
PHASE I ENVIRONMENTAL SITE ASSESSMENT

**for
Former Woods Woolen Mill Property
Tax Map 25, Lot 28
23/25 Mill Street
Hillsborough, New Hampshire 03244**

December 2006

**Prepared for

Town of Hillsborough
Planning Department
29 School Street
Hillsborough, New Hampshire 03244**

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ACRONYMS

AAI	All Appropriate Inquiry
ACM	Asbestos-Containing Material
ACBM	Asbestos-Containing Building Material
AGQS	Ambient Groundwater Quality Standards
AOC	Area of Concern
ASTM	American Society of Testing Materials
BFE	Base Flood Elevation
CBD	Central Business District
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	CERCLA Information System
DES	New Hampshire Department of Environmental Services
EPA	United States Environmental Protection Agency
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
FINDS	Facility Index System
FIRM	Flood Insurance Rate Map
FOIA	Freedom of Information Act
LBP	Lead-Based Paint
LEA	Loureiro Engineering Associates, Inc.
NGVD	National Geodetic Vertical Datum
NHDOT	New Hampshire Department of Transportation
NFA	No Further Action
NFRAP	No Further Response Action Proposed
NPL	National Priority List
OHM	Oil and Hazardous Material
PCBs	Polychlorinated Biphenyls
RECs	Recognized Environmental Conditions
RCRA	Resource Conservation and Recovery Act
RCRIS	Resource Conservation and Recovery Act Information System
ROW	Right of Way
SLGL	Scott-Lawson Group, LLC
TCLP	Toxicity Characteristic Leaching Procedure
USC	United States Code
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds



UNITS

fbg	feet below grade
mg/kg	milligrams per kilogram
mg/l	milligrams per liter
ppb	parts per billion
ppm	parts per million
µg/kg	micrograms per kilogram
µg/l	micrograms per liter



1. INTRODUCTION

Loureiro Engineering Associates (LEA) has been retained by the Town of Hillsborough, New Hampshire to conduct a Phase I Environmental Site Assessment (ESA) of the former Woods Woolen Mill property located at 23/35 Mill Street, hereinafter referred to as the "Site". The Site consists of approximately 2.6±acres of town-owned land which was formerly the location of a woolen mill. The property and former mill is also known as (aka) the former Beck Mill Trust Site, is a listed state site, and is identified as New Hampshire Department of Environmental Services (DES) Site #199909015. The general location of the Site is depicted on the Locus Map in Drawing 1. A more complete description of the Site and the operating history of the facility are provided in subsequent sections of this report.

1.1 Purpose and Scope

This ESA report has been prepared at the request of the Hillsborough Planning Department to document current and historical operations conducted at the Site and to assess the potential for these operations to impact the environmental condition of the Site and surrounding properties. Future potential funding under state and/or federal Brownfields programs require a preliminary assessment of site conditions in general accordance with the guidance provided in the American Society for Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, designation ASTM E 1527-05, published November 2005 which incorporates the *All Appropriate Inquiries (AAI)* Final Rule (40 CFR Part 312).

As defined by the ASTM practice, an environmental assessment is "the process by which a person or entity seeks to determine if a particular parcel of real property (including improvements) is subject to *Recognized Environmental Conditions (RECs)*." In the context of this assessment, RECs refer to "the presence or likely presence of any hazardous substance or petroleum products on the property under conditions that indicate an existing release, a past release, or material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property". The purpose of the ESA is to perform all "appropriate inquiry" or AAI into the previous ownership and uses of the property consistent with good commercial and customary practices as defined in Title 42 of the United States Code (USC), Section 9601(35)(B). This portion is commonly referred to as the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Contamination relating to radon, asbestos and lead-based paint are not covered under CERCLA. The Phase I ESA consisted of a records review at the local, state and



federal level, a property reconnaissance and interviews with person(s) knowledgeable about the former mill for the purpose of identifying any known or suspect *RECs* and what impact they may have on the Site.

1.2 Assessment Conditions

Section 11.7 of the ASTM E1527-05 requires all deletions and deviations from the practice to be listed individually and in detail. In performing this Phase I ESA, the following deviations from the practice were employed by LEA.

