRP-PRA-5	Solvent steam cleaning area, located south of western side of Building 81-106
DTC-RA-5	HRP-PRA-6	Historic solvent storage area, located east of Building 81-106
DTC-RA-6	HRP-PRA-7	Repair bays and pump island, of which the former is located in Building 81-115 and the latter is located between the center of the two buildings
DTC-RA-7	HRP-PRA-8	Septic tank and leachfield, located east of Building 81-115
DTC-RA-8	HRP-PRA-9C	Diesel fuel UST, located off the northeast corner of Building 81-106
DTC-RA-9	HRP-PRA-9D	Heating oil and gasoline USTs, located east of building 81-106
DTC-RA-10	HRP-PRA-10A	Former heating oil and diesel USTs, located west of Building 81-115
DTC-RA-11	HRP-PRA-10B	4 former USTs, located between the Site buildings
DTC-RA-12	HRP-PRA-10C	Former heating oil UST, located south of the center of Building 81-106
---	HRP-PRA-4	Potential solvent release area, located off the northwest corner of Building 81-106
---	HRP-PRA-9A	Heating oil UST, located off the northeast corner of Building 81-115
---	HRP-PRA-9B	Waste oil UST, located north of the center of Building 81-106

The information in the reports referenced above has been reviewed by Fuss & O'Neill and consolidated as a summary in *Table 1*. A determination has been made that the previously identified areas meet the definition of a Recognized Environmental Condition (REC) under ASTM E1527-13 and are referred hereafter as RECs.

3 Site History

The following sources were used to develop the history of the Site and, to the extent required by ASTM Practice E 1527-13, the nearby sites:

- City street directories (available at the Connecticut State Library) reviewed at approximately five-year intervals dating back to 1968
- Aerial photographs (obtained electronically from Environmental Data Resources, Inc. (EDR)) for the years 1934, 1941, 1950, 1957, 1971, 1980, 1985, 1990, 1995, 2005, 2006, 2008, 2010, and 2012



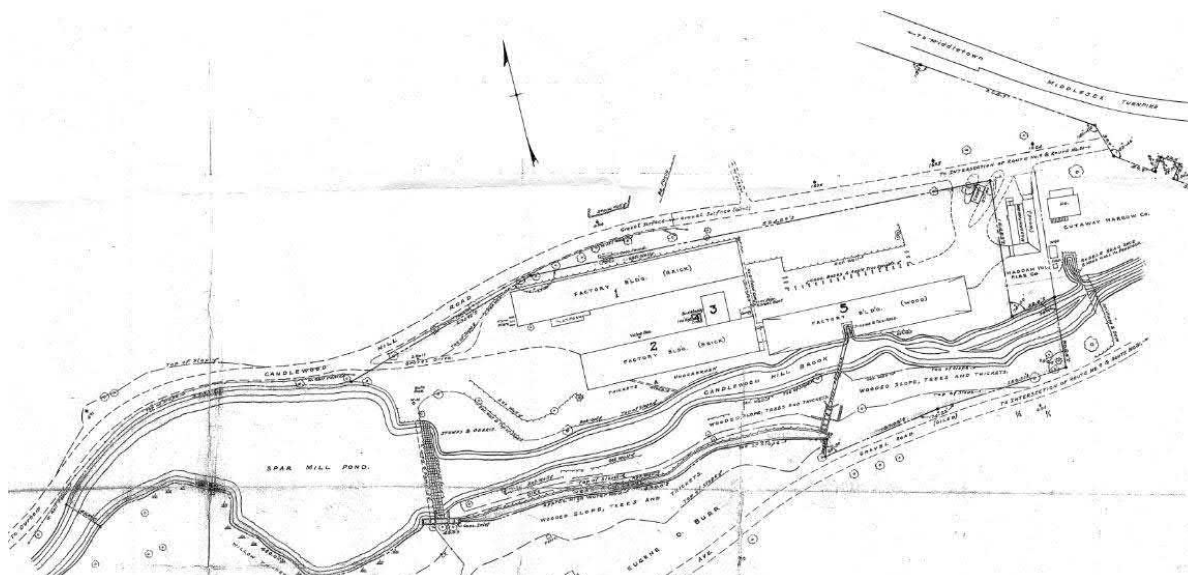
- Historical USGS topographic maps for the years 1952, 1961, 2012, and 2015, available on-line from the US Topo and Historical Topographic Map Collection (<http://geonames.usgs.gov/pls/topomaps/>)
- Historical USGS topographic maps for the years 1893 and 1952, available on-line from the Documents Department and Data Center of the University of New Hampshire (<http://docs.unh.edu/nhtopos/nhtopos.htm>)
- Historical maps of Higganum for the years 1868, 1881, 1900 obtained electronically from the University of Connecticut Map and Geographic Information Center (http://magic.lib.uconn.edu/historical_maps_connecticut.html and http://magic.lib.uconn.edu/historical_maps_connecticut_towns.html)
- Files and personnel at the town of Haddam offices of the Town Clerk, Building Department, Planning and Zoning Department, the Town Fire Marshal, and the Connecticut River Area Health District

Sanborn Fire Insurance mapping available from EDR reportedly did not cover the area of the Site. However, portions of two Sanborn fire insurance maps without dates were provided by the Town of Haddam.

The past uses of the Site and nearby properties based on the sources above are summarized below.

Site

Although the date of first development of the Site is unknown due to its age, historic records from the Town of Haddam suggest that the Site was occupied by an early sawmill and then a feldspar mill prior to being purchased by D&H Scovil Hoe Company for their Mill Complex #4 around approximately 1880. A large wooden building, labeled “factory building” in a 1941 town property map, was reportedly constructed on the Site as early as the 1830s. This structure, decorated with a cupola, is shown on an 1881 map of Higganum Village, in the 1934 aerial photo, and in the 1941 property map but appears to have been demolished by 1950. The 1881 map of Higganum Village suggests that other smaller structures may also have historically existed on the Site. Site Building 81-106 was reportedly constructed in 1887 to accommodate the increase in Scovil Mill’s production. Building 81-115 was reportedly built around 1905 to house the forge shop. The Site remained in Scovil Mill’s possession until 1931. The Site was subsequently occupied by Higganum Ice Company from 1937 to 1941, when the property was purchased by the CT DOT and the buildings converted into a garage complex.



1941 Property Acquisition Map From DOT Files

A pond appears to have occupied the western portion of the Site from at least 1881 through 1941. In the 1941 and 1950 aerial photos, it appears as though the pond was being filled. By the 1957 photo, the pond had been entirely filled in. Subsequent, environmental sampling of the fill indicated that it had been filled with a variety of polluted soil and construction materials as further described on *Table 1* as REC-1. The aerial photographs from the 1970's indicate a cone-shaped pile, which could be a sand or salt pile on the former pond area.

Furthermore, as with any site where former structures have been razed, the potential exists for fill containing ash, coal, and asphalt fragments to be present.

Due to the changing past uses of the morphology of the Site and presence of structures on the Site, it is possible that USTs formerly used to store oil to heat former structures or USTs to store gasoline and/or diesel fuel for fueling operations could still exist at the Site.

Identification of the Site's history back to first development was not possible using the reasonably ascertainable historical sources identified above due to the age of the property, resulting in a "data failure" as defined by ASTM Practice 1527-13. The significance of this data failure is discussed in *Section 8.1 (Data Gaps)*.

Nearby Properties

North

Based on aerial photographs and historic topographic maps, the area to the north of the Site appears to have been primarily residential and/or agricultural from the 1800s through about 1950. The aerial photos from 1957 through 2016 indicate a transition towards residential use and forested land. From the 1881 map of Higganum Village through the 1934 aeriels, several industrial buildings can be observed northeast of the Site. The industrial facility adjacent to Saybrook Road was formerly owned by the Higganum Manufacturing Corporation Agricultural Implements and thereafter the Rossi property, which is still in use today as a lumber and storage yard. Further to the northeast, along Depot Road, were



located the former Stevens, Hutchkiss, & Hubbard Manufacturers of Chandeliers, Lamp Fixtures, Etc. and the Russel & Company Manufacturers of Cotton Yarn, Webbing, Etc. These industrial facilities have since been demolished and only the building foundations remain.

East

Based on aerial photographs, historic topographic maps, and street directories, and the Site reconnaissance, the area directly to the east of the Site, occupied by the town center, is and historically was comprised of a combination of commercial and residential structures from the 1800s through the present. East of the town center, the land appears to have been occupied primarily by residential and/or agricultural land from the 1800s through about 1950. The aerial photos from 1957 through 2016 indicate a transition towards residential use.

South

Based on aerial photographs and historic topographic maps, the area to the south of the Site appears to have been primarily residential and/or agricultural from the 1800s through about 1957. The aerial photos from 1971 through 2016 indicate a transition towards residential use and forested land. The Higganum Reservoir is located southeast of the Site and is depicted in aerial photos and historical maps dating back to at least 1881.

West

Based on aerial photographs and historic topographic maps, the area to the west of the Site appears to have been primarily residential and/or agricultural from the 1800s through about 1957. The aerial photos from 1971 through 2016 indicate a transition towards residential use and forested land.

Off-Site Considerations Identified from Historical Information

Due to the historical agricultural and industrial activities on nearby properties, contamination has been identified in the bedrock aquifer which serves potable supply wells in the Village, as described in the reports referenced in *Section 2.3*. Properties on Candlewood Hill Road and Hull Avenue within 500 feet of the Site have previously had chromium detected in the water supply, while parcels at the intersection of Killingworth Road, Maple Avenue, and Saybrook Road have previously had the pesticide dieldrin and the chlorinated solvent trichloroethylene detected in the water supply. Several properties in this area also had varying concentrations of sodium and chloride detected in the water samples.

DEEP issued the Town of Haddam a Consent Order #4793 in March 1989 indicating that the Town had a community pollution problem and that the DEEP was unable to determine the entity responsible for impacting the groundwater. As such potable drinking water has been supplied to several properties on Depot Road, Candlewood Hill Road, and Saybrook Road in the vicinity of the Site.

CT DOT conducted a water quality monitoring evaluation study in 2005 to evaluate potential impacts to Village groundwater associated with operations at the Site. This evaluation consisted of the collection of groundwater samples from 21 private supply wells. The report conclusion indicated dieldrin and trichloroethylene (TCE) impacts to groundwater in the Village were not attributed to operations at the Site. This conclusion was based on absence of these parameters detected in Site soil samples, detection of dieldrin in supply wells upgradient of the site, and detection of TCE downgradient of the Site proximal to parcels reportedly known to have used TCE in site operations.

4 Federal, State, and Local File Review

Files of Federal, State and local agencies were reviewed for environmentally-related issues pertinent to the Site and nearby parcels, such as permits, inspection reports, enforcement history or documented releases of hazardous materials. The sources of information listed in the following table were researched to identify properties of concern within distances of the Site specified by ASTM Practice E 1527-13.

Information Source	Search Distance
Federal Files	
National Priorities List (NPL)	1 mile
Delisted NPL Sites	0.5 mile
Resource Conservation and Recovery Act (RCRA) CORRACTS list (RCRA Site Subject to Corrective Action)	1 mile
Resource Conservation and Recovery Act (RCRA) Treatment, Storage or Disposal Facility (TSDF) List	0.5 mile
Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) List, including No Further Remedial Action Planned (NFRAP) sites	0.5 mile
RCRA Generators List	property and adjoining
RCRA No Longer Regulated (NLR) List	property and adjoining
Federal Institutional / Engineered Control List	property only
Emergency Response and Notification (ERNS) List	property only
State Files	
Hazardous Waste Site List (State sites equivalent to NPL)	1 mile
Hazardous Waste Site List (State sites equivalent to CERCLIS)	0.5 mile
Landfill and Solid Waste Site	0.5 mile
Leaking Underground Storage Tank (LUST) List	0.5 mile
State Voluntary Clean-up or Brownfield Sites	0.5 mile
Oil & Chemical Spills Database	property and adjoining
Registered Underground Storage Tank (UST) List	property and adjoining
State Institutional / Engineered Control List	property only

Fuss & O'Neill used Environmental Data Resources, Inc. (EDR), an environmental database search service, to obtain the information referenced in the above table. EDR provides access to publicly available environmental databases maintained by various Federal, State, and local agencies. A copy of the information provided by EDR relative to the Site and nearby properties is included in Appendix D. The listed information sources are defined and described in detail in the EDR report.

4.1 Summary of Regulatory Database Information

Site

The environmental databases provide the following information for the Site:

BROWNFIELDS: The Site is listed in the state Voluntary Cleanup Program (VCP) Database as the result of a CT DEP-lead the initiative to remediate the Site beginning in 2002. The CT DOT reported their intent to file an ECAF in April of 2002 and submitted a follow-up report in 2006 to update the DEP on the status of the DOT investigation and remediation. The Site is also listed as a US-Brownfield Site and is found in the US EPA Assessment, Cleanup, and Redevelopment Exchange System (ACRES) database that allows brownfields grantees to electronically submit data online. The Site is listed as having both EPA and DECD (Department of Economic and Community Development Department) funding for brownfield remediation. No other information regarding this listing was provided.

CPCS: The Site is listed in the Contaminated or Potentially Contaminated Sites (CPCS) database due to its status as a voluntary remediation project within the property transfer program and due to 5 drums of herbicides and oil found buried on the Site (see REC-1 on Table 1). No other information regarding this listing was provided.

SHWS: The Site is listed in the Superfund program and in the Site Discovery and Assessment Database (SDADB) as a State Hazardous Waste Site (SHWS) due to the 5 drums of herbicides and oil found buried on the Site.

NPDES: The CT DOT was issued one National Pollution Discharge Elimination System (NPDES) permit while it operated on the Site. A general permit for industrial stormwater discharge (GSI000030) was issued in 1997 and renewed in 2003, 2009, and 2011. The permit expires in 2018.

MANIFESTS: Two hazardous waste manifests are listed for the CT DOT during their operation of the Site. On 4/19/1991, one tank truck containing 160 gallons of liquid hazardous waste (EPA waste code D001) was shipped by United Oil Recovery, Inc. under manifest CTF0053646. On 4/19/1994, one fiber carton containing 68 pounds of solid hazardous waste (EPA waste code D009) was shipped by East Coast Environmental Service Corporation under manifest CTF0244813.

LWDS: The salt storage facility associated with CT DOT is listed in the Leachate and Wastewater Discharge Inventory for active discharge to the ground (leachate and wastewater number: 4014002). An inactive discharge to the ground is also listed for the CT DOT, although no other information is provided regarding the discharge (leachate and wastewater number: 4014001) (see *Table 1*).

FINDS: The Site, under the CT DOT Repair Garage, is listed in the Facility Index System/Facility Registry System database (#110069404727). FINDS contains both facility information and 'pointers' to other sources that contain more detail. FINDS led to the Connecticut Site Information Management System (SIMS) and is part of a suite of web-based applications designed to allow the DEP staff to harmonize environmental interest information from disparate systems in a single agency-wide data repository (known as CFI). No other information is provided regarding the relation of this information system to the Site.



USTs: The following existing/former USTs were reported for the Site:

Tank ID	Contents	Capacity (Gallons)	Install Date	Current Status
H-1	Heating Oil #2	2,000	1941	Removed 1989
D-1	Diesel	550	1955	Removed 1989
R-1	Unleaded Gasoline	3,000	1960	Removed 1989
R-2	Unleaded Gasoline	3,000	1960	Removed 1989
H-2	Heating Oil #2	2,000	1962	Removed 1989
W-1	Waste Oil	1,000	1968	Removed 1989
R1-R1	Unleaded Gasoline	4,000	1989	Removed 2014
D1-R1	Diesel	4,000	1989	Removed 2014
H1-R1	Heating Oil #2	2,000	1989	Last used 2010/Permanently Closed
H2-R1	Heating Oil #2	4,000	1989	Last used 2010/Permanently Closed
W1-R1	Waste Oil	550	1989	Removed 2014

The approximate locations of the USTs associated with the Site are provided in *Figure 2* and a summary of the status of these USTs is provided in *Table 1*.

LUST: The CT DOT Maintenance Garage is listed in the Leaking Underground Storage Tank (LUST) database (LUST Case ID: 60761) as the result of an incident on November 18, 2014. The EDR record does not provide clear information regarding the origin, extent, or remediation of the spill, however, the *TRC 2015 Underground Storage Tank Report* indicated that a 4,000 gallon diesel tank ruptured during the 2014 removal spilling approximately 50 gallons of diesel into the excavation. At the time of the release the remediation contractor removed approximately 690 gallons of oil and water from the excavation (REC-01). Additional details about the release can be found in the Spills section, below.

SPILLS: Spills listed in the EDR report are summarized below:

- November 18, 2014 – Approximately 50 gallons of diesel fuel was released during the removal of a 4,000-gallon tank. Groundwater impacted with diesel fuel was pumped from the excavation at the time of the release. The tank in question was likely H2-R1. The status of the spill is reportedly “closed”. No other information was provided (see REC-9 *Table 1*).
- January 17, 2012 – 5 gallons of hydraulic oil were released to the parking lot and a catch basin as a result of a hose failure. Connecticut Tank Removal reportedly contained the spill using booms and spill pads. The status of the spill is reportedly “closed”.
- August 14, 1998 – 70 gallons of hydraulic fluid were released to a sump pit. The record in the EDR report does not indicate if or how the release was contained, but the status of the spill is reportedly “closed”. Building 81-106 formerly contained a subgrade vehicle hydraulic lift. We infer based on the known presence of a former subgrade vehicle hydraulic lift at this location that the “sump pit” referenced in the spill report is the same location (see REC-16 in *Table 1*).

Nearby Properties

As reported in the EDR Report in *Appendix D*, several properties were identified in the environmental databases within the minimum search radii required by ASTM Practice 1527-13. Based on distance from



the Site and the local hydrogeology, parcels proximal to the Site have used petroleum products and potentially hazardous substances. There is evidence of off-site releases that have impacted groundwater quality in the Village, which could potentially contribute to groundwater impacts on the Site (Appendix D).

In the event that releases at these properties have had an adverse impact on groundwater quality at the Site; however, the DEEP's policy on upgradient sources of contamination is that a downgradient property owner is not responsible for remediating groundwater contamination flowing onto his or her property from another property, as long as the contamination is present solely as a result of the off-site sources (Policy on Upgradient Contamination, Michael Harder, Director of Permitting, Enforcement, and Remediation Division, August 28, 1997).

4.2 State File Review

As part of our records review, correspondence files for the following were requested on November 7, 2017 from the DEEP Records Center and PCB Programs Department:

- CT DOT Higganum Maintenance and Repair Facility
- Scovil Hoe Company
- 11 Candlewood Hill Road
- Miscellaneous town files

Files requested include the following:

- Property Transfer Program filings
- UST files
- Leaking UST files
- P-5 inspection reports
- Water Industrial/Remediation files
- Pre-1990 Spill files
- PCB files
- Hazardous waste/RCRA files
- Air files

Files for the Site available at the DEEP Records Center are discussed below. Copies of pertinent files are presented in *Appendix E*.