- Interior Conditions – LEA did not enter and/or assess interior conditions of any of the on-site structures. Safety concerns (due to building instability) and limited access (boarded up buildings) prevented an inspection of interior conditions. Cameras were used to photograph interior areas where possible.
- Report Format - LEA has structured this report to contain all information identified in the recommended report format as provided in Appendix X2 of the ASTM Standard.
- Database Search - For proximate industrial facilities, LEA has utilized a computerized database search (as allowed by ASTM Standard E1527-05), and supplemented that information through file reviews and from observations made during the Site visit.
- Property Deed/Title Search - A title search of the property deed was not conducted by LEA. However, based on information obtained from a review of state agency files (See Section 4.10), the DES conducted a title search of the property in November 1999. Property deeds obtained by the state were used to summarize the property ownership history, which is included in Section 3.1 of this report.
- Asbestos Containing Material and Lead-Based Paint - An assessment of asbestos containing material (ACM) and lead-based paint (LBP) was not conducted by LEA. This report is not intended to satisfy all the required elements of a quantitative lead or asbestos survey. Identification of LBP and ACM contaminated materials can only be determined by licensed personnel using accepted field monitoring instrumentation and appropriate laboratory analysis of suspected materials. However, LBP and ACM has been confirmed to be present at the Site based on historical information reviewed and is further detailed in Section 3.4 of this report.
- Radon – Environmental conditions associated with the presence of naturally occurring radon emanating either from bedrock and/or groundwater was not assessed.



1.3 Report Organization

The primary purpose of this report is to present our findings and conclusions resulting from our appropriate inquiry into the previous ownership and uses of the Site, and our review of practically reviewable, publicly available, and reasonably ascertainable standard environmental record sources, standard historical sources, and standard physical setting sources. These investigations were performed in accordance with our proposal for professional services submitted to the Town of Hillsborough on September 26, 2006. The information contained within this report includes a detailed description of the Site, the abutting properties, as well as other properties in close proximity that could potentially impact the environmental conditions of the Site in Section 2; a summary of the history of the Site is discussed in Section 3; a summary of the physical and environmental setting is discussed in Section 4; areas of concern are described in Section 5; and findings and conclusions are discussed in Section 6. References used in preparation of this report are provided in Section 7.



2. SITE INFORMATION

The intent of this section is to provide the reader with an overview of Site information, a description of the Site, the results of the Site reconnaissance visit, background information pertinent to the Site, and information obtained from a detailed review of available files maintained by the Town of Hillsborough.

2.1 Location and Property Description

The Site is located at 23/25 West Mill Street on the south side of the Contoocook River approximately ¼-mile south of the Hillsborough square area. The Site is identified on the town assessor Map 25 as Lot 28 and consists of approximately 2.6± acres of discontinuous land situated between West Mill Street and the Contoocook River. The properties and streets abutting the Site are described below:

North/Northwest: By the Contoocook River and residential properties and commercial businesses across the river.

East/Southeast: By West Mill Street and commercial and residential properties.

South/Southwest: By residential properties and the Contoocook River.

The Site (Lot 28) is bisected (in a general north-south direction) by an approximately 25-foot wide right-of-way or ROW (Lot 27) owned by the State of New Hampshire and that is maintained by the New Hampshire Department of Transportation (NHDOT). Based on a review of the files maintained by the Town of Hillsborough Planning Department, the Site is located within the town's Central Business District (CBD) and is bordered by residentially zoned properties to the northeast, east and southeast along West Mill, Briggs, Maple and Pearl Streets. The property boundaries of the Site are depicted on Drawing 1, Site Plan. The approximate latitude and longitude of the Site is 43° 06' 45" North and 71° 53' 50" West. The approximate coordinates of the Site are 264,436 East and 4,777,096 North.

The Site is currently unoccupied and is owned by the Town of Hillsborough. The town acquired the property via tax deed from Leon E. Griffin, III on December 22, 2004. A copy of the town's taking of the property was recorded at the Hillsborough County Registry of deeds (ROD) in Book 7383 on Pages 1544 and 1545 (See Appendix A). The former mill property has a long



ownership history and was bought/sold several times since the late 1800s. A more detailed discussion of Site ownership is presented in Section 3.1 of this report.

2.2 Site Description and Structures

The following Site description was developed based on the cumulative acquisition of information obtained from the Site reconnaissance visit and a review of files and record sources at the Town of Hillsborough offices and various state agencies. A detailed walkover survey of the Site was conducted by LEA representatives on October 18, 2006 and a preliminary site walk was conducted in June 2006. The primary objective of this phase of the assessment was to physically observe characteristics of the Site and to obtain information identifying potential sources of contamination associated with current and/or former operations conducted at the Site.

2.2.1 Site Characteristics

The property consists of a long, narrow lot (approximately 930 feet long by 120 feet wide) situated between West Mill Street and the southern bank of the Contoocook River. The lot is 930 feet long and 120 feet in width at its widest point. The property is bisected (in a north-south direction) by an approximately 25-foot right-of-way (ROW) owned by the State of New Hampshire and operated by the New Hampshire Department of Transportation (NHDOT). The ROW was the location of a formerly active railroad line (Boston & Maine - Peterborough to Hillsborough Line) and was used to deliver coal (for use as a heating/power source) to the former mill's boiler house.

Except for the driveway access road from West Mill Street and concrete pads/surfaces related to former structures, most of the Site is unpaved. The access driveway, which is made of asphalt, is in poor condition. A large concrete pad (≈ 200 feet long by 15 feet) is located along the entire eastern side of the former original mill building/foundation and may have served as a loading/unloading area. Several concrete pads are located both outside and within the former original mill building/foundation. The concrete pads range in size from approximately 50 square feet (ft^2) or 5 feet by 10 feet to 350 ft^2 (10 feet by 35 feet). The concrete pads located within the former original mill building/foundation are presumed to have been/acted as footings for the former wooden (timber-frame) mill building. The smaller concrete pads outside of the former original mill building/foundation nearest the boiler house are possibly the location of the former elevator. Concrete pads in the sloped area of the Site are foundations for the fire suppression houses (which are still standing) and are located partially on the Site and in the ROW.

Unpaved areas are covered with vegetation, consisting of short and long grasses, shrubs and small (sapling) deciduous trees. The ROW is an open, largely un-vegetated area and is the

primary area of unpaved soils. According to Haley & Aldrich (H&A)'s Slope Restoration Alternatives Report dated March 2004, a small area of vegetated wetlands is located along the river near the southern end of the former original mill building near the bridge abutment.

Ground elevations are relatively flat in the north-south direction along the ROW (Elevation \approx 590 feet above mean sea level or msl). In the east-west direction (perpendicular to the river), ground elevations slope in a terraced-like pattern, from Elevation 600-610 feet msl adjacent to West Mill Street to Elevation 570-590 feet msl (adjacent to the river). Current topographic conditions at the site are shown on a Site Plan, prepared by H&A as part of the Slope Restoration Alternatives Report dated March 2004. A copy of the H&A Site Plan showing current topographic site contours is included in Appendix B of this report. The property is not designed with a subsurface drainage system (i.e. catch basins) for storm water management. Because most of the site is unpaved, storm water is assumed to be taken up by the plants and trees and infiltrates directly into soil.

Existing structures on the site include three buildings: Boiler House (which was a portion of the original mill building), a former warehouse building (#2) and a former office building. The foundation of the original former mill building still remains as a large depressed area between the ROW and the river. Site characteristics and the general layout of the site, including existing and historic structures are depicted on Drawing 1, Site Plan.

2.2.2 Facility Structures

The original mill building stood in the central portion of the site between the ROW and the river. A photo of the original mill building structure is provided in Appendix C. The original mill building, which was a four-story structure of timber-frame construction, was harvested (demolished) for its wood by a previous owner in 1999. Only the foundation of this structure still remains. Current structures on the site include: the former Boiler House, the former warehouse building (#2) and the former office building. The Boiler House was once the northern end of the former original mill building. Details on these structures were based on observations made during our site reconnaissance on October 18, 2006 (See Section 2.3) and information obtained from the town's assessor's building/property record cards, copies of which are provided in Appendix D. Information on past and current structures is described in further detail below.