- January 2001 – *Phase I Environmental Site Assessment*, prepared by Marin Environmental, Inc.
- April 2002 – *Environmental Condition Assessment Form (ECAf) for ConnDOT Site # 25*, prepared by HRP Associates, Inc.
- October 2003 – *Well Receptor Survey for the ConnDOT Site #25*, prepared by HRP Associates, Inc.
- January 2007 – *Task 220 Exploratory Site Investigation*, prepared by Diversified Technology Consultants



The contents of these reports are described in further detail in *Section 2.3* and important information from these reports can be found throughout this report. Pertinent portions of these reports are provided in *Appendix C*.

In addition, the DEEP Hazardous Waste Manifests Database, which summarizes manifests submitted from 1984 through 2008 and 2012 through 2014, was reviewed. A Generator Summary of hazardous waste manifests is provided in *Appendix E*. Wastes generated at the Site include liquid and solid hazardous waste.

4.3 Wastewater and Leachate Discharge Sources

The Connecticut Leachate and Wastewater Discharge Sources Map (CTDEP, 1997) was reviewed to determine if any historical discharges to the ground in the area of the Site have been reported. The following historical discharges were identified:

Facility-Discharge	Distance/ Direction from Site
ConnDOT – Inactive former waste disposal site	Onsite
Town of Haddam – Active covered sand and uncovered salt storage on asphalt	Onsite
JC Products, Inc. – Inactive trichloroethylene (TCE) leak to groundwater	0.1 mi/N
Active well contaminated with dry cleaning solvent	0.15 mi/E
Active well contaminated with dry cleaning solvent	0.25 mi/SE
Higginum Manufacturing Co. – Inactive former TCE discharge to ground since 1954	0.3 mi/NE
Frismar, Inc. – Active spent coating chemicals to ground for over 50 years	0.3 mi/E
Illustrated Printing – Active photo chemicals discharge to septic system since 1977	0.3 mi/NW
Active well contaminated with TCE and tetrachloroethylene (PCE) from dry cleaning	0.5 mi/NW

Potential concerns associated with these discharges are provided below:

- Information pertaining to past uncovered salt storage at the Site is summarized on *Table 1*.
- TCE/PCE discharge north and northwest of the Site could potentially impact groundwater quality at the Site as previously discussed.

4.4 Local File Review

The Town Clerk's office provided a record of ownership of the Site, as summarized below. Note that this review does not constitute a full title search.



Date(s)	Owner
3/21/1937 - Present	State of Connecticut DOT Highway Department
5/12/1937 – 3/21/1941	Sarah Garrity Higganum Ice Company
5/29/1931 – 5/12/1937	Sarah Garrity
~1880 – 5/29/1931	D. & H. Scovil Hoe Company
Prior to ~1880	Unknown

Files and personnel at the Town of Haddam offices of the Town Clerk, Tax Assessor, Building Department, Planning and Zoning Department, Fire Marshal, and of the Connecticut River Area Health Department were queried regarding environmental concerns at the Site and surrounding sites. The information below was identified. Copies of pertinent files are included in *Appendix B*.

- Property maps dated 1941 and 1966
- Underground Storage Facility Notification forms, UST testing results, UST installation notifications and reports
- MSDS sheets for petroleum products stored and used onsite and Hazardous Chemical Inventory forms associated with petroleum products stored and used onsite
- Building material assessment
- Documentation of salt shed demolition
- Water testing letters and results addressed to the owners of nearby properties whose wells were impacted.
- Correspondence and testing results regarding the presence of fecal coliform in the onsite water supply (issue eventually rectified)
- 1984 Memo with the subject "Status of D.O.T. Investigations and Remedial Actions at Maintenance Facilities, Airports, and hazardous Waste Disposal Sites"

As part of this assessment, Ms. Brianna Church of Fuss & O'Neill interviewed Liz Glidden, Town Planner on November 9, 2017. Information pertinent to environmental conditions at the Site is provided below:

- Ms. Glidden, the Town Planner with the Town of Haddam, stated that outside of the findings from previous environmental investigations, she has no additional knowledge of releases or threatened releases of hazardous substances at the Site.

5 User-Provided Information

ASTM Practice 1527-13 describes certain tasks to be performed by the user of this assessment that will help to identify RECs at the parcel if they exist. ASTM Practice 1527-13 defines the user as “the party seeking to use Practice E 1527 to complete an environmental site assessment of the property.” Users can include a potential purchaser or tenant of the property, a lender, a property manager, or a property owner.

As part of our agreement to conduct this work, we provided Ms. Liz Glidden, Town Planner for the Town of Haddam, with a User Questionnaire. A copy of the completed questionnaire is provided in *Appendix F*.

5.1 Record of Environmental Liens or Activity and Use Limitations

Chain of title and title restriction records filed under Federal, tribal, State or local law often contain records of environmental liens or activity and use limitations (AULs), such as environmental land use restrictions in the State of Connecticut.

Ms. Glidden was unaware of a chain of title and title restrictions records review having been performed for the Site. In addition, Ms. Glidden reported that they have no actual knowledge of an environmental lien or AULs recorded against the property.

Fuss & O'Neill reviewed the Connecticut database of recorded environmental land use restrictions on file at the DEEP. No environmental land use restrictions were identified for the Site.

5.2 Specialized Knowledge or Experience of the User

Ms. Liz Glidden reported that they have no specialized knowledge with respect to the Site or activities conducted at the Site.

5.3 Commonly Known or Reasonably Ascertainable Knowledge

Mr. Glidden reported that they are aware of the following commonly known or reasonably ascertainable information about the property:

- The past use of the property was for a CT DOT maintenance facility and garage

5.4 Property Valuation, Reduction for Environmental Issues

Ms. Glidden did not provide information pertaining to the valuation of the Site.

6 Site Reconnaissance and Interviews

6.1 Interviews

Owner/Key Site Manager

This assessment included an interview with Ms. Christie LaBella, Property Agent CT Department of Transportation, who met Fuss & O'Neill staff in the field on November 9, 2018 to provide access to the Site.

Additionally, Fuss & O'Neill forwarded a Phase I ESA Questionnaire to the DOT which was completed by Mr. Adam G. Fox, Transportation Principal Engineer. Information provided by Ms. LaBella and Mr. Fox is presented below and has been incorporated into pertinent sections of this report. The completed questionnaire is included in *Appendix F*

- Ms. LaBella provided the UST removal reports prepared by TRC in 2015 & 2016, as previously referenced.
- Mr. Fox answered yes to the following questions:
 1. *Is or has the property been used industrially?*
 2. *Is or has the property been used as a vehicle body repair facility, furniture stripping facility, dry cleaning facility, gasoline station, motor repair facility, commercial printing facility, photo developing laboratory, junkyard or landfill or as a waste treatment, storage, disposal, processing or recycling facility?*
 4. *Are there currently or have their previously been any damaged or discarded automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of greater than 5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the property or at the facility?*
 5. *Are there currently or previously has there been any industrial drums (typically 55 gal (208L)) or sacks of chemicals located on the property or at the facility?*
 7. *Are there currently or has there previously been any floor drains, septic systems, dry wells, pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal?*
 8. *Are there currently or has there previously been any registered or unregistered storage tanks (above or underground) located on the property?*

9. Is there currently or has there previously been any evidence of leaks, spills or staining by substances other than water or foul odors, associated with any flooring, drains, walls, ceilings or exposed grounds on the property?

12. Does the owner or occupant of the property have any knowledge of any environmental site assessment of the property or facility that indicated the presence of hazardous substances or petroleum products on, or contamination of, the property or recommended further assessment of the property?

6.2 Site Reconnaissance

The site reconnaissance was conducted on November 9, 2017 by Ms. Brianna Church and Mr. Dan Jahne of Fuss & O'Neill. The site reconnaissance included a site inspection. The inspection included the physical observation of building interiors and the Site grounds. Photographs taken during the site inspection are presented in *Appendix G*.

Site Description

The Site consists of a 4-acre, irregularly-shaped parcel improved with two 2-story brick buildings (Buildings 81-106 and 81-115) and associated asphalt driveway and parking areas. Building 81-106 is located on the southern portion of the Site, adjacent to Candlewood Brook and Building 81-115 on the northern portion of the Site, adjacent to Candlewood Hill Road. The remaining portions of the Site consist of gravel and overgrown grassy areas. Access to the Site is via Candlewood Hill Road, which runs parallel to the northern Site boundary. The paved parking area is located east of Building 81-115, the asphalt driveway runs approximately through the center of the Site, and the gravel areas are located east of Building 81-106 and to the west of the Site buildings. Refer to *Figure 2* for a site plan.

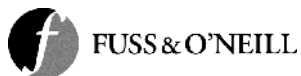
There were no limitations associated with Site access during the site reconnaissance.

Building 81-115

Building 81-115 is an approximately 10,400-square foot building located on the northern portion of the Site. Reportedly built around 1905 to house the forge shop for the Scovil Hoe Mill, Building 81-115 was most recently used by the CT DOT as a maintenance and repair facility. During the time that the DOT occupied the Site, the easternmost portion of the building was occupied by offices. The central and western portions of the building were occupied by maintenance, repair, and vehicle storage bays. The second floor was primarily used for storage. The water pressure tank for the supply well located on the western edge of the property is located in the southwestern corner of Building 81-115. Overhead cranes are located throughout the repair bay areas in the building.

- **Hazardous Wastes/Materials** – Petroleum products, salt, and pesticides were reportedly stored on Site over the course of DOT's occupancy. Three hazardous waste manifests were found associated with the Site for solid and liquid hazardous waste. MSDS sheets for the petroleum products used and stored on Site were found in the Town files (*Appendix B*). At the time of the site visit, there was no waste or material storage observed in the building other than a 5 gallon bucket of ZEP cleaner in the western garage bay. The floor around the container was observed to be in good condition with no staining evident.

- Housekeeping Observations – Minor petroleum staining, a thin layer of dirt and dust, and some standing puddles cover the floors in the repair bays. Minor oil staining was observed on the concrete floor in the central portion of the building in the vicinity of an above ground diesel fuel tank used to supply the emergency generator located in the shed on the north side of the building. The diesel fuel tank, which is located within a secondary containment structure, was in good condition. Minor staining is apparent on the walls where equipment was formerly located. A thin layer of dirt and dust covers the floors of the office spaces and the second floor.
- Drums – Orange ring markings on the concrete floor indicative of former drum storage area were observed throughout the building. The concrete floor in the vicinity of the markings appeared to be in general good condition with no cracks or staining evident. The concrete floor in the western garage bay appeared slightly pitted, which perhaps is a sign of wear associated with past vehicle maintenance activities.
- Floor Drains, Sumps – Several circular concrete patches approximately 6 to 8 inches in diameter are located throughout the building. The configuration of the patches are generally linear and may indicate a former sub-slab floor drain network. Previous reports suggest that capped floor drains have historically been found in the building. Reportedly these former floor drains discharged to a catch basin north of the northeast corner of Building 81-106 and then to Candlewood Brook.
- Tunnel/Utility Trench – On the south wall in the central portion of the building is an approximate four feet rectangular opening in the concrete floor covered by 6-inch wide wooden boards. During the site visit two of the boards were removed to reveal an approximate four feet deep rectangular vault with concrete and stone sidewalls. Hardpacked dirt and small concrete and stone fragments were present at the bottom. There was no odor or staining observed in the material at the bottom. Approximately 1-inch diameter metal water pipe and 1/2-inch metal compressor piping were observed in the trench vertically extending out of the vault up the side of the wall of the building. At the bottom of the vault an approximate 6-inch diameter open pipe appeared to extend to the east parallel to the wall of the building. What appeared to be 1-inch diameter water pipe also extended in both directions parallel to the wall of the building. The concrete and stone comprising the southern wall of the vault appeared to be constructed after the original structure was built and appeared to be “blocking” additional access beyond what could be observed. Reportedly, a tunnel or trench extended between the two buildings. There currently is no evidence of a tunnel between the two buildings because of the blocked access to the south wall, however, it appears that the water lines may extend south beyond the wall to Building 81-106.
- Patched Flooring – Small squares of concrete patches are evident in one garage bay, although they appear to be too small to be indicative of a former lift.
- Pits, Dry Wells – A manhole cover is located underneath the stairs on the eastern side of the building. It appears as though the manhole provides access to an approximate 16-inch stormwater pipe connecting an exterior catch basin at the toe of the slope at Candlewood Hill Road on the north side of the building. A patched opening located on the eastern wall of the



structure suggests that there may formerly have been a pipe extending in an easterly direction as well. The stormwater pipe extends below Building 81-115 southeast to a catch basin located north of the northeast corner of Building 81-106. A stormwater discharge pipe to Candlewood Hill Brook was observed in the bank east of the southeast corner of Building 81-106 (*Figure 2*).

- Generators/Fire Pumps/Compressors – A diesel generator is found in the northwest corner of one of the central garage bays. Minor staining around the generator is evident. Evidence of a former compressor is found in the same garage bay, just west of the supposed utility trench.
- Furnace – The furnace is located in eastern portion of the building adjacent to the former heating oil tank (REC-13). Peeling paint from the walls and ceiling was observed on the concrete floor. The furnace appeared to be in generally good condition with no cracks or oil staining evident on the floor.

Building 81-106

Building 81-106 is an approximately 8,135-square foot building located on the southern portion of the Site. Reportedly built around 1887 to expand the Scovil Hoe Mill, Building 81-106 was most recently used by the CT DOT as a maintenance and repair facility. During the time that the DOT occupied the Site, the easternmost portion of the building was occupied by storage space. The central portion of the building was divided into the employee break area on the easternmost side and the maintenance, repair, and vehicle storage bays in the center and eastern sides. The western portion of the building was also occupied by maintenance, repair, and vehicle storage bays. The second floor was primarily used for storage. A small brick structure off the southern portion of the building houses the boiler room and appears to be relatively clean and in good condition.

- Hazardous Wastes/Materials – Petroleum products, salt, and pesticides were reportedly stored on Site over the course of DOT's occupancy. Three hazardous waste manifests were found associated with the Site for solid and liquid hazardous waste. No other information was provided in the hazardous waste records. MSDS sheets for the petroleum products used and stored on Site were found in the Town files (*Appendix B*).
- Housekeeping Observations – Minor petroleum staining and a thin layer of dirt and dust cover the floors in the repair bays. More severe petroleum staining was observed on the floor and wall at a waste oil fill pipe for the former waste oil UST (REC-14). Minor staining is apparent on the walls where equipment was formerly located. A thin layer of dirt and dust covers the floors of the storage spaces and the second floor.
- Drums – Orange ring markings on the concrete floor indicative of former drum storage area were observed throughout the building. The concrete floor in the vicinity of the markings appeared to be in general good condition with no cracks or staining evident.
- Floor Drains, Sumps, Trenches – Several square concrete patches and linear patches representing former subgrade drainage trenches are located most prominently in the western portion of the building. Previous reports suggest that capped and uncapped floor drains have historically been present in the building during operations by CT DOT. The former trenches



appear to extend parallel to the walls of the building in an east to west direction. However, in the central portion of the building the trenches turn 90 degrees to the south toward the south wall of the building and Candlewood Hill Brook. There was no evidence of a discharge outlook to the brook at this location based on an inspection of the bank. Reportedly the former capped floor drains may discharge to a catch basin north of the northeast corner of Building 81-106 and then to Candlewood Brook as previously described for Building 81-115. .

- Patched Flooring for Former Below Grade Vehicle Lift– An approximate 15 feet wide by 30 feet long poured slab, which is not the originally floor, is located in the central repair bay of Building 81-106. The floor slab contains markings and bolt patterns indicative of a former support for an above ground vehicle lift. The concrete floor appeared to be in good condition with no cracks or oil staining observed. Previous reports indicate that the former above ground vehicle lift is in the same location as a former underground vehicle lift where as described in *Section 4.1* 70 gallons of hydraulic oil had been released.
- Out-of-Use Supply Well – Outside the central garage bay on the north side of the building is a steel manhole cover. The manhole provides access through an approximate 24-inch diameter concrete culvert extending 6 feet below the ground surface. At the bottom of the culvert appears to be a 6-inch drilled water supply well. Well detail information such as depth of well, casing depth, screen depth, and pump depth were not available in the fields reviewed for this report. A 1-inch diameter water line extends from the well sanitary seal to the southwest toward the building. The same 1-inch water line was observed in the building and is further described below.
- Tunnel/Utility Trench – On the north wall in the central portion of the building is an approximate four feet rectangular opening in the concrete floor covered by 6-inch wide wooden boards. During the site visit two of the boards were removed to reveal an approximate four feet deep rectangular vault with concrete and stone sidewalls. Hardpacked dirt and small concrete and stone fragments were present at the bottom. There was no odor or staining observed in the material at the bottom. The 1-inch diameter metal water pipe referenced for the well above was observed to extend up through the floor slab adjacent to this location to a shutoff valve mounted on the building wall. From the shutoff valve the pipe extended down the wall into the vault and at the bottom of the vault the piping turned 90 degrees directly to the north through the wall toward Building 81-115. Similar to the configuration of the vault described for Building 81-115, the northern wall of the vault for Building 81-106 appeared to have been constructed to “block” access to some sort of conduit, tunnel, or pipe discharge between the two buildings. The original use of this conduit between the two buildings may have been for drainage or process water flow, but appears at some point in time to have been converted to serve as a utility conduit for the water pipe from the supply well north of Building 81-106 to serve both buildings.

Grounds

The grounds on the eastern and northern sides of the Site are primarily dominated with gravel or asphalt cover. The grounds on the southern and western sides of the Site are primarily covered in overgrown grass and vegetation. The Candlewood Brook runs through the southern portion of the Site.

- **Septic System** – The Site septic system is located east of Building 81-115 underneath the paved parking area. The parking surface in this area did not exhibit depressions or irregular surface features.
- **Catch Basins** – One catch basin is located north of Building 81-115. A second catch basin, assumed to be connected to the first, is located north of the northeast corner of Building 81-106 as previously described.
- **Monitoring Wells** - Numerous monitoring wells are located onsite as a result of former and ongoing environmental investigations as shown on *Figure 2*.
- **Supply Well** – One 8-inch drilled potable water supply well is located on the westernmost portion of the Site (*Figure 2*). A subgrade approximate 3 feet square vault was observed adjacent to the well. The well water supply line in the vault was observed to extend east across the former Spar Mill Pond area (REC-1) to the southwest corner of Building 81-115. The water line was observed cut and capped extending up through the floor slab of the building at the pressure tank.
- **USTs/ASTs** – Several USTs were historically located on the Site, although none were observed during the Site reconnaissance (see Table 1)
- **Transformers** – No transformers were observed on the Site.
- **Fill** – Based on historic aerial photos and Site maps, the Saw Mill Pond historically dominated the majority of the eastern portion of the Site. The pond no longer exists and in its place is terraced fill material. Furthermore, previous reports suggest that filling activities associated with the DOT's operations took place on the western portion of the Site.
- **Former Mill Building/Flume & Penstock** – The 1941 acquisition sketch provided in *Section 3* depicts a former mill building east of Building 81-106. . The former building has since been demolished and is presently fenced in with a chain link fence for reported storage activities by DOT including solvent storage (REC-5). There are no remnants of the former mill building other than a retaining wall along the bank. Based on the orientation of the building from the 1941 plan, the retaining wall at the brook may also have served as the foundation for the south side of the building and foundation for the former penstock. The subsurface in this area contains fill based on review of boring logs from previous investigations and may also contain below grade chambers or drainage systems associated with the former hydropower system. The former penstock crossed over the brook to the south side to the flume which was located in a terrace along the hillside approximately 25 feet higher than the stream bottom. The stone remnants of the flume inlet and outlet sections were visible on the hillside. The terraced portion of a vegetated swale of the former flume on the south side of Candlewood Hill Brook was observed with no evidence of staining or stressed vegetation.