Original Mill Building (Demolished) - This structure measures approximately 250 feet long by 50 feet wide and occupied an approximately 12,500 ft² area. This structure consisted of a basement floor, three manufacturing floors and a boiler room/house (see below). Each floor stood approximately 10 feet high. The foundation of the former mill was made of stone, portions

of which can still be seen. The basement floors were finished with wood overlying soil/dirt. The mill building was constructed entirely of wood (interior frame and floors) and had an asphalt roof. The mill building was heated by steam generated from coal/oil from the Boiler Room/House (see below). The mill building was equipped with a sprinkler system, an elevator and plumbing (bathrooms). The bathrooms were located on the west side of the first, second and third floors. The elevator shaft was located on the northeast side (adjacent to the ROW) within the tower feature in the location of the concrete pad. At the time of demolition in 1999, the mill building was dated to be more than 100 years old. The foundation of the original mill building remains today. Historic and current photos of this former structure/foundation are provided in Appendix C.

Boiler Room/House – As stated above, this structure was part of the former original mill building and consists of a three-story brick structure, which housed the boiler tanks that were used to heat the former/original mill building. Like the original mill building, this structure is dated to be more than 100 years old and dates back to the late 1800s. The Boiler Room/House, which still remains, is approximately 40 feet wide by 50 feet long and occupies an area of approximately 2,000 ft². According to the town record cards, the foundation of the Boiler Room/House is a slab. The interior framing and exterior walls on the west, south and east sides are constructed of wood. The exterior wall on the north side is of brick construction. The Boiler Room/House contains three to four boilers (tanks) which are no longer in use. According to documents in the NHDES site files, the tanks have not been removed due to the discovery that the tanks and piping systems are wrapped in asbestos. Photos of the Boiler Room/House are provided in Appendix C.

Warehouse Building - This structure is located approximately 100 feet north of the former mill building/foundation and Boiler Room/House along the ROW. This structure is referred to as the warehouse building based on its former use as a storage warehouse as part of former textile manufacturing operations at the mill. According to town record cards (See Appendix D) and Sanborn® Fire Insurance Maps (See Appendix E), this structure was part of the original textile mill/manufacturing operations and is considered to be more than 100 years old. The Warehouse Building is a one-story structure with crawl space. The building measures approximately 150 feet long and 38 feet (at its widest point) and covers an approximately 4,300 ft² area. The building's interior, framing and floors are constructed of wood. The roof is made of asphalt. According to the town record cards, this structure is/was not equipped with a sprinkler system or insulation. In 1984, the condition of this structure was rated as fair. At the time of LEA's reconnaissance in June 2006, the condition of the Warehouse Building appeared to be poor and structurally unsound based on the collapsed roof and walls. Photos of the Warehouse Building in June 2006 and later in October 2006 (showing further roof collapse) are provided in Appendix C.

Former Office/Residential Building – This structure is located approximately 45 feet east of the Boiler Room/House. This structure measures approximately 33 feet long by 20 feet wide and occupies an area of approximately 660 ft². The west side of this structure encroaches on the ROW by approximately 5 feet. The office is a one-story wood structure (exterior walls, frame and floors) and has an asphalt roof. Interior walls are constructed of dry-wall and paneling. The structure is heated by electricity (overhead service) and is insulated for year round occupancy. According to the town record cards, this structure is dated to be more than 100 years old and formerly served as an office for the former textile mill. This structure was most recently used as a residence by the previous property owner – Leon Griffin, III. This structure is currently boarded up and is not in use and rated to be in poor condition. Photos of this structure are provided in Appendix C.

2.2.3 Utilities

According to the town, the site is not serviced by natural gas or cable nor is/was it equipped with a storm water (drainage) or septic system. Former and/or existing utilities included electric and telephone (via overhead wires), municipal water and sewer (in the former office building) only. As seen on the 1929 and 1950 Sanborn® Fire Insurance Maps of the site, water to the site was obtained from a 6-inch diameter water line (in West Mill Street) and transported across the property via an 8-inch subsurface water pipe down the asphalt paved driveway which ran in two directions: 1) behind the office building structure in a southerly direction (parallel and between the ROW and West Mill Street) to connect to fire suppression houses, and, 2) on the north side of the office building into the Boiler Room/House. According to Mr. Hank Woods (mill manger from circa 1952-1977), the bathrooms in the former original mill building discharged directly to the Contoocook River. According to the town, the office building is connected to the town sewer system in West Mill Street. No other utilities are known to exist or be in use on the site.