- Outfalls – The outfall from the stormwater line below Building 81-115 I is located southeast of Building 81-106, discharging to Candlewood Hill Brook. During the Site reconnaissance, the outfall was dry with trace leaves and dirt debris at the point of discharge to the brook.
- Stone Foundations and Retaining Walls – Several stone walls and foundations were observed in the western portion of the Site west of Building 81-106. A former shed foundation was observed in this area. The purpose of the shed is unknown, although one of the maps prepared by DTC during their 2007 investigation indicated a drum storage area adjacent to the foundation (REC-3). Two retaining walls are located on the western portion of the Site, at least one of which may have been part of a larger spillway dam for the former Spar Mill Pond. As described above, the dam historically diverted water from Candlewood Hill Brook through a flume that extended along the southern bank, through a steel penstock that crossed the brook just south of the former wooden mill building, and to a turbine and tail race for energy production during the time that the mill occupied the Site. Remnants of the flagstone dam on the southeastern portion of the Site, of the retaining walls on the northern bank of the brook, and of the tail race on the southeastern portion of the Site still remain.

7 Connecticut Transfer Law Status

The State of Connecticut Property Transfer Law, described in Sections 22a-134a through 22a-134e of the Connecticut General Statutes, requires the disclosure of environmental conditions when certain real properties and/or businesses are transferred. The law applies only to those properties that are deemed to be "establishments" as defined under the law. As defined by the Transfer Act (Sections 22a-134a et seq. of the Connecticut General Statutes, as amended), an establishment is:

... any real property at which or any business operation from which (A) on or after November 19, 1980, there was generated, except as the result of (i) remediation of polluted soil, groundwater or sediment, or (ii) the removal or abatement of building materials, more than one hundred kilograms of hazardous waste in any one month, (B) hazardous waste generated at a different location was recycled, reclaimed, reused, stored, handled, treated, transported or disposed of, (C) the process of dry cleaning was conducted on or after May 1, 1967, (D) furniture stripping was conducted on or after May 1, 1967, or (E) a vehicle body repair facility was located on or after May 1, 1967.

If the Site is determined to be an establishment, DEEP reporting and involvement may be required in order to transfer the property, and DEEP will require identification, delineation, and remediation of all environmental concerns in accordance with Connecticut's Remediation Standard Regulations.

Activities that would qualify the facility as an "establishment" have been identified based on the existence of hazardous waste manifests demonstrating generation of more than one hundred kilograms in any one month. However, should a determination as to the regulatory status of the Site with regard to the Connecticut Transfer Law be desired, legal counsel should be consulted.

8 Data Gaps, Findings and Conclusions

8.1 Data Gaps

Standard Practice 1527-13 requires the identification and evaluation of data gaps or data failures, which are defined as a lack of or inability to obtain information required by the practice despite good faith efforts by the environmental professional to gather such information. The following data gaps were identified during this investigation:

- It was not possible to identify past uses of the Site back to its first known development. Past uses were identified back to approximately 1880, when the D. & H. Scovil Hoe Company purchased the property to expand their hoe mill operations. Prior to that time, the Site was reportedly occupied by a saw mill and later a feldspar mill. The potential for the presence of RECs resulting from activities conducted prior to 1880 is mitigated by the less common use of hazardous substances or petroleum products in the United States prior to the mid-1800s.

8.2 Findings and Conclusions

Fuss & O'Neill, Inc. prepared this Phase I ESA report in general conformance with the scope and limitations of ASTM Practice E 1527-13. Any exceptions to, or deletions from, this practice are described in *Appendix A* of this report.

8.2.1 Identified RECs

This assessment has revealed the following nineteen (19) RECs in connection with the Site. These RECs consist of areas associated with the past operation of the Site by the CT DOT Maintenance and Repair Facility and by the former Scovil Hoe Company. Each of these RECs are described in detail in *Table 1*.

- REC-1: Historic fill/dump area
- REC-2: Buried drums of joint sealer
- REC-3: Drum storage shed
- REC-4: Solvent steam cleaning area
- REC-5: Historic solvent storage area
- REC-6: Repair bays and pump island
- REC-7: Septic tank and leach field
- REC-8: Diesel fuel UST off the northeast corner of Building 81-106
- REC-9: Heating oil and gasoline USTs east of Building 81-106
- REC-10: Former heating oil and diesel USTs west of Building 81-115
- REC-11: Four former USTs between the two Site buildings
- REC-12: Former heating oil UST south of Building 81-106



- REC-13: Heating oil UST off northeast corner of Building 81-115
- REC-14: Waste oil UST north of Building 81-106
- REC-15: Interior trenches
- REC-16: Former hydraulic lift area
- REC-17: Interior floors
- REC-18: Potential Solvent Release Area Northeast of Building 81-106
- REC-19: Former Salt Storage Activities

Historical RECs

ASTM 1527-13 defines historical RECs (HRECs) as a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted residential use criteria established by a regulatory authority, without subjecting the property to any required controls (e.g., property use restrictions, AULs, institutional controls, or engineering controls). No HRECs associated with the Site were identified.

Controlled RECs

ASTM 1527-13 defines controlled CRECs (CRECs) as an REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (e.g., as evidenced by the issuance of a "No Further Action" letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (e.g., property use restrictions, AULs, institutional controls, or engineering controls). No CRECs associated with the Site were identified.

Other Considerations

Although not identified as an REC, the following should be considered when evaluating the Site:

- One potable water supply well is located on the northwest portion of the Site and supplied the Site buildings with water. A grab-sample collected from an interior tap by DTC revealed low level concentrations of sodium, chloride, and barium below the applicable criteria. What is presumed to be a second, out-of-use, potable water supply well is located north of Building 81-106. Although not considered to be RECs, these wells may serve as receptors and possible preferential contaminant migration pathways for impacted groundwater associated with off-site releases previously described in *Section 2.3*
- Although not identified as an REC, as with any site where former structures have been razed and with multiple generations of development, the potential for the presence of urban fill containing ash, coal and asphalt fragments exists. In addition, it is possible that storage tanks that had been used to heat former structures could have been abandoned at the Site and could remain in the ground.



- As with any building constructed prior to 1978, there is some potential that hazardous building materials may have been introduced to the soil around the building foundation. We have not specifically identified this as an REC, but the potential for impacted soil should be considered if substantial building renovation or site work is planned.

8.2.2 Potential Off-Site Concerns

The following potential off-site concerns were identified:

- Evidence of historical agricultural and industrial activities on nearby properties have affected groundwater quality in the Village. This includes chlorinated solvents, the pesticide dieldrin, and chromium. Releases of one or more of these constituents from upgradient properties could adversely affect groundwater quality at the Site. .

8.2.3 Appropriateness of Investigations

Fuss & O'Neill has followed the guidelines described in ASTM E1527-13 to identify the RECs at this Site in a manner consistent with standard practice in the industry; however, as indicated in the ASTM standard, "No environmental site assessment can wholly eliminate uncertainty regarding the potential for RECs in connection with a property. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for RECs in connection with a property, and the practice recognizes reasonable limits of time and cost."

In accordance with Section 12.6.1 of ASTM Standard Practice E 1527-13, the appropriateness of additional investigations necessary to determine the presence or absence of identified RECs was evaluated. Based on the opinion of the Environmental Professional, no additional investigations would be necessary to confirm that the conditions specified in *Section 8.2* are RECs in accordance with ASTM standards.

9 References

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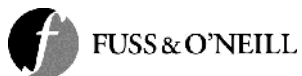
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10 Limitations of Work Product

This document was prepared for the sole use of the Town of Haddam, the only intended beneficiary of our work. Those who may use or rely upon the report and the services (hereafter "work product") performed by Fuss & O'Neill, Inc. and/or its subsidiaries or independent professional associates, subconsultants and subcontractors (collectively the "Consultant") expressly accept the work product upon the following specific conditions.

1. Consultant represents that it prepared the work product in accordance with the professional and industry standards prevailing at the time such services were rendered.
2. The work product may contain information that is time sensitive. The work product was prepared by Consultant subject to the particular scope limitations, budgetary and time constraints and business objectives of the Client which are detailed therein or in the contract between Consultant and Client. Changes in use, tenants, work practices, storage, Federal, state or local laws, rules or regulations may affect the work product.
3. The observations described and upon which the work product was based were made under the conditions stated therein. Any conclusions presented in the work product were based solely upon the services described therein, and not on scientific or engineering tasks or procedures beyond the scope of described services.
4. In preparing its work product, Consultant may have relied on certain information provided by state and local officials and information and representations made by other parties referenced therein, and on information contained in the files of state and/or local agencies made available at the time of the project. To the extent that such files which may affect the conclusions of the work product are missing, incomplete, inaccurate or not provided, Consultant is not responsible. Although there may have been some degree of overlap in the information provided by these various sources, Consultant did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this project. Consultant assumes no responsibility or liability to discover or determine any defects in such information which could result in failure to identify contamination or other defect in, at or near the site. Unless specifically stated in the work product, Consultant assumes no responsibility or liability for the accuracy of drawings and reports obtained, received or reviewed.
5. If the purpose of this project was to assess the physical characteristics of the Site with respect to the presence in the environment of hazardous substances, waste or petroleum and chemical products and wastes as defined in the work product, unless otherwise noted, no specific attempt was made to check the compliance of present or past owners or operators of the Site with Federal, state, or local laws and regulations, environmental or otherwise.
6. If water level readings have been made, these observations were made at the times and under the conditions stated in the report. However, it must be noted that fluctuations in water levels may occur due to variations in rainfall, passage of time and other factors and such fluctuations may affect the conclusions and recommendations presented herein.



7. Except as noted in the work product, no quantitative laboratory testing was performed as part of the project. Where such analyses have been conducted by an outside laboratory, Consultant has relied upon the data provided, and unless otherwise described in the work product has not conducted an independent evaluation of the reliability of these tests.
8. If the conclusions and recommendations contained in the work product are based, in part, upon various types of chemical data, then the conclusions and recommendations are contingent upon the validity of such data. These data (if obtained) have been reviewed and interpretations made by Consultant. If indicated in the work product, some of these data may be preliminary or screening-level data and should be confirmed with quantitative analyses if more specific information is necessary. Moreover, it should be noted that variations in the types and concentrations of contaminants and variations in their flow paths may occur due to seasonal water table fluctuations, past disposal practices, the passage of time and other factors.
9. Chemical analyses may have been performed for specific parameters during the course of this project, as described in the work product. However, it should be noted that additional chemical constituents not included in the analyses conducted for the project may be present in soil, groundwater, surface water, sediments or building materials at the Site.
10. Ownership and property interests of all documents, including reports, electronic media, drawings and specifications, prepared or furnished by Consultant pursuant to this project are subject to the terms and conditions specified in the contract between the Consultant and Client, whether or not the project is completed.
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12. In the event that any questions arise with respect to the scope or meaning of Consultant's work product, immediately contact Consultant for clarification, explanation or to update the work product. In addition, Consultant has the right to verify, at the party's expense, the accuracy of the information contained in the work product, as deemed necessary by Consultant, based upon the passage of time or other material change in conditions since conducting the work.
13. Any use of or reliance on the work product shall constitute acceptance of the terms hereof.

Table 1
Summary of Recognized Environmental Conditions
CT DOT Maintenance Facility / Historical Scovil Hoe Mill
11 Candlewood Hill Road
Higganum, Connecticut

Phase I Background Investigation			Phase II/III Conclusions & RSR Evaluation				
Recognized Environmental Condition (REC)	Historic Release Area ID	Description / Conceptual Site Model	Phase II/III Investigations	Release Determination	Release Constituents & RSR Exceedances		
					Soil ■ Exceedance	Res DEC I/C DEC GA PMC	GW Detects & Exceedances
<u>REC-1</u> Historical Fill/ Dump Area (Western Portion of Site)	<i>DTC-RA-1 HRP Release Area 1</i>	<p>The filled area, located along the western portion of the Site was formerly a portion of Spar Mill Pond, and was reportedly used as a dumpsite from 1941 to 1975.</p> <p>Historical Site investigations identified metal, asphalt and construction debris including a degraded drum containing herbicides.</p> <p><u>COCs</u> VOCs ETPH PAHs Pesticides Herbicides</p>	<p><u>Soil borings (DTC 2006):</u> SB-1 through SB-6</p> <p><u>Sediment Samples (DTC 2006):</u> SS-4 & SS-5 (from Candlewood Hill Brook)</p> <p><u>Historical monitoring wells:</u> W-25-1S, W-25-1D and W-25-4</p> <p><u>DTC Monitoring wells (2006):</u> MW-10S and MW-10D</p> <p><u>Soil borings (F&O 2017):</u> FOSB-02</p>	<p>Soil between 0-14 fbg impacted with ETPH, PAHs, & VOCs (specifically 1,2,4-Trimethylbenzene at MW-10D, 14 fbg).</p> <p>Petroleum impacts in excess of RSR criteria were identified at depths ranging from shallow (0-2 feet below grade) to 10-14 fbg (in MW-10D), likely related to historical fill materials.</p> <p>Trace concentrations of the VOC constituent naphthalene and low level chlorinated pesticides (44DDD and 44DDT) were also reported in soil samples at concentrations below RSR criteria.</p>	124TMB PAHs ETPH Pesticides	<div> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> </div> <div> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> </div> <div> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> </div> <div> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> </div>	<p>ETPH & pesticides were not detected in GW.</p> <p>A trace concentration of naphthalene (a VOC) was detected in MW-10D.</p>
<u>REC-2</u> Buried Drums of Joint Sealer (Southwestern portion of Site)	<i>DTC-RA-2 HRP Release Area 2</i>	<p>Historically, several containers of an experimental joint sealer were reportedly buried in the southwestern portion of the Site (southeast of the two buildings along Candlewood Hill Brook).</p> <p><u>COCs</u> VOCs ETPH PAHs</p>	<p><u>Soil borings (DTC 2006):</u> SB-7 & SB-8</p> <p><u>Sediment Samples (DTC 2006):</u> SS-3</p> <p><u>Historical monitoring wells:</u> W-25-2, W-25-3, MW-9, D-17 & D-18</p> <p><u>Soil borings (F&O 2017):</u> FOSB-01</p>	<p>Soil between 0-8 fbg is impacted with ETPH & PAHs exceeding RSR criteria at SB-7 and SB-8.</p> <p>Low levels of pesticides (44DDT) and the VOC constituent naphthalene were also reported in soil, below RSR criteria.</p> <p>Soil impacts are likely related to historical petroleum-impacted fill materials.</p>	PAHs ETPH Pesticides	<div> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> </div> <div> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> </div> <div> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> </div>	<p>Concentrations of Arsenic historically exceeded the SWPC.</p> <p>Elevated concentrations of sodium and trace PAHs were reported in GW (below RSRs) in 2017.</p>

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Recognized Environmental Condition (REC)	Historic Release Area ID	Description / Conceptual Site Model	Phase II/III Investigations	Release Determination	Release Constituents & RSR Exceedances		
					Soil ■ Exceedance	Res DEC I/C DEC GA PMC	GW Detects & Exceedances
<u>REC-3</u> Drum Storage Shed	<i>DTC-RA-3</i> <i>HRP PRA- 3</i>	A storage shed, located southwest of Building 81-106, and the area immediately north of the storage shed were reportedly used for various drum storage. The contents and amount of materials stored within the drums was not reported. <u>COCs</u> VOCs ETPH PAHs Metals	<u>Soil borings (DTC 2006):</u> SB-13 <u>Historical monitoring wells:</u> D-1 & D-19 <u>Soil borings (F&O 2017):</u> FOSB-04	Shallow soil (0-2 fbg) is impacted with ETPH and PAHs exceeding applicable RSR criteria at SB-13 and FOSB-04. The source of the PAHs and ETPH is likely related to surficial releases of petroleum from the historical drum storage area. Low levels of chlorinated pesticides (44DDT) were also detected in soil at concentrations below RSR criteria.	PAHs ETPH Pesticides	■ ■ ■ ■ □ ■ □ □ □	N/A
<u>REC-4</u> Solvent Steam Cleaning Area	<i>DTC-RA-4</i> <i>HRP PRA- 5</i>	An area located south of the repair bays of the western portion of Building 81-106 was identified as a former steam cleaning area with the potential use of solvent-based cleaners. <u>COCs</u> VOCs	<u>Soil borings (DTC 2006):</u> SB-14 & SB-16 <u>DTC Monitoring wells (2006):</u> MW-7	Shallow soil (0-3 fbg) is impacted with ETPH and PAHs exceeding applicable RSR criteria, likely related to the presence of asphalt-containing fill material. It is noted that shallow refusal was encountered between 2.5-3 feet below grade.	PAHs ETPH	■ ■ □ ■ □ ■	No COCs detected above laboratory reporting limits in GW.
<u>REC-5</u> Historic Solvent Storage Area	<i>DTC-RA-5</i> <i>HRP PRA- 6</i>	A large, fenced impoundment area on the southeastern portion of the Site previously used for general storage and historically used for solvent storage. Historic investigations identified VOCs, lead and petroleum hydrocarbons in soil and groundwater exceeding RSR criteria at D-3. <u>COCs</u> VOCs ETPH PAHs	<u>Historic Soil Boring/grab GW:</u> D-3 <u>Soil borings (DTC 2006):</u> SB-33 & SB-34 <u>Sediment Samples (DTC 2006):</u> SS-1 <u>DTC Monitoring wells (2006):</u> MW-2 <u>Soil borings (F&O 2017):</u> FOSB-08	VOCs were not detected in soil or groundwater investigated between 2006 and 2017. While shallow soil (0-2 fbg) is impacted with ETPH, PAHs and SPLP Lead exceeding applicable RSR criteria, the source is likely related to impacted fill material.	PAHs ETPH SPLP Lead	■ ■ □ ■ □ ■ □ □ ■	Trace concentration (below RSRs) of naphthalene reported in 2006 gw sample from MW-2.

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Phase I Background Investigation			Phase II/III Conclusions & RSR Evaluation				
Recognized Environmental Condition (REC)	Historic Release Area ID	Description / Conceptual Site Model	Phase II/III Investigations	Release Determination	Release Constituents & RSR Exceedances		
					Soil ■ Exceedance	Res DEC I/C DEC GA PMC	GW Detects & Exceedances
<u>REC-6</u> Repair Bays & Pump Island	<i>DTC-RA-6 HRP PRA- 7</i>	<p>This area encompasses the repair bays in the western portion of Building 81-106, the majority of Building 81-115, and the gasoline pump island between the two buildings.</p> <p>The pump island was removed in November 2014 and a petroleum hydrocarbons release was identified below the dispenser piping lines. In December 2015 petroleum impacted soil was removed from the former pump island piping trench along a 40 feet long corridor to a depth of approximately two feet below the ground surface</p> <p><u>COCs</u></p> <p>VOCs ETPH PAHs</p>	<p><u>Soil borings (DTC 2006):</u> SB-12, SB-19, SB-31 & SB-32</p> <p><u>DTC Monitoring wells (2006):</u> MW-4 & MW-5</p> <p><u>Soil borings (F&O 2017):</u> FOSB-05</p> <p><u>Monitoring wells (F&O 2017):</u> FOMW-01 & FOMW-02</p>	<p>Shallow soil (0-2 fbg) in SB-12, SB-19 & SB-32 is impacted with PAHs exceeding RSR criteria, and soil from 0-5 fbg in MW-4 is impacted with PAHs and ETPH exceeding RSR criteria.</p> <p>A soil sample from FOMW-02 (6-7.5') also had concentrations of metals and select PAHs detected at concentrations below applicable RSR criteria.</p> <p>The source may be related to surficial releases of petroleum from the eastern repair bays of the 1866 building and the western bay of the 1877 building.</p> <p>Impacts could also be attributed to impacted fill material.</p>	PAHs ETPH	<div> <div>■</div> <div>■</div> <div>□</div> <div>■</div> <div>□</div> <div>■</div> </div>	<p>Historically, concentrations of lead & arsenic exceeded the GWPC & SWPC in downgradient well MW-4 (potentially due to suspended solids).</p> <p>PAHs, pesticides and/or select metals were detected in 2017 groundwater samples collected from FOMW-01 and FOMW-02 at concentrations that exceeded the GWPC and/or SWPC.</p>
<u>REC-7</u> Septic Tank & Leachfield (East of Building 81-115)	<i>DTC-RA-7 HRP PRA- 8</i>	<p>The floor drains in Building 81-115 reportedly discharged directly to the septic tank. Therefore, the soil and groundwater in the area of the septic tank and leachfield could have been impacted by interior releases to the floor drains and from sinks within the Site buildings.</p> <p><u>COCs</u></p> <p>VOCs ETPH PAHs Metals</p>	<p><u>Soil borings (DTC 2006):</u> SB-24 & SB-25</p> <p><u>DTC Monitoring wells (2006):</u> MW-1</p> <p><u>Soil borings (F&O 2017):</u> FOSB-07</p>	<p>Soil from 0-3 fb in this area is impacted with PAHs exceeding RSR criteria.</p> <p>Low levels of ETPH and the VOC constituent naphthalene were also detected within the shallow soil.</p> <p>These petroleum impacts likely related to historical petroleum-impacted fill materials or fill containing asphalt fragments.</p>	VOCs PAHs ETPH	<div> <div>□</div> <div>□</div> <div>□</div> <div>■</div> <div>■</div> <div>□</div> <div>□</div> <div>□</div> <div>□</div> </div>	<p>No COCs detected above laboratory reporting limits in GW, with the exception of a trace concentration of chrysene in the 2017 sample collected from MW-1.</p>

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Phase I Background Investigation			Phase II/III Conclusions & RSR Evaluation					
Recognized Environmental Condition (REC)	Historic Release Area ID	Description / Conceptual Site Model	Phase II/III Investigations	Release Determination	Release Constituents & RSR Exceedances			
					Soil ■ Exceedance	Res DEC I/C DEC GA PMC	GW Detects & Exceedances	
<u>REC-8</u> Diesel Fuel UST	<i>DTC-RA-8</i> <i>HRP PRA- 9C</i>	<p>A 4,000-gallon diesel fuel UST, 2,000-gallon heating fuel UST and 2,000 gallon gasoline UST were formerly located in one tank grave off the east side of Building 81-106.</p> <p>The diesel and gasoline USTs were used for fueling DOT vehicles, while the heating oil UST was used to for the facility's heating systems.</p> <p>The USTs were removed in November 2014 because they reached the end of their recommended lifespans. During the removal of the diesel UST, the tank broke and approximately 50 gallons of water and residual product released into the tank grave (Spill Case No. 2014-05891).</p>	<p><u>Soil borings (DTC 2006):</u> SB-21, SB-22 & SB-23</p> <p><u>Sediment Samples (DTC 2006):</u> SS-2</p> <p><u>DTC Monitoring wells (2006):</u> MW-3</p>	<p>Soil from 0-8 fbg is impacted with ETPH, PAHs, total arsenic and/or SPLP lead at concentrations exceeding RSR criteria, likely associated with petroleum releases due to spills, UST overfills, and/or a leaking UST or related piping.</p> <p>Low levels of chlorinated pesticides (44DDT) were also detected in soil at concentrations below RSR criteria.</p> <p>Additionally, the VOC 124TMB, a gasoline constituent, was detected below RSR criteria in one sample from 6-8 fbg (MW-3).</p>	124TMB PAHs ETPH Arsenic SPLP Lead Pesticides	<div><div><input type="checkbox"/></div><div>■</div><div><input type="checkbox"/></div></div> <div><div><input type="checkbox"/></div><div>■</div><div><input type="checkbox"/></div></div> <div><div><input type="checkbox"/></div><div>■</div><div><input type="checkbox"/></div></div>	<p>GW from nearby monitoring wells (MW-3 & MW-4) did not have COCs reported associated with diesel, heating oil or gasoline.</p> <p>Total arsenic exceeding the SWPC was detected in MW-3 (potentially due to suspended solids).</p>	
<u>REC-9</u> Heating Oil & Gasoline USTs	<i>DTC-RA-9</i> <i>HRP PRA-9D</i>	<p>TRC collected 8 confirmatory sidewall samples and one grab groundwater sample from the excavation following tank removal activities.</p> <p><u>COCs</u></p> <p>VOCs ETPH PAHs Metals</p>	<p><u>TRC Confirmatory Samples (2014):</u> HIG-D-N, HIG-D-E, HIG-D-W, HIG-G-E, HIG-G-W, HIG-FO2-E, HIG-FO2-W, HIG-FO2-S</p> <p><u>TRC Monitoring Well (2015):</u> HMF-MW-1 & HMF-MW-2</p> <p><u>Soil borings (F&O 2017):</u> FOSB-09</p>	<p>Constituents of concern were not reported above RSR criteria in any of the confirmatory soil samples collected during tank removal activities.</p>		<div><div><input type="checkbox"/></div><div>■</div><div><input type="checkbox"/></div></div> <div><div><input type="checkbox"/></div><div>■</div><div><input type="checkbox"/></div></div> <div><div><input type="checkbox"/></div><div>■</div><div><input type="checkbox"/></div></div>	<p>The grab gw sample (HIG-GDF-GW) collected during tank removal activities had concentrations of PAHs and Pb > the GWPC.</p>	
<u>REC-10</u> Former Heating Oil & Diesel USTs	<i>DTC-RA-10</i> <i>HRP PRA- 10A</i>	<p>A heating oil and diesel UST were formerly located in a paved area located immediately west of Building 81-115, outside the garage.</p> <p>No documentation of the removal of these USTs has been identified, however a ground penetrating radar survey conducted in 2017 did not identify anomalies that would be indicative of USTs in place at this location.</p> <p><u>COCs</u></p> <p>VOCs ETPH PAHs Metals</p>	<p><u>Soil borings (DTC 2006):</u> SB-9, SB-10 & SB-11</p> <p><u>Soil borings (F&O 2017):</u> FOSB-03, FOSB-16</p>	<p>Soil from 0-4 fbg in historical borings north and south of the former USTs is impacted with ETPH and PAHs exceeding RSR criteria, potentially associated with surficial petroleum releases from UST filling activities, piping, and/or other incidental releases.</p> <p>One deep sample (6-8') was collected from FOSB-03 in 2017. COCs were not detected in this sample at concentrations that would be indicative of a release from the former UST.</p>	PAHs ETPH	<div><div>■</div><div>■</div><div><input type="checkbox"/></div></div> <div><div>■</div><div><input type="checkbox"/></div><div>■</div></div> <div><div>■</div><div><input type="checkbox"/></div><div>■</div></div>	<p>GW from nearby historical monitoring well MW-8 did not contain COCs associated with heating or diesel fuel.</p>	

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Phase I Background Investigation			Phase II/III Conclusions & RSR Evaluation				
Recognized Environmental Condition (REC)	Historic Release Area ID	Description / Conceptual Site Model	Phase II/III Investigations	Release Determination	Release Constituents & RSR Exceedances		
					Soil ■ Exceedance	Res DEC I/C DEC GA PMC	GW Detects & Exceedances
<u>REC-11</u> 4 Former USTs	<i>DTC-RA-11</i> <i>HRP PRA- 10B</i>	Four former USTs, including 2 gasoline and 2 waste oil USTs, were historically located in an area between the two Site buildings. No documentation of the removal of these USTs has been identified, however a ground penetrating radar survey conducted in 2017 did not identify anomalies that would be indicative of USTs in place at this location. <u>COCs</u> VOCs ETPH PAHs Metals	<u>Soil borings (DTC 2006):</u> SB-26, SB-27, SB-28, SB-29 & SB-30 <u>DTC Monitoring wells (2006):</u> MW-5 (downgradient) <u>Monitoring wells (F&O 2017):</u> FOMW-01 (upgradient)	Soil from 0-3 fbg in this area is impacted with PAHs exceeding RSR criteria. Low levels of ETPH, Metals and pesticides were identified at concentrations below RSR criteria.	PAHs ETPH Pesticides	■ ■ □ □ □ □ □ □ □	GW from downgradient monitoring well MW-5 did not contain COCs associated with gasoline or waste oil. PAHs, pesticides and chromium and lead were detected in a 2017 groundwater sample collected from FOMW-01 at concentrations that exceeded the GWPC and/or SWPC.
<u>REC-12</u> Former Heating Oil UST	DTC-RA-12 HRP PRA- 10C	A former heating oil UST was located south of the office of Building 81-106. <u>COCs</u> VOCs ETPH PAHs Metals	<u>Soil borings (DTC 2006):</u> SB-17 & SB-18 <u>DTC Monitoring wells (2006):</u> MW-6 (bedrock)	Shallow refusal encountered between 2-3 fbg. Soil from 0-3 fbg in this area is impacted with PAHs exceeding RSR criteria likely related to asphalt containing fill materials. Low levels of ETPH, Metals and naphthalene were identified at concentrations below RSR criteria.	PAHs	■ ■ □	No COCs detected above laboratory reporting limits in GW.

Table 1
Summary of Recognized Environmental Conditions
CT DOT Maintenance Facility / Historical Scovil Hoe Mill
11 Candlewood Hill Road
Higganum, Connecticut

Phase I Background Investigation			Phase II/III Conclusions & RSR Evaluation				
Recognized Environmental Condition (REC)	Historic Release Area ID	Description / Conceptual Site Model	Phase II/III Investigations	Release Determination	Release Constituents & RSR Exceedances		
					Soil ■ Exceedance	Res DEC I/C DEC GA PMC	GW Detects & Exceedances
REC-13 Former Heating Oil UST (Northeast corner of Building 81-115)	HRP-PRA-9A	<p>A 2,000-gallon fuel oil UST was formerly located off the northeast corner of Building 81-115 which was used to fuel the building's heating system.</p> <p>A historical monitoring well is located in the vicinity of this former UST, and DTC advanced one soil boring (SB-20) upgradient of the former UST location, however no downgradient sampling locations were advanced.</p> <p>This UST was removed in November 2014 because it had reached the end of its recommended lifespan. TRC collected 4 confirmatory sidewall samples and one grab groundwater sample from the excavation following tank removal activities.</p> <p><u>COCs</u></p> <p>ETPH PAHs Metals</p>	<p><u>DTC Soil borings (2006):</u> SB-20</p> <p><u>Historical Monitoring well:</u> D-8</p> <p><u>TRC Confirmatory Samples (2014):</u> HIG-FO1-N, HIG-FO1-E, HIG-FO1-S, HIG-FO1-W</p> <p><u>TRC Monitoring Well (2015):</u> HMF-MW-4</p>	COCs were not detected above laboratory reporting limits in the historical soil samples or in any of the UST closure confirmatory soil samples.	None	None	<p>COCs were not detected in groundwater from the historical monitoring well.</p> <p>The VOC constituent ethylbenzene was detected at a concentration below applicable RSR criteria in the grab gw sample from the tank grave.</p> <p>PAHs and ETPH were reported at concentrations above the GWPC in the grab gw sample.</p>

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Phase I Background Investigation			Phase II/III Conclusions & RSR Evaluation				
Recognized Environmental Condition (REC)	Historic Release Area ID	Description / Conceptual Site Model	Phase II/III Investigations	Release Determination	Release Constituents & RSR Exceedances		
					Soil ■ Exceedance	Res DEC I/C DEC GA PMC	GW Detects & Exceedances
REC-14 Waste Oil UST	HRP-PRA-9B	<p>A former 550-gallon waste oil UST was located north of the offices and repair bays of Building 81-106.</p> <p>This UST was removed in November 2014 because it had reached the end of its recommended lifespan. TRC collected 4 confirmatory sidewall samples and one grab groundwater sample from the excavation following tank removal activities.</p> <p>Following concentrations of PAHs and arsenic reported in confirmatory sidewall samples at concentrations greater than RSR criteria, impacted soil was removed from the tank grave in January 2015.</p> <p><u>COCs</u> ETPH PAHs Metals PCBs</p>	<p><u>DTC Monitoring wells (2006):</u> MW-5</p> <p><u>TRC Confirmatory Samples (2014):</u> HIG-WO-N, HIG-WO-E, HIG-WO-W, HIG-WO-S, HIG-WO-GW</p> <p><u>TRC Confirmatory Samples (2015):</u> HIG-WO-E2, HIG-WO-W2, HIG-WO-S2</p> <p><u>TRC Monitoring Well (2015):</u> HMF-MW-3</p> <p><u>Soil borings (F&O 2017):</u> FOSB-06</p>	<p>Low levels of several RCRA 8 metals were identified in historical soil samples from 6-8 fbg at concentrations consistent with naturally occurring background concentrations.</p> <p>VOCs, ETPH, PAHs and PCBs were not detected in historical soil samples.</p> <p>PAHs and arsenic were either not detected or were detected at concentrations below RSR criteria in the 2015 confirmatory sidewall samples following impacted soil removal.</p>	RCRA 8 Metals	<div> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> </div>	<p>COCs were not detected in historical groundwater samples from MW-5.</p> <p>PAHs were reported in the groundwater sample from HMG-MW-3 at concentrations below RSR criteria.</p> <p>It is noted that DEEP's Alternative Criteria for phenanthrene was approved for use at this Site.</p>
REC-15 Interior Trenches	AOC 2 (Marin)	<p>Evidence of underground trenches running from east to west in the western portion of Building 81-106 was observed.</p> <p>Several floor drains were also mentioned in Marin's 2001 Phase I ESA, which were capped prior to the completion of the report.</p> <p>Three soil borings were completed in 2017 in the vicinity of the trenches.</p> <p><u>COCs</u> PAHs ETPH VOCs Metals PCBs</p>	<p><u>Soil borings (F&O 2017):</u> FOSB-11, FOSB-12, FOSB-13</p>	<p>Varying concentrations of metals were reported in shallow soil (0-2 fbg).</p> <p>Concentrations of arsenic exceeded the Res DEC in a sample from FOSB-13, while PAHs were reported detected below RSR criteria.</p>	As PAHs	<div> <div> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> </div> <div> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> </div> </div>	N/A

Table 1
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CT DOT Maintenance Facility / Historical Scovil Hoe Mill
11 Candlewood Hill Road
Higganum, Connecticut

Phase I Background Investigation			Phase II/III Conclusions & RSR Evaluation				
Recognized Environmental Condition (REC)	Historic Release Area ID	Description / Conceptual Site Model	Phase II/III Investigations	Release Determination	Release Constituents & RSR Exceedances		
					Soil ■ Exceedance	Res DEC I/C DEC GA PMC	GW Detects & Exceedances
REC-16 Former Hydraulic Lift Area	AOC 3 (HRP)	Above- and below-ground hydraulic lifts were formerly located in the repair bay located in the center of Building 81-106. A DEEP Spill report dated 8/14/1998 describes a release of 70 gallons of hydraulic fluid from the lifts and a former Site manager stated that contaminated soil was removed from the area when the underground lift were replaced with the above-ground lift. <u>COCs</u> PAHs ETPH VOCs Metals PCBs	<u>Soil borings (F&O 2017):</u> FOSB-10, FOSB-17, FOSB-19	Visible evidence of a release was observed in soil at FOSB-10. Soil at 5-7 fbg was impacted with concentrations of ETPH greater than the RSRs. Concentrations of total lead also exceeded the Res DEC at FOSB-10.	ETPH Lead	■ ■ ■ ■ □ □	N/A
REC-17 Interior Floors	N/A	Evidence of petroleum staining, concrete deterioration from salt and chemicals, and rings from drum storage is visible on interior floors throughout the Site buildings. Several interior concrete chip samples were collected to characterize the extent of impact, if any, on the floors. <u>COCs</u> PCBs	<u>Concrete chip samples (F&O 2017):</u> FOSB-10, FOSB-11, FOSB-14, and FOSB-15	Four concrete chip samples were analyzed for PCBs. PCBs were not detected above laboratory reporting limits in any of the samples.	-	-	N/A
REC-18 Potential Solvent Release Area	HRP-PRA-4	The April 2002 ECAF identified a potential solvent release area located outside the repair bays of the eastern half of Building 81-106. <u>COCs</u> VOCs	<u>DTC Monitoring wells (2006):</u> MW-8	Low levels of naphthalene were identified in soil from 0-2 and 4-6 fbg. The source of trace VOCs could be related to surficial releases of petroleum and/or asphalt-containing fill material.	Naph	□ □ □	VOCs were not detected above laboratory reporting limits in MW-8.

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Recognized Environmental Condition (REC)	Historic Release Area ID	Description / Conceptual Site Model	Phase II/III Investigations	Release Determination	Release Constituents & RSR Exceedances		
					Soil ■ Exceedance	Res DEC I/C DEC GA PMC	GW Detects & Exceedances
REC-19 Former Salt Storage Activities	N/A	<p>The Site historically was used as a salt storage facility from 1941 through 1973; however the exact location of the salt storage area is unknown. Historical data obtained from Metcalf & Eddy in 1986 indicated the presence of elevated sodium and chloride concentration in certain on-site monitoring wells.</p> <p><u>COCs</u></p> <p>Sodium Chloride</p>	<u>DTC Investigation (2006):</u> 18 Groundwater samples	N/A	N/A	N/A	Varying concentrations of sodium and chloride were detected in each of the 18 groundwater samples. The highest concentrations were observed within MW-8 (located immediately west of the southern maintenance building) with chloride slightly exceeding the DPH MCL.
Other Considerations							
<u>On-Site Supply Well</u>	N/A	<p>A water supply well, located near the northwest corner of the Site, currently provides the Site with potable water. As part of the 2006 investigation, DTC collected a sample from an interior sink located in the northern repair garage and F&O collected a grab sample during the 2017 investigation.</p> <p>A second supply well was identified just north of the southern building. Due to inaccessibility, no sample could be collected from this well.</p> <p><u>COCs</u></p> <p>VOCs PAHs ETPH PCBs Metals Pesticides Herbicides</p>	<p><u>DTC Investigation (2006):</u> One Potable Water sample</p> <p><u>F&O Investigation (2017):</u> One potable water sample</p>	N/A	N/A	N/A	Low level concentrations of sodium, chloride and barium were detected below applicable criteria.