2.3 Site Reconnaissance

A preliminary site survey/walkover of the Site was conducted by an LEA representative in June 2006 in the accompaniment of Mr. James Coffey, the Town Business Administrator. On October 18, 2006, a second detailed site survey/walkover of the Site was conducted by LEA representatives in the accompaniment of Mr. Matthew Taylor, the Town Planner. Both survey/walkover(s) covered the exterior of the Site structure(s) only, and the associated 2.6± acres of property/land. A survey/inspection of the interior of the three existing structures was not conducted due to access issues (Boiler Room/House and office structures which were boarded up) and/or due to safety issues related to structural instability of the Warehouse Building. Site photos from the June and October 2006 surveys/walkovers are provided in Appendix C.



The primary objective of the survey/walkover was to obtain information identifying potential sources of contamination in connection with the former mill operations, assess physical condition of on-site structures, to observe the extent of debris accumulated on-site.

The Site consists of an abandoned former textile mill property, portions of which has been demolished and are naturally collapsing on their own (due to age). The site/property was accessed via a paved driveway from West Mill Street. LEA's reconnaissance included a walkover over the entire property and visual inspection of the exterior of the three remaining on-site buildings: (the Boiler Room/House, the Warehouse Building and the Office Building) and the ROW.

Former Mill Building Foundation - The foundation of the former mill building consists of a large open hole (approximately 10 feet deep) that was filled with various types of solid debris, including items as: wood clapboards, crushed scrap metals, old drums and containers. LEA did not enter the foundation structure during the site walk. Because of the amount of debris within the foundation, most of the ground at the bottom of the foundation could not be directly observed. However, a small area within the center of the foundation (where the debris was minimal), revealed that the sub-floor beneath the former basement wood floor was soil/dirt. Three areas of dark brown petroleum-like staining were observed atop and/or on the sidewalls of the concrete pads within the foundation.

Boiler Room/House - According to sampling data collected by the Scott-Lawson Group in October 2000 (for DES Air Resources Division), the Boiler Room/House contains three tanks: a Center Boiler, a Side Boiler and a Package Boiler (See Sections 3.4.1 and 3.4.3). The ends of these boilers/tanks are exposed on the south and north sides of the second and third floors of the structure. The south face is of wood construction and the north face is of brick construction. The west (river) side of the structure was not observed. The east side of the structure appeared to be failing and portions of a black material was exposed from underneath the wood clapboard siding. This black material was inferred to be some type of heat suppressant layer between the interior and exterior walls. This black material was observed to contain small fibers (potentially asbestos) and was recommended for future sampling. Overall, the building appeared to be in poor condition.

Warehouse Building - The exterior of this structure consist of red-painted wood clapboard siding. The roof of this structure, as well as many of the interior walls and floor, has collapsed. Based on a review of the photos taken in June 2006 versus the October 2006 site walk, the roof had collapsed even further. Several black, rusty drums were observed inside the building and were viewable from the north side of the structure. Interior walls were exposed and were

observed to be characteristic of cement boards containing transite. The floor surface within the crawl space (half-basement) of this structure contained miscellaneous debris and consisted of soil/dirt. Overall, the condition of this structure was very poor.

Former Railroad ROW - In June 2006, the area along the ROW south of the office building was littered with considerable amounts of surface debris, including old tires, old machines, crushed metals drums and metals pipes. During the survey/walkover on October 18, 2006, this area along the ROW appeared to have been recently cleaned up, presumably by the NHDOT. All of the previously identified surface debris had been removed from the area and the surface of the ROW in this area was covered with a layer of fresh (visually clean) sand.

2.4 Adjoining Land Use

The property to the northeast of the Site (Tax Map 25 Lot 30) was also part of the former Woods Woolen Mill property but is currently owned by a private citizen and used as a self-storage facility and as residence. The properties to the east and southeast along West Mill Street and adjacent side streets are residential. The Site is abutted by the Contoocook River to the north, west and southwest. Properties across the river (along West Main Street) are primarily commercial but also residential.