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					Soil ■ Exceedance	Res DEC I/C DEC GA PMC	GW Detects & Exceedances
<i>Sediment Samples</i>	N/A	Various surface soil samples were collected from the outfall that exists beneath southeast corner of building 81-106, the suspected outfall from the drainage ditch beneath center of Building 81-106, and from the southern bank of Candlewood Brook. The purpose of these samples was to evaluate potential impacts from the Site to the brook sediment. COCs Metals ETPH PAHs	Surface samples (F&O 2017): FOSS-01 through FOSS-05	N/A	N/A	N/A	N/A

Notes:

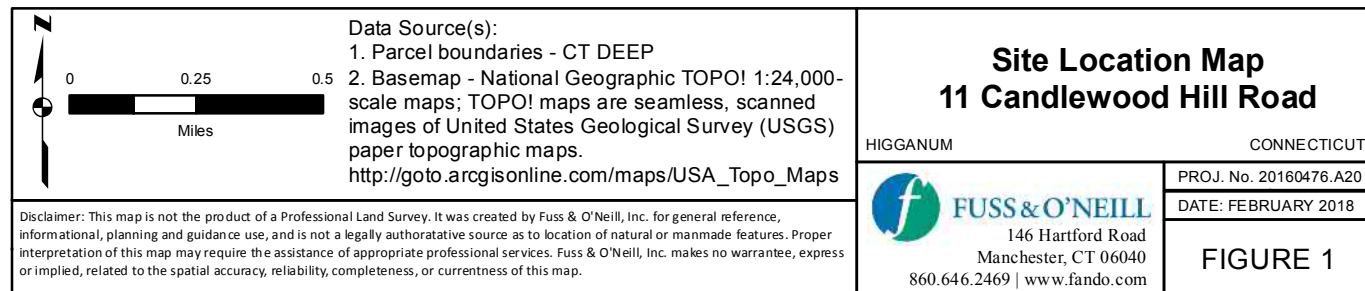
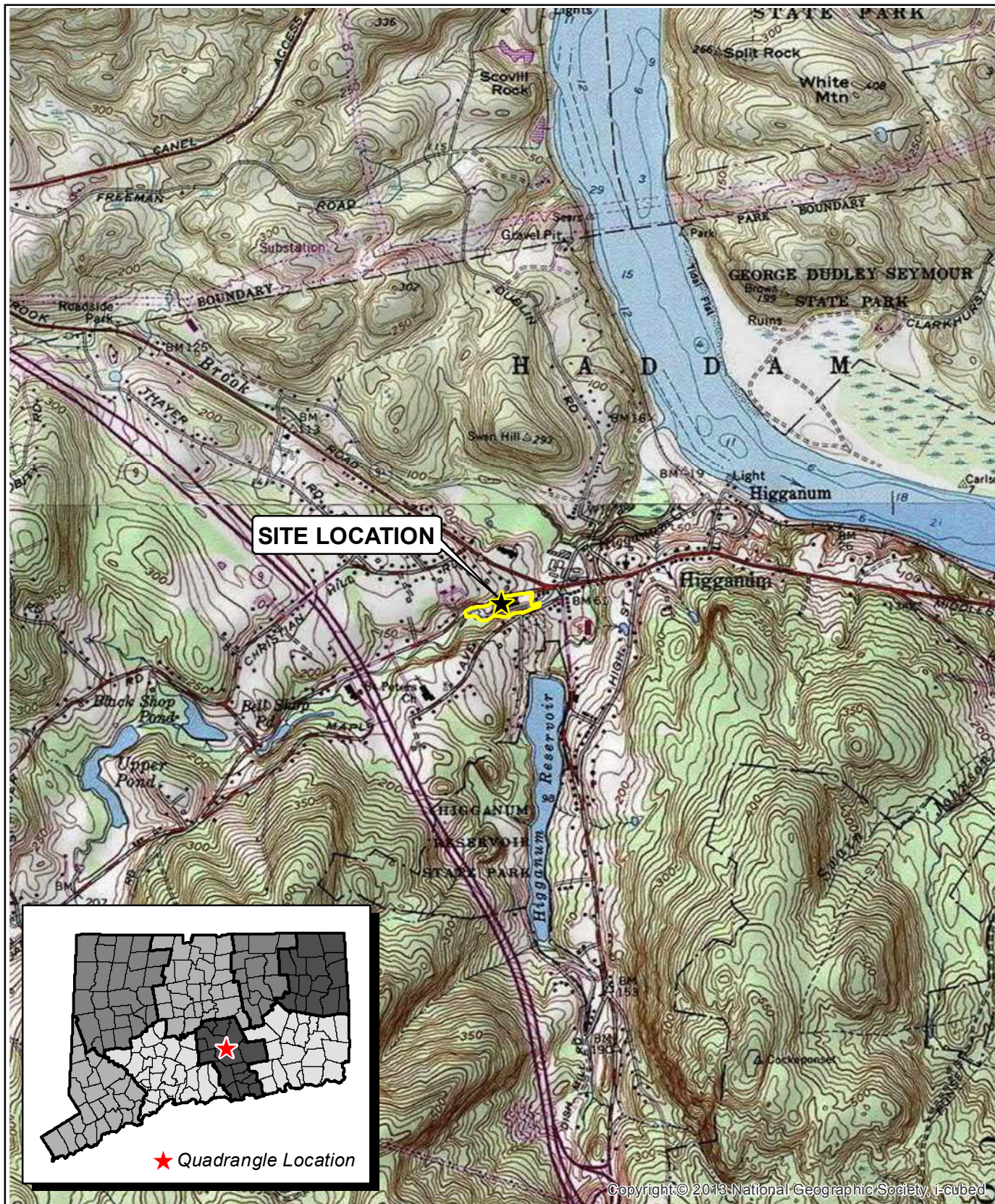
RA = Release Area
PRA = Potential Release Area
UST = Underground Storage Tank
DEC = Direct Exposure Criteria
PMC = Pollutant Mobility Criteria
DPH = Department of Public Health
MCL = Maximum Contaminant Level

Constituents of Concern

VOCs = volatile organic compounds
ETPH = extractable total petroleum hydrocarbons
PAHs = polycyclic aromatic hydrocarbons
PCBs = polychlorinated biphenyls
RCRA 8 Metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver)

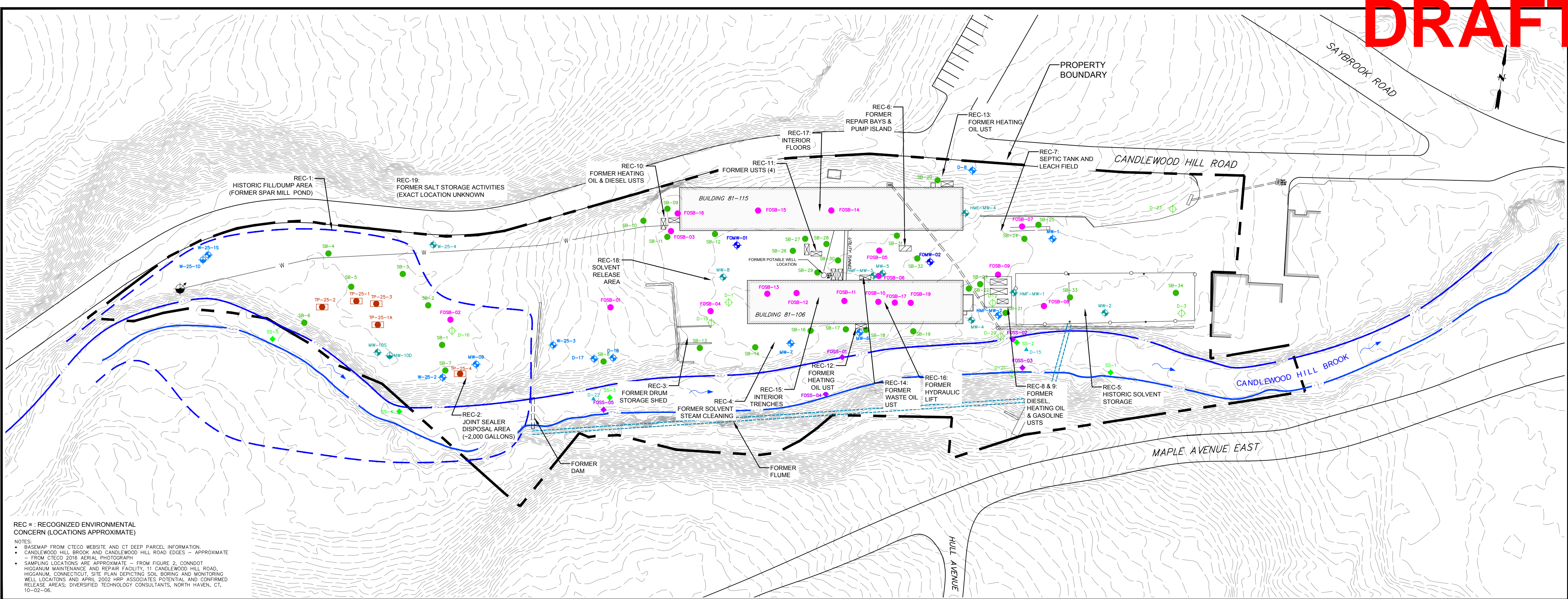
Figures

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File Path: J:\DWG\20160476A20\EnvironmentalPlan\20160476A20_SAM01.dwg Layout: LAYOUT1 Plotted: Sun, February 11, 2018 - 3:04 PM User: stochelt
LAYER STATE: PLOT INFO




REC = : RECOGNIZED ENVIRONMENTAL CONCERN (LOCATIONS APPROXIMATE)

NOTES:

- BASEMAP FROM CTeco WEBSITE AND CT DEEP PARCEL INFORMATION.
- CANDLEWOOD HILL BROOK AND CANDLEWOOD HILL ROAD EDGES - APPROXIMATE - FROM CTeco 2016 AERIAL PHOTOGRAPH
- SAMPLING LOCATIONS ARE APPROXIMATE - FROM FIGURE 2, CONDOT HIGGANUM MAINTENANCE AND REPAIR FACILITY, 11 CANDLEWOOD HILL ROAD, HIGGANUM, CONNECTICUT, SITE PLAN DEPICTING SOIL BORING AND MONITORING WELL LOCATIONS AND APRIL 2002 HRP ASSOCIATES POTENTIAL AND CONFIRMED RELEASE AREAS; DIVERSIFIED TECHNOLOGY CONSULTANTS, NORTH HAVEN, CT, 10-02-06.

LEGEND:			
	MONITORING WELL LOCATION - INSTALLED 2017		HISTORICAL SOIL BORING (LOCATION APPROXIMATE)
	MONITORING WELL LOCATION - DRILLED 2017		HISTORICAL SOIL BORING AND GROUNDWATER SAMPLE (LOCATION APPROXIMATE)
	SEDIMENT SAMPLE LOCATION - 2017		HISTORICAL SEDIMENT SAMPLE (LOCATION APPROXIMATE)
	HISTORICAL TEST PIT (LOCATION APPROXIMATE)		HISTORICAL MONITORING WELL (LOCATED AND SURVEYED - 2017)
	HISTORICAL MONITORING WELL (LOCATION APPROXIMATE - NOT FOUND IN 2017)		HISTORICAL MONITORING WELL (LOCATION APPROXIMATE - NOT FOUND IN 2017)
	DOT WATER SUPPLY WELL		

SCALE:	
HORZ.: 1" = 60'	
VERT.:	
DATUM:	
HORZ.:	
VERT.:	
0	25
	
GRAPHIC SCALE	

FUSS & O'NEILL

146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

SITE PLAN AND SAMPLING LOCATIONS

11 CANDLEWOOD HILL ROAD

HIGGANUM

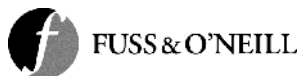
CONNECTICUT

PROJ. No.: 20160476A20
DATE: FEBRUARY 2018

FIGURE 2

Appendix A

Scope of Work and Restrictions



All Appropriate Inquiry Phase I ESA Scope of Work

Fuss & O'Neill uses Standard Practice E 1527-13 as the general standards for conducting Phase I ESAs. For consistency, this scope of work is generally presented based on the outline of our standard Phase I ESA report. The descriptions of the procedures and sources for obtaining the information for each section follow the section headings. As specified by Standard Practice E 1527-13, the scope of work described below allows for use of professional judgment to determine the extent to which specific sources are reviewed.

Unless otherwise specified, the following items are not considered in the course of completing an ASTM E 1527-13 Phase I ESA:

- Y Asbestos, Lead (paint/plumbing), Radon, Mold, Fluorescent Light Ballasts
- Y Wetlands, Ecological Resources, Historical/Cultural Resources
- Y Regulatory and Health & Safety Compliance
- Y Endangered species

These items typically present little environmental risk to the grounds of a site; however, these items may be liabilities during property transfer, regulatory audits, construction, renovation, or demolition projects.

1.0 Introduction

The objective of the ESA and the party that this ESA was conducted for are identified in this section.

2.0 Site Overview

2.1 Site Information

2.1.1 Property Location, Size of Parcel, and Site Plan

Review of USGS topographic maps, local assessor and zoning maps and property description cards, field observations and sketches, and, if available, plans provided by a contact for the Site. A site plan is included that is derived from these sources.

2.1.2 Potable Water Supply and Sewage Disposal

Query the local Department of Public Works, local Engineering Department, appropriate local utilities, and/or other local municipal sources and/or a knowledgeable site contact.

2.1.3 Adjoining Land Use

Site reconnaissance and assessor's mapping.

2.2 Environmental Setting of Site

2.2.1 Physical Setting

Site reconnaissance, USGS topographic maps, available geological maps, and DEEP water quality maps and water quality standards.

2.2.2 Wetlands & Flood Zone Mapping

Query the local Planning and Zoning Department, available on-line databases, and Environmental Data Resources, Inc., an environmental database search service.

2.2.3 Radon

Determine the Site's radon propensity zone (low, medium, or high) based on USEPA Radon Zones (with State Information) map.

2.2.4 Location of Public Water Supply Sources

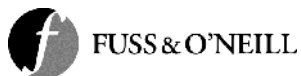
Site reconnaissance, DEEP water supply source mapping, and mapping available in local departments queried as part of the ESA.

2.3 Previous Environmental Investigations

Provided by the appropriate site contact or identified by other means during the course of conducting the ESA.

3.0 Site History

Site reconnaissance, knowledgeable site contacts, aerial photographs available at the State Archives and DEEP, Sanborn fire insurance maps available at the State Library, street directories available at the State Library (note that street directories are reviewed at approximately five-year intervals, but may be reviewed at smaller intervals for multi-tenant properties), and local municipal sources (Tax Assessor, Health Department, Building Department, Engineering Department, Planning and Zoning Department, and Fire Marshal).



4.0 Federal, State, and Local File Review

4.1 Summary of Regulatory Database Information

Regulatory databases specified by Standard Practice E 1527-13 are reviewed using Environmental Data Resources, Inc.

The report provided by Environmental Data Resources, Inc. is reviewed in detail. Sites that are inferred to present a significant risk to adversely impact the Site are identified and explained within the ESA report. However, sites inferred to pose little risk to adversely impact the Site are disclaimed within the attached Environmental Data Resources, Inc. report.

4.2 DEEP File Review

DEEP Orders, Notices of Violation, Connecticut Transfer Act Forms, Reports, and Correspondence files for the Site are requested from the DEEP's Environmental Quality Records File Room. If available, these files are reviewed for pertinent information, which is either copied or noted.

CTDEP Connecticut Leachate and Wastewater Discharge Source maps are reviewed to identify any sites within one-half mile of the Site that may adversely impact the Site.

4.3 Local File Review

Files for the local municipal Tax Assessor, Building Department, Planning and Zoning Department, Health Department, and Fire Marshal are reviewed.

5.0 User Provided Information

Information provided by the user as required by the practice is discussed in this section.

6.0 Site Reconnaissance, Interviews

6.1 Interviews

An attempt needs to be made to interview the owner and/or a key site manager identified by the owner. Note the owner can be the key site manager. Prior to conducting the interview, send the Owner/Key Site Manager Questionnaire. A reasonable attempt needs to be made to interview the owner/key site manager during the site visit.

6.2 Site Reconnaissance

Field observations the results of required interviews are discussed in this section. In addition, surveys conducted to identify non-scope considerations are addressed.

7.0 Connecticut Transfer Law Status

Based on information obtained as part of the ESA, our opinion regarding the site's status with respect to the Connecticut Transfer Act is provided.

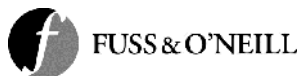
Hazardous waste manifests may be requested from DEEP or appropriate site contact to help resolve questions regarding the quantity of hazardous waste generated at the site.

8.0 Data Gaps, Findings and Conclusions

Data gaps relevant to the identification of recognized environmental conditions are discussed and recognized environmental conditions are summarized in this section. In addition, recommendations for further investigations and surveys conducted to identify non-scope considerations are addressed as well.

9.0 References

References used as part of the ESA are presented here.



Restrictions: Exceptions To or Deletions from The Scope of Work

- A key site manager or occupants familiar with the history of the Site were not available for interview as part of this ESA.