3. SITE HISTORY

The intent of this section is to provide the reader with an overview of the Site history, background information, and Site ownership. This section provides background information pertinent to the Site and includes information on the history of the Site, a description of historical and current activities conducted at the Site, and raw materials and/or wastes historically or currently used at the Site. Further, this section provides a description of the interpretation of a review of historical record sources including Sanborn® Fire Insurance Maps, and historic mapping.

3.1 Ownership Records and Deed Information

A review of the records at the Town of Hillsborough Tax Assessor's Office was performed on October 18, 2006 to determine the previous ownership record for the Site. In addition, based on the information found in the Waste Management site files at the DES in Concord, the state performed a title search of the property in November 1999. The changes in ownership of the Site are discussed below, along with reference to the deed book volume and page numbers. Copies of the select deeds and mapping defining the legal description of the Site are included in Appendix A. The following table provides a summary of the grantor and grantee records for the Site.

Property Ownership and Transfer Record

Grantor	Grantee	Date	Book/Page
Leon Griffin, III	Town of Hillsborough	December 22, 2004	7383/1544 (Lot 028) 7383/1545 (Lot 029)
Joseph Griffiths (Hill Mill Realty, LLC)	Leon Griffin, III	No Record Found	No Record Found
Beck Mill Trust (Isaac F. Beck and Douglas S. Hatfield, Jr)	-	April 29, 1999	6096/1238
W.A.C, Inc.	Beck Mill Trust (Isaac F. Beck and Douglas S. Hatfield)	June 9, 1987	4206/0035
Woods Woolen Mill Company	W.A.C. Inc.	August 2, 1976	2472/035
Hillsboro Woolen Mills, Inc. (Gordon K. Brown, Trustee)	Woods Woolen Mill Company	July 31, 1956	1475/030
Gordon Woolen Mills, Inc.	Virginia B. Woods	December 28, 1944	1074/33 to 37
Hillsborough Woolen Mill Company	Gordon Woolen Mills, Inc.	November 26, 1935	942/590 to 594

3.2 Present Uses

As previously stated, the Site consists of a 2.6-acre parcel of land (Lot 28) with three structures: an old Boiler House/Room, a former Warehouse Building and an office. Only the foundation of the original mill building still remains. According to the Town of Hillsborough Assessor's Office records, the building and associated parcel of land are owned by the town. The town acquired the property via tax deed in December 2004. The Site is unoccupied and is un-useable in its present physical condition (existing solid waste debris) and due to asbestos containing material (ACM) and lead-based paint (LBP) contamination issues which have been identified. The site is presently underutilized, devalued and poses a potential threat to public safety and welfare.

3.3 Former Uses

Information on former uses was obtained from three primary sources: 1) a review of various historical books on the Town of Hillsborough and Hillsborough County, 2) Sanborn® Fire Insurance Maps dated 1929 and 1950 on file at the New Hampshire State Library in Concord, and, 3) personal interview with knowledgeable person(s) - Mr. Henry (a.k.a. Hank) Woods, former Manager and son of the owner of the former Woods Woolen Mill. Information from these three sources is summarized below:

Historical Books

Historical books reviewed which provided some information about the former mill activities included:

- *History of Hillsborough, New Hampshire 1960-2000: Story of a New Hampshire Town*, by Cynthia Van Hazinga.
- *The History of Hillsborough, New Hampshire 1735-1921*, by George Waldo Browne, 1921
- *History of Hillsborough County, New Hampshire*, by D. Hamilton Hurd, 1885.
- *The History of Hillsborough, New Hampshire 1921-1963*, by Harrison C. Baldwin.