Appendix B

Town File Information

CURRENT ASSESSMENT			
Description	Code	Appraised Value	Assessed Value
EX COM LN	21	128,910	90,240
EX COM BL	22	481,360	336,950
EX CM OTB	25	27,260	19,080
			6061 CT

RECORD OF OWNERSHIP				PREVIOUS ASSESSMENTS (HISTORY)								
CONN STATE OF DOT	BK-VOL/PAGE	SALE DATE q/u w/	SALE PRICE P.C.									
	66/ 295	03/24/1941	U V	29								
					Yr.	Code	Assessed Value	Yr.	Code	Assessed Value		
					2016	21	90,240	2015	21	90,240	90,23	
					2016	22	336,950	2015	22	336,950	336,95	
					2016	25	19,080	2015	25	19,080	19,08	
					Total:		446,270	Total:		446,260		
EXEMPTIONS												

ASSESSING NEIGHBORHOOD			
NBHD/ SUB	NBHD Name	Street Index Name	Tracing
0001/A			
NOTES			
Appraised XF (B) Value (Bldg)			
Appraised OB (L) Value (Bldg)			
Appraised Land Value (Bldg)			
Special Land Value			

BUILDING PERMIT RECORD	
PROPERTY ADDRESS	PERMIT NUMBER
STATE GARAGE 7-OHD;2012 REMVD SHDI CO ISSD 3/2/12;	
Total Appraised Parcel Value	637,530
Valuation Method:	0
Adjustment:	0
Net Total Appraised Parcel Value	637,530

[illegible]

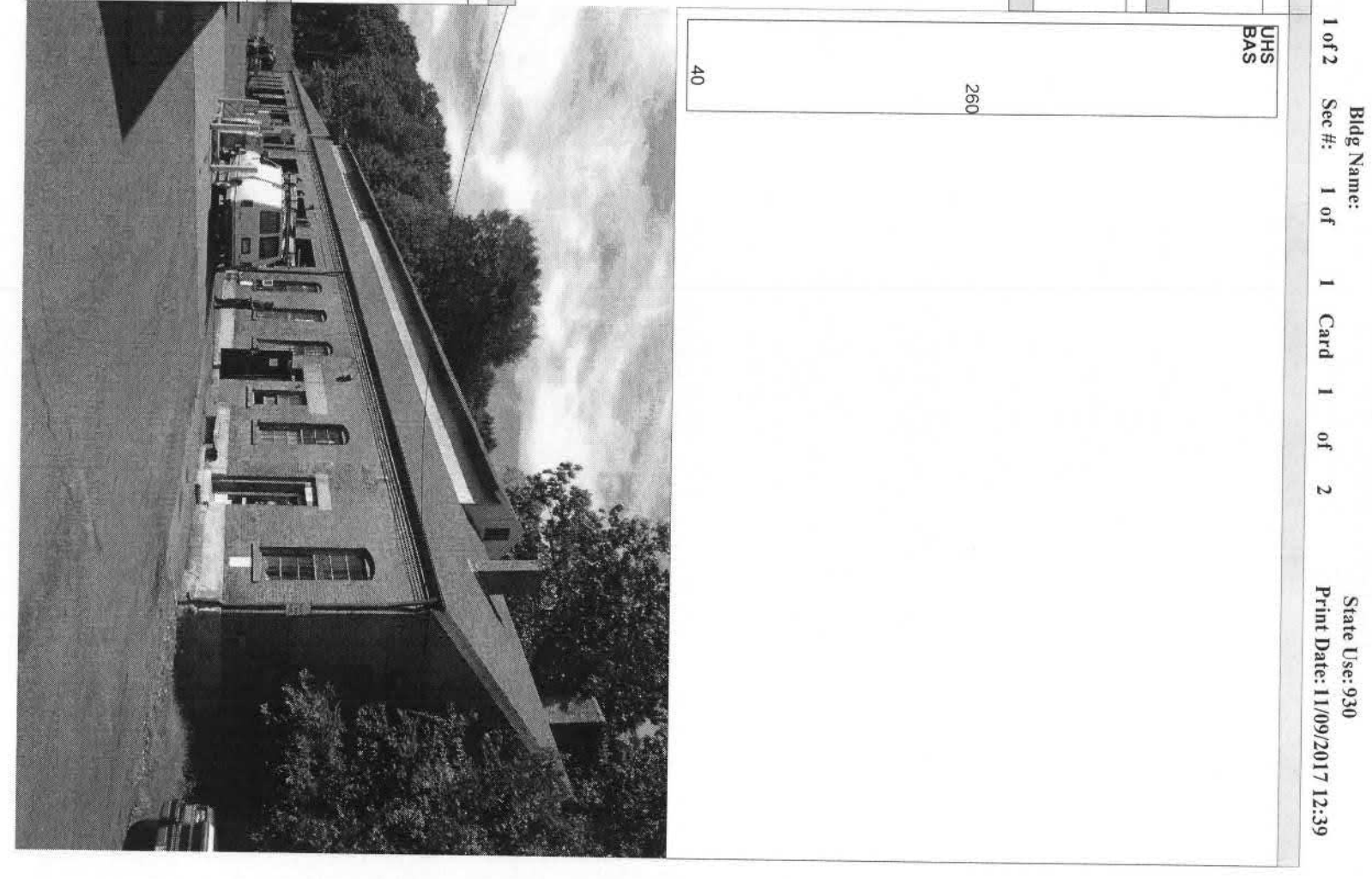
LAND LINE VALUATION SECTION																				
B #	Use Code	Use Description	Zone	D	Front	Depth	Units	Unit Price	I. Factor	S.A. C	C. Factor	ST. ltx	Adj.	Notes- Adj	Special Pricing	S Adj Fact	Adj. Unit Price	Land Value		
1	930	Exempt Ind	R-1				2.00 AC	113,750.00	0.5385	C	1.00	OMN	1.00			1.00		122,510		
	930	Exempt Ind					2.00 AC	3,200.00	1.0000	0	1.00		0.00			1.00		6,400		
Total Card Land Units:							4.00	AC Parcel Total Land Area:		4 AC									Total Land Value:	128,910

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CONSTRUCTION DETAIL				CONSTRUCTION DETAIL (CONTINUED)			
Element	Cd	Ch	Description	Element	Cd	Ch	Description
Model	95		Bar				
Grade	94		Comm/Ind				
Stories	02		Below Average				
Occupancy	1.5						
Exterior Wall 1	20		Brick				
Exterior Wall 2							
Roof Structure	03		Gable				
Roof Cover	03		Asph/F Gls/Cmp				
Interior Wall 1	05		Drywall/Sheet				
Interior Wall 2							
Interior Floor 1	03		Concr-Finished				
Interior Floor 2							
Heating Fuel	02		Oil				
Heating Type	05		Hot Water				
AC Type	01		None				
Bldg Use	930		Exempt Ind				
Total Rooms	0						
Total Bedrooms	00						
Total Baths	1						
Heat/AC	00		NONE				
Frame Type	03		MASONRY				
Baths/Plumbing	02		AVERAGE				
Ceiling/Wall	06		CEIL & WALLS				
Rooms/Ptns	02		AVERAGE				
Wall Height	16						
% Conn Wall							

OB-OUTBUILDING & YARD ITEM(S) / XF-BUILDING EXTRA FEATURES(B)									
Code	Description	Sub	Sub Description	L/B Units	Unit Price	Yr	Gde	Dp Rt	Cnd %Cnd
FGRI	Garage	FR	Frame	476	25.00	1960	0		60
PAVI	Paving	AS	Asphalt	12,002	0.00	1960	0		60
TNKI	TANK-UNDER			2,000	1.10	2010	0		60
TNKI	TANK-UNDER			2,000	1.10	2010	0		60
PMP4	DOUBLE HOS			2	2,200.00	2010	0		60

BUILDING SUB-AREA SUMMARY SECTION					
Code	Description	Living Area	Gross Area	Eff. Area	Unit Cost
BAS	First Floor	10,400	10,400		34.14
UHS	Unfinished Half Story	0	10,400		8.53
Tot. Gross Liv/Lease Area:		10,400	20,800		443,781



CURRENT OWNER
CONN STATE OF DOT
HIGHWAY DEPT
100 WASHINGTON ST
HARTFORD, CT 06106
Additional Owners:

TOPO. 6
UTILITIES 1
STRT./ROAD 1
LOCATION 1 Urban

SUPPLEMENTAL DATA
Other ID:
Dev Lot 5901
Census Tract 490
Penalty 1
Section 1
Town Line? R-1
Callback Ltr

RECORD OF OWNERSHIP
BK-VOL/PAGE 66/ 295
SALE DATE 03/24/1941 U V
SALE PRICE 29
W.C.

PREVIOUS ASSESSMENTS (HISTORY)
Yr. Code Assessed Value Yr. Code Assessed Value Yr. Code Assessed Value
2016 21 90,240 2015 21 90,240 2014 21 90,230
2016 22 336,950 2015 22 336,950 2014 22 336,950
2016 25 19,080 2015 25 19,080 2014 25 19,080

VISION

CURRENT ASSESSMENT		CURRENT ASSESSMENT		CURRENT ASSESSMENT	
Description	Code	Appraised Value	Assessed Value	Assessed Value	6061, CT
EX COM LN	21	128,910	90,240		
EX COM BL	22	481,360	336,950		
EX CMOTB	25	27,260	19,080		
Total		637,530	446,270		

CONN STATE OF DOT		66 295	03/24/1941	U	V	29	PREVIOUS ASSESSMENTS (HISTORY)					
Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Total:			
2016	21	90,240	2015	21	90,240	2014	21	90,230				
2016	22	336,950	2015	22	336,950	2014	22	336,950				
2016	25	19,080	2015	25	19,080	2014	25	19,080				
Total:		446,270	Total:		446,270	Total:		446,260				

EXEMPTIONS				OTHER ASSESSMENTS				This signature acknowledges a visit by a Data Collector or Assessor	
Year	Type	Description	Amount	Code	Description	Number	Amount	Comm. Int.	
Total:									
ASSESSING NEIGHBORHOOD									
APPRAISED VALUE SUMMARY									
Appraised Bldg. Value (Card)								192,900	
Appraised XF (B) Value (Bldg)								0	
TOTALS									
TOTALS									

LAND LINE VALUATION SECTION	
B Use	Use
# Code	Description
2	930 Exempt Ind
Total Card Land Units:	
0.00 AC	
Parcel Total Land Area: 4 AC	

LAND LINE VALUATION SECTION	
Zone	D Front Depth
0.00 AC	0.00
Total Card Land Units:	
0.00 AC	
Parcel Total Land Area: 4 AC	

LAND LINE VALUATION SECTION	
Unit Price	1. Factor S.A.
0.00	1.0000 0
Total Card Land Units:	
0.00 AC	
Parcel Total Land Area: 4 AC	

LAND LINE VALUATION SECTION	
ST. Adj.	Notes-Adj
0.00	
Total Card Land Units:	
0.00 AC	
Parcel Total Land Area: 4 AC	

LAND LINE VALUATION SECTION	
S Adj	Adj. Unit Price
0.00	
Total Card Land Units:	
0.00 AC	
Parcel Total Land Area: 4 AC	

CONSTRUCTION DETAIL				CONSTRUCTION DETAIL (CONTINUED)			
Element	Cd.	Ch.	Description	Element	Cd.	Ch.	Description
Style	48		Warehouse				
Model	94		Comm/Ind				
Grade	03		Average				
Stories							
Occupancy							
Exterior Wall 1	20		Brick				
Exterior Wall 2							
Roof Structure	03		Gable				
Roof Cover	03		Asph/F Gls/Cmp				
Interior Wall 1	01		Minim/Masonry				
Interior Wall 2							
Interior Floor 1	03		Concr-Finished				
Interior Floor 2							
Heating Fuel	02		Oil				
Heating Type	05		Hot Water				
AC Type	01		None				
Bldg Use	301		Industrial				
Total Rooms	00						
Total Bedrms	00						
Total Baths	0						
Heat/AC	00		NONE				
Frame Type	03		MASONRY				
Baths/Plumbing	02		AVERAGE				
Ceiling/Wall	06		CEIL & WALLS				
Rooms/Ptrns	02		AVERAGE				
Wall Height	12						
% Conn Wall							

OB-OUTBUILDING & YARD ITEMS(L) / XF-BUILDING EXTRA FEATURES(B)												
Code	Description	Sub	Sub Descript	L/B	Units	Unit Price	Yr	Gde	Dp Rr	Cnd	%Cnd	Apr Value
ENI	FENCE-4' CH.			L	440	10.00	0	0			10	440
BUILDING SUB-AREA SUMMARY SECTION												
Code	Description	Living Area	Gross Area	Eff. Area	Unit Cost	Undeprc. Value						
BAS	First Floor	8,135	8,135		36.48	296,765						
Tot. Gross Liv/Lease Area:					8,135	8,135						296,765

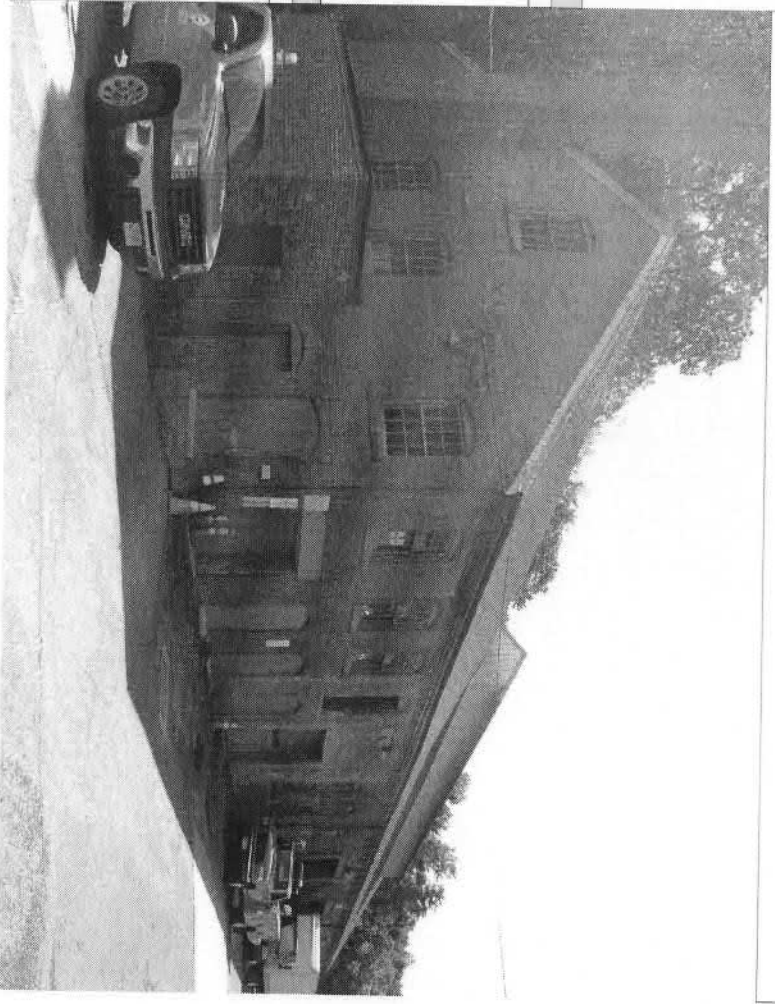
BAS

200

BAS

40

95



DRAFT

FOUNDATION				CEILING				TILING				BUILDING COMPUTATION			
CONCRETE WALLS				LATH & PLASTER				BATH RM. FL. & WAINS.				S. F.			
EXTERIOR BRICK WALLS				COMPO. BOARD				TOILET RM. FL. & WAINS.				S. F.			
BRICK WALLS				ACCOUSTICAL				BATH ROOM FLR				S. F.			
PIERCE WALLS				INTERIOR FINISH				TOILET ROOM FLR.				S. F.			
BASEMENT AREA				LATH & PLASTER				MISCELLANEOUS				S. F.			
EXTERIOR WALLS				WALLBOARD				FIREPROOF CONSTR.				S. F.			
SOLID COM. BRICK				UNFIN. INT.				MILL CONSTRUCTION				S. F.			
COM. BR. ON C. B.				PARTITIONS				FIRE RESISTING				S. F.			
FACE BR. ON COM. BR.				LATH AND PLASTER				STEEL BEAMS & COLS.				S. F.			
FACE BR. ON C. B.				DRYWALL				TIMBER BEAMS & COLS.				S. F.			
CEMENT OR CINDER BLK				BRICK				STEEL TRUSSES				S. F.			
REIN. CONCRETE				C. BLK.				SPRINKLER SYST.				S. F.			
CUT STONE FACING				HEATING				PASSENGER ELEV.				S. F.			
STONE OR T. C. TRIM				STEAM				FREIGHT ELEV.				S. F.			
STUCCO ON				HOT WATER				INCINERATOR				S. F.			
SIDING OR SHINGLES				HOT AIR				FIREPLACES				S. F.			
PARTY WALLS				HOT AIR				CHIMNEYS				S. F.			
PLATE GLASS FRONT				GAS				STEEL FRAME SASH				S. F.			
ROOFING				OIL BURNER				WOOD FRAME SASH				S. F.			
COMPOSITION OR T. & G				SOLAR				RENTAL CAPITALIZATION				S. F.			
METAL				NO HEATING				LAND				S. F.			
WOOD DECK				AIR COND. - REFRIG				VACANCY				S. F.			
METAL DECK				AIR COND. - WATER				HEATING				S. F.			
FLOORS				WIRING				WATER				S. F.			
CONCRETE				FLEXUME OR EQUAL				ELECTRICITY				S. F.			
EARTH				PIPE CONDUIT				JANITOR				S. F.			
PINE				BATH ROOMS				MANAGEMENT				S. F.			
HARDWOOD				TOILET ROOMS				TOTAL FLAT EXPENSES				S. F.			
SINGLE FL				WATER CLOSET EXTRA				GROSS ANNUAL INCOME				S. F.			
ASPH. TILE				LAVATORY EXTRA				LESS FLAT EXPENSES				S. F.			
TERRAZZO				SINK EXTRA				BALANCE FOR CAP.				S. F.			
WOOD JOIST				URINALS				CAP. RATE				S. F.			
STEEL JOIST				NO PLUMBING				REFLECTED CAP. VALUE				S. F.			
REIN. CONC.												S. F.			
OCCUPANCY				CONSTRUCTION				SIZE				AREA			
1 Garage				15 R.R.				5K							
2															
3															
4															
5															
6															
7															
8															

OCCUPANCY DETAIL & INCOME

GOOD	FAIR	POOR
20	518-81	

40

1015

2146

8000

556,800

556,800

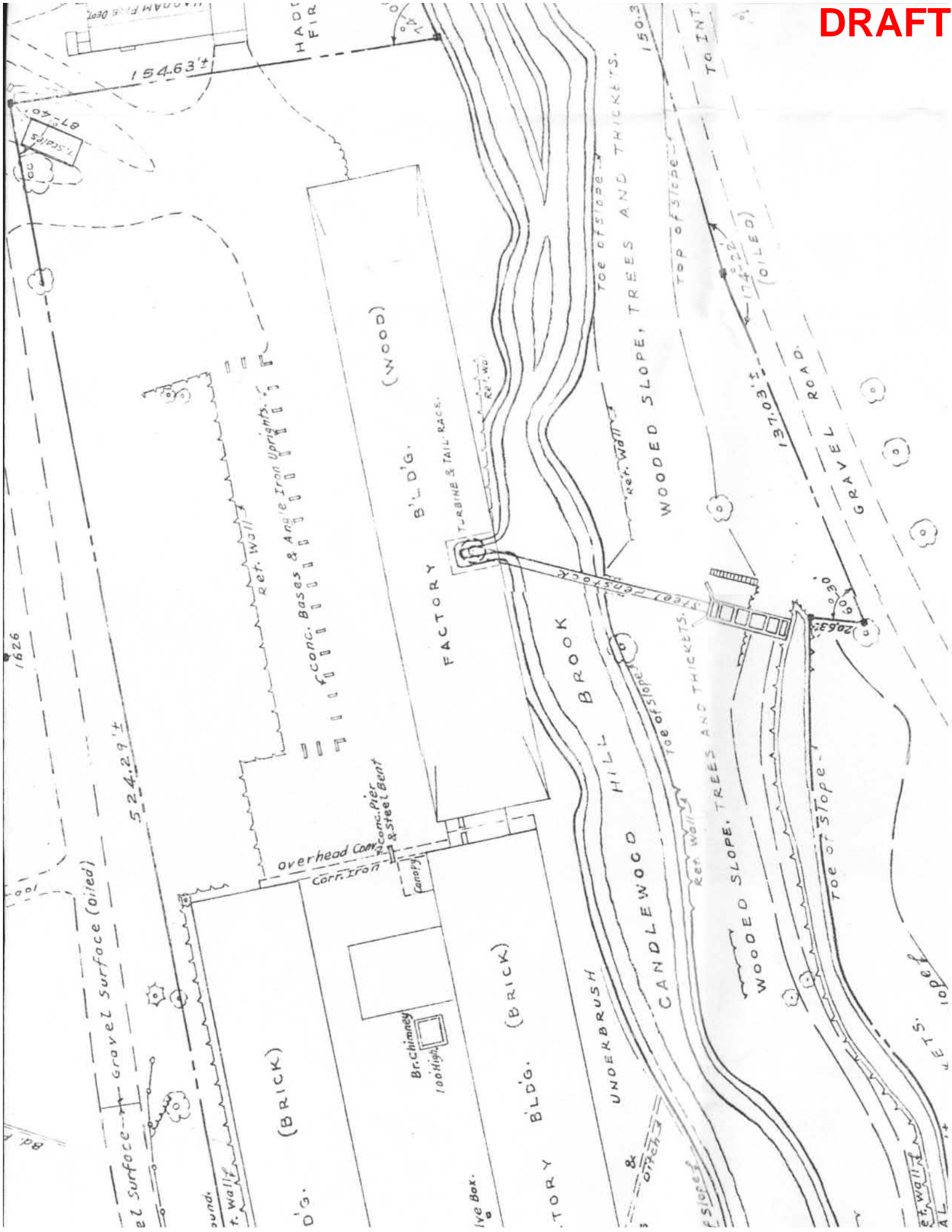
30

389,700

89,700

70

DRAFT



Appendix C

Environmental Database Search
Environmental Data Resources, Inc. (EDR)

Appendix D

Previous Environmental Investigations

Appendix E

State File Information



Connecticut Department of Energy and Environmental Protection
Emergency Response and Spill Prevention Division
Emergency Incident Report

Case No.: 2012-00295

Staff Receiving Call: 205 COX, MICHAEL

Assigned To: 916 STAVOLA, ROSANNE

Date Reported: 01/17/2012 Time Reported: 14:36

Date of Release: 01/17/2012 Time of Release: 8:00

Town of Release: HADDAM

State of Release: CT

Location of Reported Release: HIGGANUM, 11 CANDLEWOOD ROAD

Reported By: LIAM BANE

Phone: (860) 918-1587

Ext:

Representing: TRC

Responsible Party: CT DOT DENISE YOUNG

Phone: (860) 594-2686

Street Address:

Town:

State:

Zip Code:

Does the Responsible Party Accept Financial Responsibility?

Release Type: PETROLEUM

Release Substance: HYDRAULIC OIL

Media: PARKING LOT

Total Quantity: 5 Gallons 0 Cubic Yards 0 Cubic Feet 0 Drums 0 Pounds

Emergency Measures:

Has the Release Been Terminated?: YES

Type of Waterbody Affected: CATCH BASIN

Name of Waterbody Affected:

Total Quantity Recovered: 0

Total Quantity in Water: 0

Corrective Actions Taken: CONTRACTED

CTR, BOOMS, SPILL PADS APPLIED

Discharge Class: GOVERNMENTAL

Cause of Incident: HOSE FAILURE

Agencies Notified: DEP DISPATCH

Status: CLOSED



Connecticut Department of Energy and Environmental Protection
Emergency Response and Spill Prevention Division
Emergency Incident Report

Case No.: 2014-05891

Staff Receiving Call: 205 COX, MICHAEL

Assigned To: 000 NO RESPONSE

Date Reported: 11/18/2014

Time Reported: 14:53

Date of Release: 11/18/2014

Time of Release: UNKNOWN

Town of Release: HADDAM

State of Release: CT

Location of Reported Release: HIGGANUM 11 CANDLEWOOD HILL ROAD

Reported By: SUSAN HIGGANER

Phone: (860) 528-9500

Ext:

Representing: ESI

Responsible Party: SAA

Phone:

Street Address:

Town:

State:

Zip Code:

Does the Responsible Party Accept Financial Responsibility? YES

Release Type: PETROLEUM

Release Substance: #2 FUEL OIL

Media: SOIL

Total Quantity: ~3 Gallons

0 Cubic Yards

0 Cubic Feet

0 Drums

0 Pounds

Emergency Measures: 4k UST - soil removed

Has the Release Been Terminated?: YES

Type of Waterbody Affected: NONE

Name of Waterbody Affected: N/A

Total Quantity Recovered: 0

Total Quantity in Water: 0

Corrective Actions Taken: CONTAINED

REMOVED TANK

SOIL REMOVED

Discharge Class: GOVERNMENTAL

Cause of Incident: TANK BROKE WHEN PULLED

Agencies Notified: DEP DISPATCH

Status: CLOSED



Connecticut Department of Energy and Environmental Protection
Emergency Response and Spill Prevention Division
Emergency Incident Report

Case No.: 2002-01767

Staff Receiving Call: 210 MCCARTHY, KEVIN

Assigned To: 925 LIANO, MARK

Date Reported: 03/21/2002

Time Reported: 17:12

Date of Release: 03/21/2002

Time of Release: UNKNOWN

Town of Release: HADDAM

State of Release: CT

Location of Reported Release:

HIGGANUM-ROUTE 154 AT CANDLEWOOD HILL ROAD

Reported By: ANONYMOUS

Phone: (000) 000-0000

Ext:

Representing: SELF

Responsible Party: MARIN ENVIRONMENTAL

Phone:

Street Address:

Town:

State:

Zip Code:

Does the Responsible Party Accept Financial Responsibility?

Release Type: CHEMICAL

Release Substance: SOLVENT CONTAMINATION IN DRILL SPOIL

Media: GROUND SURFACE

Total Quantity:

0 Gallons

0 Cubic Yards

0 Cubic Feet

0 Drums

0 Pounds

Emergency Measures:

ANONYMOUS COMPLAINT THAT MARIN ENVIRONMENTAL IS DRILLING WELLS IN
CONTAMINATED SOIL, STATES THAT THE SPOILS FROM THE DRILLING ARE RUNNING
INTO CATCH BASINS IN THE AREA.

Has the Release Been Terminated?: YES

Type of Waterbody Affected: CATCH BASIN

Name of Waterbody Affected: CATCH BASIN

Total Quantity Recovered: 0

Total Quantity in Water: 0

Corrective Actions Taken: REFERRED

Discharge Class: COMMERCIAL

Cause of Incident: DRILLING

Agencies Notified: DEP DISPATCH

Status: CLOSED



Connecticut Department of Energy and Environmental Protection
Emergency Response and Spill Prevention Division
Emergency Incident Report

Case No.: 98-05433

Staff Receiving Call: 914 PORTER, JOHN

Assigned To: 923 MCCANN, MIKE

Date Reported: 08/14/1998

Time Reported: 10:52

Date of Release: 08/14/1998

Time of Release: UNKNOWN

Town of Release: HADDAM

State of Release: CT

Location of Reported Release: HIGGANUM - 11 CANDLEWOOD HILL RD

Reported By: PAUL BISCUTI

Phone: (860) 537-0751

Ext:

Representing: GEI CONSULTANTS

Responsible Party: STATE DOT.

Phone: (860) 345-4144

Street Address: SAA

Town:

State:

Zip Code:

Does the Responsible Party Accept Financial Responsibility? YES

Release Type: PETROLEUM

Release Substance: HYDRAULIC OIL

Media: INSIDE BUILDING

Total Quantity: 70 Gallons

0 Cubic Yards

0 Cubic Feet

0 Drums

0 Pounds

Emergency Measures: HYDRAULIC FLUID IN A SUMP PIT.

Has the Release Been Terminated?: NO

Type of Waterbody Affected:

Name of Waterbody Affected: UNK

Total Quantity Recovered: 0

Total Quantity in Water: 0

Corrective Actions Taken: INSPECTOR ASSIGNED

Discharge Class:

Cause of Incident: SEEPAGE

Agencies Notified:

Status: CLOSED

manifest	dtshipp	batch-numbers	genepa	genname	gensitestreetaddress	gensitetown	gensitezipcode	wasteoccr	usdot	contro	contty	qty	wtvol
CTF0053646	4/19/1991 0:00	999999	CTP000012189	CT STATE OF DOT	11 CANDLEWOOD HILL RD	HIGGANUM	6441	1	HAZARDOUS WASTE LIQUID, NOS	1	TT	160	G
CTF0244813	4/19/1994 0:00	999999	CTP000016383	CT STATE OF DOT HIGGANUM	11 CANDLEWOOD HILL RD	HIGGANUM	6441	1	HAZARDOUS WASTE SOLID	1	CF	68	P
NYG2639529	8/29/2001 0:00	4641, 4844	CTP000025780	CT STATE OF DOT	CANDLEWOOD HILL RD	HIGGANUM	6441	1	ENVIRONMENTALLY HAZ. SUBSTANCES, SOLID	1	DM	300	P

epa-waste-codes	tsdfepa	tsdfname	tsdfstreetaddress	tsdftown	tsdfzipcode	tran1epa	tran1name	recdate	tsdfstate	uniqueKey
D001	CTD021816889	UNITED OIL RECOVERY INC	136 GRACEY AVE	MERIDEN	6450	CTD021816889	UNITED OIL RECOVERY INC	4/19/1991 0:00 CT	CT	CTF00536461
D009	CTD089631956	EAST COAST ENVIRONMENTAL SERVICE CORP	454 QUINNPIAC AVE	NEW HAVEN	6513	CTD089631956	EAST COAST ENVIRONMENTAL SERVICE CORP	4/19/1994 0:00 CT	CT	CTF02448131
D008	NYD049836679	C W M CHEMICAL SERVICES LLC	1550 BALMER RD	MODEL CITY	14107	CTD983896341	WASTE MGT NEW ENGLAND ENV TRANSP INC	8/31/2001 0:00 NY	NY	NYG26395291

52-~~3~~ MAPLE AVE

17-8 HULL AVE

275-315 SAYBROOK RD

6-27 KILLINGWORTH RD

18 LAUREL HEIGHTS

No Streets 1977-1991
or before 1968

DOT 1977-1968

NOTHING IN RG 079

FILE ROOM 24
1417

→ LUST

→ SITS

5 G HYDRAULIC OIL, 2012

3 G #2 FUEL OIL, ^{4k} ^{→ SOIL} UST/REMOVAL, 2014

SOLVENTS IN SOIL BORINGS (MARIN), 2002

70 G HYDRAULIC OIL IN SWAMP, 1998

(3) MANIFESTS

Annual UST /line ^{leak} monitoring thru 2013 - passed

dieldrin/
chlordane

Files we have on 11 Candlewood Hill/Old Scovil Hoe Mill/Former Haddam DOT

- Annual Status Report for Calendar Year 2006
 - Task 220 Exploratory Site Investigation
 - Missing Map
- Annual Status Report for Calendar Year 2009
 - Map
- ECAF, April 18, 2002
 - Salt Storage and Maintenance Facility Study, Metcalf & Eddy, Nov. 5, 1985
 - Preliminary Test Report Conn DOT Salt and Maintenance Facility Study, Metcalf & Eddy, 1985
 - Field Investigation Work Plan for the Higganum Site #25, Fred C. Hart Associates, Nov. 26, 1985
 - Supplement to Field Investigation Work Plan for the Higganum Site #25, Fred C. Hart Associates, June 1986
 - Draft Field Investigations Report for the Higganum Site #25, Fred C. Hart Associates, June 25, 1987
 - Detailed Test Report Conn DOT Salt Storage and Maintenance Facilities Study, Metcalf & Eddy, 1987
 - Water Supply Feasibility Study Businesses and Residence on Candlewood Hill Road, Metcalf & Eddy, May 1993
 - State of CT Dept. Health Services Laboratory Division – Potable Well Reports for Town of Higganum
 - Environmental Science Corp. laboratory Reports for Samples obtained at Neal's Cleaners
 - CT State Dept. Health Environmental Research laboratory Results
 - State of CT DOT Waste Disposal Questionnaire Form
 - CT DEP Incident Report Oil & Chemical Spills Division
 - State of CT DEP Underground Storage Facility Notification
 - + Tables/Figures
- Inspection Report, June 22, 1983
- Missing Receptor Survey map (2003)
- Response to "Finding of No Significant Impact for DOT Maintenance Facility, Haddam, Nov. 1991
- Water Quality monitoring Evaluation Report, Higganum, CT, Diversified technology Consultants, Nov, 2005
- Drinking Water Sample Results – 8/11/05, 8 Hull Ave + 10/19/05 *Dieter 0-770911*
- Water Sampling Results, 4 Hull Ave – 2/18/10 + 4/1/10 *ALL ND*
- Water Sampling Results, 7 Candlewood Hill Rd, Nov. 16, 2010
- Water Quality Monitoring Analysis, 7 Killingworth Rd, Higganum, 9/14/2005 + 3/15/10 – *ALL ND*
- Pennoni UST
- UST Notification, Signed Nov. 4, 1997 & Signed 4/2/90 & Signed 4/28/88 & Signed 1/20/04 & 4/28/86
- Phase I, Marin, Jan. 2001
- GW Sampling Data Summary, marin, Dec. 11, 2000

Which houses were/are sampled near site? Comprehensive list of results? Current results?

Answers to data gaps?



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



6-8E

061-029-4793

3-289

STATE OF CONNECTICUT
VS
TOWN OF HADDAM

IN THE MATTER OF AN ORDER TO THE TOWN OF HADDAM TO PROVIDE POTABLE DRINKING WATER

ORDER

Having found that the Town of Haddam is a municipality in which a community pollution problem exists and the Commissioner of Environmental Protection is unable to determine the person who or municipality which is responsible for rendering groundwaters unusable for potable drinking water, under the provisions of Chapter 446k of the General Statutes as amended, the Commissioner of Environmental Protection acting under Sections 22a-428, 22a-444, 22a-451 and 22a-471 hereby Orders the Town of Madison to take such action as is necessary to:

1. Investigate the extent and degree of groundwater contamination at Depot Road, Parsonage Road, Saybrook Road, Calliari Road, and Candlewood Hill Road within the Town of Haddam and determine the extent of those areas which presently or potentially may not meet the State of Connecticut Department of Health Services requirements for potable drinking water.
2. Provide a potable drinking water supply which meets the standards for drinking water established by the Commissioner of Health Services to the following properties and the areas as identified in the study required under Directive 1.

<u>Property Owner</u>	<u>Location</u>
J.C. Wire Products	Depot Road
Town Garage	Depot Road
Rossi, Inc.	Depot Road
Tully	2 Calliari Road
Ryer	6 Parsonage Road
Faggione	9 Parsonage Road
Hartke	271 Saybrook Road
Crum	275 Saybrook Road
Century 21	Saybrook Road
Properties served by well at Higganum Oil Co.	33 Candlewood Hill Road

3. For each of the following properties, monitor water quality as described below.

<u>NAME</u>	<u>ADDRESS</u>
Properties served by well at Country Market Oliver	Saybrook Road 267 Saybrook Road 265 Saybrook Road
Spitzmacher	4 Calliari Road

Phone:

(1) Monitor water quality as follows:

- (a) On a minimum schedule of four times per year (quarterly), monitor water supply wells for aromatic and halogenated volatile organics using a laboratory certified for such analyses by the Connecticut Department of Health Services.
- (b) For monitored properties which exceed the level for any aromatic or halogenated volatile organic for which the Commissioner of Health Services determines to create or reasonably can be expected to create an unacceptable risk to the health and safety of persons using groundwater from such properties for drinking or other domestic purposes (hereinafter "then current action level"), provide a potable water supply according to the criteria established in Steps A and C of this order.

The Town of Haddam is further Ordered to accomplish the above described program, except as may be revised and agreed to by the Commissioner of Environmental Protection and the Commissioner of Health Services in accordance with the following schedule:

- A. On or before March 31, 1989, submit for the review and approval of the Commissioner of Environmental Protection and the Department of Health Services a schematic layout including sizing for a granular activated carbon treatment system for the properties identified in Directive 1.
- B. On or before April 30, 1989, submit for the review and approval of the Commissioner of Environmental Protection a request for State Grant for the provision of long-term potable water, which includes a Municipal Resolution authorizing the filing of the grant application, evidence of local funding and bids/proposals from three suppliers for the treatment system as approved under Step A.
- C. On or before June 30, 1989, verify to the Commissioner of Environmental Protection that the treatment system as approved under Step A above has been placed in operation.
- D. On or before March 31, 1989 and quarterly thereafter, for those properties listed in Directive 3, monitor water supply wells as required by Directive 3 and the following:

- (1) Any supply tested pursuant to Directive 3 which exceeds the then-current action level established by the Commissioner of Health Services for any aromatic or halogenated volatile organic shall be resampled within 15 days. If exceedance of such level is confirmed, a permanent potable water supply shall be provided to that property in accordance with a schedule approved by the Commissioner of Environmental Protection. If the retest does not confirm the exceedance of such levels, a third sample shall be taken within fifteen days, and if two of the three tests show that such level is exceeded, a permanent potable water supply shall be provided to that property in accordance with a schedule approved by the Commissioner of Environmental Protection. Results of testing shall be submitted to

the Commissioner of Environmental Protection, the Commissioner of Health Services and the affected property owners within one month of taking a sample or five days of receipt of results from the testing laboratory, whichever is sooner.

- (2) The minimum duration for quarterly monitoring shall be one year. If a concentration value of 70% of the then-current action level for any aromatic or halogenated volatile organic is not exceeded at any time during four consecutive quarterly sampling periods, monitoring frequency may be reduced to semi-annually for two years and annually for two years.
- (3) Semi-annual and annual testing shall be conducted during periods of the year specified by the Commissioner of Environmental Protection. If a concentration value of 70% of the then-current action level for any aromatic or halogenated volatile organic is not exceeded during the two-year duration of semi-annual samplings and the two year duration of annual samplings, monitoring for the particular supply may be terminated with the approval of the Commissioner of Environmental Protection. If a concentration value of 70% of the then-current action level for any aromatic or halogenated volatile organic is exceeded, quarterly monitoring and thereafter semi-annual and annual monitoring shall be reinstituted as described in items D(2) and D(3) unless the then-current action level for any aromatic or halogenated volatile organic is exceeded in which case the supply shall be monitored and further action taken as necessary in accordance with items D(1), D(2) and D(3).