The Hillsboro Woolen Company was started in 1880 manufacturing textiles, specifically wool. After the turn of the century, the mill was sold and the name changed to the Gordon Woolen Mill Company. Later by circa 1950, the mill was sold again and operated under the name the Woods Woolen Mill Company. The original mill had fifteen cards and sixty looms and manufactured woolen goods, suits, overcoats and cloaks. In 1880, the northern end of the mill was rented by another and used as a silk mill. Photographs of the mill dating back to the early 1900s are provided in Appendix C. In the early years of its operation, the mill was powered by river water



from the adjacent Contoocook River via energy created by the dam which was located at the southern end of the original mill building. By the middle of the 20th century (circa 1950), the mill was powered by coal which was brought in by railroad and off-loaded into bin(s) located between the Boiler Room/House and office building. After circa 1950 up until the mill closed, the mill was powered by electricity. According to historical references, the flood of 1936 took out the dam and flooded the former dyehouse and finishing rooms in the lower mill building. In 1920, the mill had approximately 175 employees and was making woolen cloth up until 1952. During the later years, many of the mill workers walked to work via the covered wooden bridge (which crossed over the Contoocook River) north of the Site. The closing of the mill in 1952 was devastating to the town as it was the main industry of the town having employed approximately 325 persons at its peak. In 1956, the machinery, tools and equipment were sold at auction to Edmund Woods at which time the mill was renamed Woods Woolen Mill and continued to manufacture wool, synthetic yarns (i.e. acrylic) and later silk textiles. By the 1950s, woolen manufacturing was greatly reduced and operations continued primarily only in the main section of the mill building (south of the Boiler House).

Sanborn Fire Insurance Maps

Sanborn[®] Fire Insurance Maps of Hillsborough, New Hampshire dated 1929 and 1950 depict the former structures associated with the former woolen mill. Copies of the 1929 and 1950 maps, both of which are relatively similar, are included in Appendix E. The original Former Hillsboro (a.k.a. Gordon and Woods) Woolen Mill complex consisted of several structures along the southern bank of the Contoocook River and West Mill Street. The original mill complex was located on present day Lots 28 and 30 and occupied approximately 3.4± acres. The main mill building, a small building labeled an “office” and Warehouse Building No. 2 were located between the railroad ROW and the river (on present day Lot 28). Two warehouse Buildings No. 3 and No. 4 were located between the railroad ROW and West Mill Street (on present day Lot 30).

As shown on the 1929 and 1950 maps, the main mill building was connected to the Warehouse Building No. 2 by several other smaller buildings which included: a Boiler Room/House, a dye house and a machine shop. The picker room was located on the second floor of the Boiler Room/House and a coal bin was located adjacent to the Machine Shop between the Boiler Room/House and the railroad tracks. According to the 1929/1950 maps, a transformer pad was located on the east side of the mill building. As shown on the Sanborn maps, the mill was serviced by a subsurface water supply line from adjacent Mill Street. The water lines ran parallel with the railroad tracks (one behind the office building) and a second which ran from the north side of the office building to the Boiler Room/House.



Interview with Knowledgeable Persons

Information about former mill activities post-1950 was obtained during an interview with Mr. Henry (a.k.a. Hank) Woods, who is the son of Edmund Wood, the former owner of Woods Woolen Mill. Hank Woods was the manager of the mill from circa 1952 until 1977. After 1952, textile manufacturing was conducted primarily in the main mill building. The first process (pickering) was performed at the southern end of the main mill building on the first floor. Subsequent finishing processes, which included carding, spinning, weaving and twisting, were performed on the second floor of the main mill building. Finished textiles, which included wool, acrylic and polypropylene, were spun onto cones and stored on the third floor of the main mill building and then shipped off in cases to large cities such as Worcester, Massachusetts and New York. The basement of the main mill building, which has a wood floor, was used for storage and also was the location of a "make-shift" machine shop. The mill also had an elevator which was located in a tower on the east side of the mill.

According to Mr. Woods, the original picker room, machine shop and dye house as shown on the 1929/1950 Sanborn® Maps were not used during post-1950 manufacturing. According to Mr. Woods, two to as many as five wooden pots (6 feet in diameter) were located in the lower level of the dye house. The dye pots were reportedly removed. Dyeing of textiles was not performed post 1950. Mr. Woods had no knowledge of former dyeing practices at the mill.

Mr. Woods indicated that the operation of the mill required the use of lubricating oils which were ordered by the drum/container on an as-needed basis from a local/area supplier. The lubricating oil was needed to keep the various machines and various pieces of equipment and hand tools (i.e. metal lathes) running properly. Empty drums/containers were taken away by the oil supplier upon delivery of a new shipment.