If any document required to be submitted to the Commissioner under this order is disapproved by the Commissioner, it shall be resubmitted, with the deficiencies corrected, within the time specified by the Commissioner, or, if no time is specified by the commissioner, within thirty days of the date that notice of the deficiencies was signed.

In the event that the Town of Haddam becomes aware that it may not comply, or comply on time, with any requirement of this order or any document approved hereunder, the Town of Haddam shall immediately inform the Commissioner, and shall take all reasonable steps to ensure that any noncompliance or delay is avoided, or, if unavoidable, is minimized to the greatest extent possible. Notification shall not excuse noncompliance or delay. In so notifying the Commissioner, the Town of Haddam shall state the reasons for the noncompliance or delay and propose, for the review and written approval of the Commissioner, dates by which compliance will be achieved, and the Town of Haddam shall comply with the dates approved by the Commissioner.

Any document or notice required to be submitted to the Commissioner of Environmental Protection under this order shall, unless otherwise specified in writing by the Commissioner, be directed to:

Brenda Ekwurzal
Water Compliance Unit
Department of Environmental Protection
122 Washington Street
Hartford, Connecticut 06106

Failure to comply with this order shall subject the Town of Haddam to an injunction and penalties under chapters 439 and 446K of the Connecticut General Statutes.

Entered as an Order of the Commissioner of Environmental Protection this
6th of March, 1989.

Leslie Carothers
Leslie Carothers
Commissioner

ORDER NO. WC 4793
DISCHARGE CODE J
TOWN OF HADDAM
DEP/WPC 061-029
SENT CERTIFIED MAIL - RRR

MAILED TO: JANE W. BLAU
FIRST SELECTMAN
TOWN OFFICE BUILDING
RT. 154
P.O. BOX 87
HADDAM, CT 06438

Appendix F

Completed Questionnaires



PHASE I USER QUESTIONNAIRE

PAGE 1 of 2

SITE NAME: Former Scovil Hoe Mills/CT DOT Maintenance & Repair FacilitySITE ADDRESS: 11 Candlewood Hill RoadCompleted By: Elizabeth Glidden Date: 1-16-18
(Please Print)Signature: EGliddenRepresenting: Town of Haddam Phone No: 860-345-8531**ASTM Questions to Address User Responsibilities:**

In order to qualify for one of the *Landowner Liability Protections (LLPs)* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "*Brownfields Amendments*") the *user* must conduct the following inquiries required by 40 CFR 312.25, 312.28, 312.29, 312.30, 312.31. These inquiries must also be conducted by EPA Brownfield Assessment and Characterization grantees. The *user* should provide the following information to the *environmental professional*. Failure to conduct these inquiries could result in a determination that "*all appropriate inquiries*" is not complete.

1) Environmental cleanup liens that are file or recorded against the site (40 CFR 312.25).

Did a search of *recorded land title records* (or judicial records where appropriate) identify any environmental liens filed or recorded against the *property* under federal, tribal, state, or local law? If yes, please explain:

unknown

2) Activity and land use limitation (AUL) that are in place on the site or that have been filed or recorded in a registry (40 CFR 312.26(a)(1)(v) and (vi)). Did a search of *recorded land title records* (or judicial records where appropriate) identify any AULs, such as *engineering controls*, *land use restrictions* or *institutional controls* that are in place at the *property* and/or have been filed or recorded against the *property* under federal, tribal, state or local law? If yes, please explain:

unknown**3) Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28).**

Do you have any specialized knowledge or experience related to the *property* or nearby properties? For example, are you involved in the same line of business as the current or former *occupants* of the *property* or an *adjoining property* so that you would have specialized knowledge of the chemicals and processes used by this type of business? If yes, please explain:

No**4) The relationship of the purchase price to the fair market value of the *property* if it were not contaminated (40 CFR 312.29).** Does the purchase price being paid for this *property* reasonably reflect the fair market value of the *property*?

If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the *property*?

No price at this time**5) Commonly known or reasonably ascertainable information about the *property* (40 CFR 312.30).**

Are you aware of commonly known or *reasonably ascertainable* information about the *property* that would help the *environmental professional* to identify conditions indicative of releases or threatened releases?

If yes, please answer the following questions:

- What were the past uses of the *property*? Det garage
- What chemicals are present or once were present at the *property*? unknown
- What spills or other chemical releases that have taken place at the *property*? unknown
- Explain any environmental cleanups that have taken place at the *property*. unknown



PHASE I USER QUESTIONNAIRE
PAGE 2 of 2

6) The degree of obviousness of the presence of likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31). As the *user* of this *ESA*, based on your knowledge and experience related to the *property* are there any *obvious* indicators that point to the presence or likely presence of contamination at the *property*?

Former DOT garage facility

Other Questions:

ASTM Practice 1527-13 also requires that the *user* answer the following questions:

7) As the user of this *ESA*, are you aware of any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the property? If so, explain:

No

8) As the user of this *ESA*, are you aware of any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property? If yes, explain:

No

9) As the user of this *ESA*, are you aware of any notices from any governmental entity regarding any possible violation of environmental laws or possible liability related to hazardous substances or petroleum products? If yes, explain:

Unknown

10) We are required to ask you as the user if you have any of the following reports in your possession. Please place an "X" next to each report that is available:

☒ Environmental site assessment reports

☐ Environmental compliance audit reports

☐ Environmental permits

☐ Underground storage tank notification forms

☐ Registrations for underground injection systems

☐ Material safety data sheets

☐ Community right to know plans

☐ Safety plans, preparedness and prevention plans, spill prevention, countermeasure and control plans

☐ Reports regarding hydrogeologic conditions on the property or surrounding area

☐ Notices or other correspondence from any governmental agency relating to past or current violations of environmental laws

☐ Hazardous waste generator notices or reports

☐ Geotechnical studies

☐ Risk assessments

☐ Activity and use restrictions

Please provide Fuss & O'Neill with copies of each report or make these reports available for inspection.

PHASE I ESA QUESTIONNAIRE-OWNER/KEY SITE MANAGER

SITE INFORMATION

Site Name: Former Scovil Hoe Mill/CT DOT Maintenance & Repair Facility

Address: 11 Candoverwood Hill Rd, Higganum, CT

QUESTION	OWNER	OCCUPANT
1. Is or has the <i>property</i> been used industrially?	<input checked="" type="radio"/> Yes / No / Unk	Yes / No / Unk
2. Is or has the <i>property</i> been used as a vehicle body repair facility, furniture stripping facility, dry cleaning facility, gasoline station, motor repair facility, commercial printing facility, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing or recycling facility (if applicable, identify which)?	<input checked="" type="radio"/> Yes / No / Unk	Yes / No / Unk
3. Did you observe evidence or do you have any prior knowledge that any <i>adjoining property</i> has been used as a vehicle body repair facility, furniture stripping facility, dry cleaning facility, gasoline station, motor repair facility, commercial printing facility, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing or recycling facility (if applicable, identify which)?	Yes / No / <input checked="" type="radio"/> Unk	Yes / No / Unk
4. Are there currently or have there previously been any <u>damaged or discarded</u> automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of greater than 5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the <i>property</i> or at the facility?	<input checked="" type="radio"/> Yes / No / Unk	Yes / No / Unk
5. Are there currently or previously has there been any industrial <i>drums</i> (typically 55 gal (208L)) or sacks of chemicals located on the <i>property</i> or at the facility?	<input checked="" type="radio"/> Yes / No / Unk	Yes / No / Unk
6. Did you observe evidence or do you have any prior knowledge that <i>fill material</i> has been brought onto the property that originated from a contaminated site or an unknown source.	Yes / No / <input checked="" type="radio"/> Unk	Yes / No / Unk
7. Are there currently or has there previously been any <i>floor drains, septic systems, dry wells, pits, ponds, or lagoons</i> located on the <i>property</i> in connection with waste treatment or waste disposal?	<input checked="" type="radio"/> Yes / No / Unk	Yes / No / Unk
8. Are there currently or has there previously been any registered or unregistered storage tanks (above or underground) located on the <i>property</i> ?	<input checked="" type="radio"/> Yes / No / Unk	Yes / No / Unk
9. Is there currently or has there previously been any evidence of leaks, spills or staining by substances other than water, or foul odors, associated with any flooring, drains, walls, ceilings, or exposed grounds on the property?	<input checked="" type="radio"/> Yes / No / Unk	Yes / No / Unk
10. If the <i>property</i> is served by a private well or non-public water system, is there evidence or do you have prior knowledge that contaminants have been identified in the well or system?	Yes / <input checked="" type="radio"/> No / Unk or Not Applicable	Yes / No / Unk or Not Applicable
11. Does that <i>owner</i> or <i>occupant</i> of the property have any knowledge of <i>environmental liens</i> or governmental notification relating to past or recurrent violations of environmental laws with respect to the <i>property</i> or any facility located on the <i>property</i> ?	Yes / <input checked="" type="radio"/> No / Unk	Yes / No / Unk



QUESTION	OWNER	OCCUPANT
12. Does the <i>owner</i> or <i>occupant</i> of the <i>property</i> have any knowledge of any <i>environmental site assessment</i> of the <i>property</i> or facility that indicated the presence of <i>hazardous substances</i> or <i>petroleum products</i> on, or contamination of, the <i>property</i> or recommended further assessment of the <i>property</i> ?	(Yes) / No / Unk	Yes / No / Unk
13. Does the <i>owner</i> or <i>occupant</i> of the <i>property</i> know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any <i>hazardous substance</i> or <i>petroleum products</i> involving the <i>property</i> by any owner or occupant of the <i>property</i> ?	Yes (No) / Unk	Yes / No / Unk
14. Did you observe evidence, or do you have prior knowledge that any <i>hazardous substances</i> or <i>petroleum products</i> , unidentified waste materials, tires, automotive or industrial batteries or any other waste materials have been dumped above grade, buried and/or burned on the <i>property</i> ?	(Yes) / No / Unk	Yes / No / Unk
15. Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?	Yes / No (Unk)	Yes / No / Unk

In accordance with Standard Practice ASTM E 1527-13 for Phase I Environmental Site Assessments (ESAs), we are required to ask you as the property owner or a person identified as a key site manager, the following questions:

1) Please place an "X" next to each if you have or know of the existence of any of the following reports relating to the site:

- Environmental site assessment reports X
- Environmental compliance audit reports
- Environmental permits X (Industrial Stormwater G.P.)
- Underground storage tank notification forms X
- Registrations for underground injection systems
- Material safety data sheets X
- Community right to know plans X Tier II Report
- Safety plans, preparedness and prevention plans, spill prevention, countermeasure and control plans X SWPPP
- Reports regarding hydrogeologic conditions on the property or surrounding area
- Notices or other correspondence from any governmental agency relating to past or current violations of environmental laws
- Hazardous waste generators notices or reports
- Geotechnical studies
- Risk assessments
- Activity and use restrictions

Please provide copies of each report to Fuss & O'Neill prior to or at the time of the site visit.

2) Are you aware of any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the property? No




3) Are you aware of any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property? No

4) Are you aware of any notices from any governmental entity regarding any possible violation of environmental laws or possible liability related to hazardous substances or petroleum products at the property?

No

The **Owner** questionnaire was completed by:

Name: Adam G. Fox
Title: Trans. Principal Engineer
Firm: State of CT DOT Environmental Compliance
Address: 2800 Berlin Tpke
Newington CT 06111
Phone: 860 594-3404

Owner's Signature: 

Date: 2/5/18

The **Occupant** questionnaire was completed by:

Name: _____
Title: _____
Firm: _____
Address: _____
Phone: _____

Occupant's Signature: _____

Date: _____

Appendix G

Site Photographs



Building 81-115



Building 81-106



Former Flume Outlet



Former Flume Inlet with Remnants of Former Dam



Utility Tunnel Building 81-115



Utility Tunnel Building 81-106



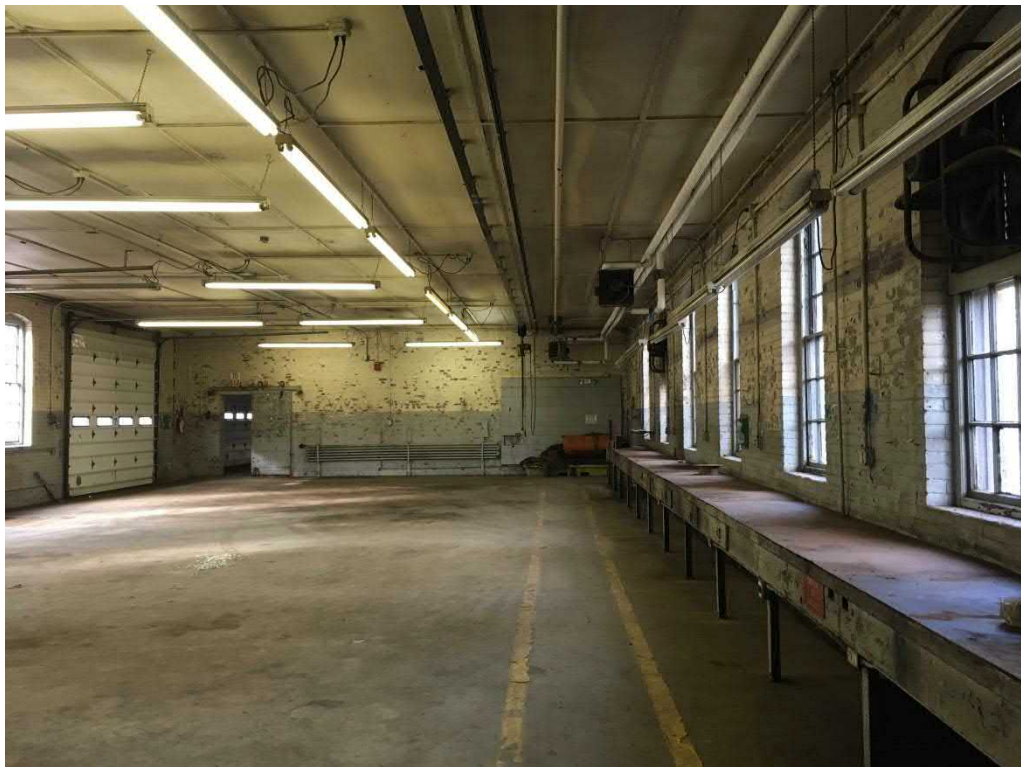
Interior of Tunnel Building 81-106
Note Blocked Access and Water Line Extending to Building 81-115



Out-of-Use Supply Well At Building 81-106



Water Supply Well With Water Line Extending to Bld. 81-115
Note Water Line to Water Pressure Tank in Bld. 81-115 Cut & Capped



Interior of Bld 81-115 with Diesel Fuel AST for Generator on Secondary Containment



Manhole Access for Stormwater Line Extending Below Building 81-115



Interior of Stormwater Line Below Building 81-115 at Access Manhole



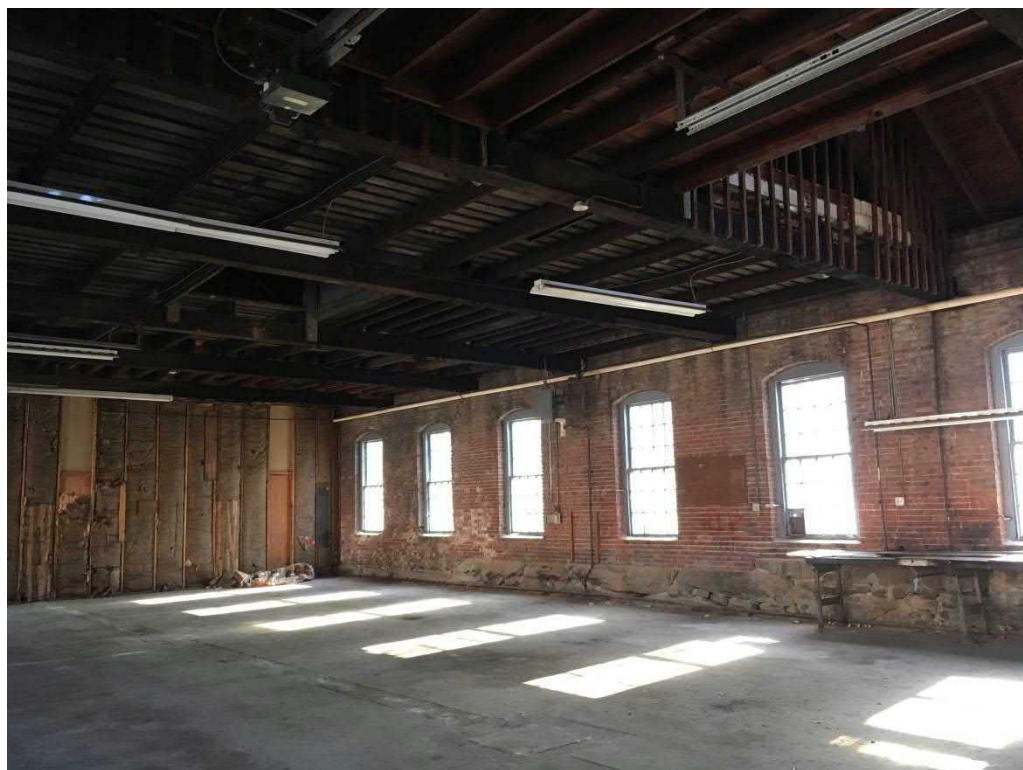
Waste Oil Drain Line to Former Waste Oil Tank (Rec-14) Bld 81-106



Markings of Former Above Ground Vehicle Lift At Building 81-106
(Note that this is a poured floor above a former below ground vehicle lift (REC 16))



View of north side of Building 81-106 and former Waste Oil UST (REC-14)



View of western third of Building 81-106
(Note floor cut out of below grade sumps and drainage trenches
previously filled with concrete (REC-15))



Furnace in Utility Room Extending From East End of Bld 81-106
(Note feed and return lines from Former USTs (REC-9) cut & capped, but remain in place)



Remnants of Former Shed Previously Used by DOT to Store Drums (REC-3)



View of South Side of Building 81-115 and Former Pump Islands (REC-6)



View of North Side of Building 81-115
(Stormwater Collection Catch Basin Visible in Foreground)
(Shed for Generator Visible in Background)



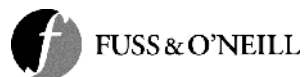
View of South Side of Building 81-106 and RECs 4 & 12. Candlewood Hill Brook Right of Picture



View of the Site from the West Limit with former Spar Mill Pond Area foreground (REC-1)

Appendix H

Qualifications of Environmental Professionals and Staff



Qualifications of Environmental Professionals and Staff Scientists and Engineers

Environmental Professionals

Employee	Title	Education	Years of Applicable Experience	Licenses
Daniel Jahne	Associate	BS Geology	25	LEP

Staff Scientists and Engineers

Employee	Title	Education	Years of Applicable Experience	Licenses
Stefanie K. Wierszchalek	Sr. Hydrogeologist	BS Geology & Environmental Science	12	--
Brianna Church	Engineer I	BS Environmental Engineering	1	--

Education

BS: Bachelor of Science

Licenses

LEP: Licensed Environmental Professional (Connecticut)