Mr. Woods also recalled that three large transformers were located approximately 30 feet south of the office building. He confirmed that a second old transformer was located on the east side of the mill building (but not in use) as shown on the 1929/1950 Sanborn® Map. Mr. Woods also indicated that sewage from the mill bathrooms discharged directly to the river and the sewage from the small office building was connected to Mill Street. After 1977, the mill operated for a couple more years and closed circa the mid 1980s when it was again repeatedly sold (See Section 3.1).

3.4 Historic Environmental Investigations

Following site abandonment by the former property owner in circa 1999, DES and EPA conducted preliminary response actions to address and remediate immediate public safety



hazards at the site. Preliminary response actions conducted at the site included: drum inventory and removal from inside the buildings, ACM removal from inside a portion of the boiler house and removal of a fuel oil underground storage tank (UST). A summary of preliminary response actions are described below:

3.4.1 Lead and Asbestos Survey, September-October, 1999

In 1999 prior to demolition of the mill buildings, Joseph Griffiths of Hill Mill Realty (the property owner at the time) contracted the Scott-Lawson Group, Ltd. (SLGL) of Concord, New Hampshire to perform an asbestos and lead survey of the property. The survey included analytical testing of bulk samples (total of 40) for asbestos-containing material (ACM) and testing of red wood clapboard for lead-based paint (LBP) from the various buildings. The survey also included a cost estimate for abatement of ACM and LBP. A copy of SLGL's report is provided in Appendix F.

SLGL identified asbestos-containing building materials (ACBM) in the form of thermal system insulation, roofing materials, electrical insulation paper, cement board panels (Transite®) and window glazing in various locations of the main mill building and the adjacent warehouse (storage) building. ACM, identified as friable chrysotile, was found on piping and tanks in the Boiler House. The general condition of the ACM was rated as fair or fair-poor. In 1999, SLGL's cost to abate ACM in both the main mill building and the storage buildings was estimated to be between \$39,300 and \$75,850.

LBP was identified on most of the exterior surfaces and in the interior of the main mill building. Paint chip samples of red, brown/black and dark green paints were collected and tested for lead. Lead concentrations ranged between 500 and 61,406 milligrams per kilogram (mg/kg) or 1% and 6.1%. Three of the samples exceeded the State of New Hampshire HUD guideline for lead of 0.5%. Testing of the red-paint chip (from exterior locations) was also tested for leachable lead by the Toxicity Characteristic Leaching Procedure (TCLP). The TCLP-lead result in the red-paint chip sample was 115 micro grams per liter (mg/l), which was above the hazardous waste threshold of 5 mg/l as regulated under the Resource Conservation and Recovery Act (RCRA).

3.4.2 Drum Inventory and Removal, September 1999-December 2000

In 1999, the DES Waste Management Compliance Bureau conducted a site visit to assess the property/site for various waste management issues. Members of the department conducted a survey through interior portions of the mill building (which in 1999 was still standing) and the adjacent warehouse building. Waste issues identified included: large quantities of demolition debris, ACM, chemical wastes in containers and drums, and a No.6 oil UST, which was no



longer in-use. Several 5-gallon empty pails of roofing cement were identified on the east wall of the first floor of the mill. Several containers and drums ranging in size from 5-gallon pails to 55-gallon, were identified in the mill building. In total, 37 drums were identified: 12 in the basement and 25 on the first floor. The DES inventoried and labeled all the containers/drums and their contents as either unknown, petroleum or a hazardous substance.

On December 20, 2000, the DES in conjunction with the EPA conducted a final inventory of drums at the property. In total, 53 drums were identified: 15 hazardous substances, 27 oil and water and 11 empty. Hazardous substances identified included 1,1,1-Trichloroethane or TCA and sulfuric acid. The 27 oil and water drums (1,430 gallons) were removed by the DES as state-regulated waste in conjunction with 529-gallons of sludge from the 10,000-gallon No.6 oil UST. The remaining 15 drums containing hazardous wastes were removed by EPA in conjunction with friable asbestos that was identified in the boiler house. It is unknown if the wastes were associated with the operations conducted at the mill buildings or placed there by former owners or unauthorized persons. In general, the chemicals found would not typically be associated with textile operations. Copies of the drum inventory record sheets are provided in Appendix F.

3.4.3 ACM Sampling and Removal, October 2000-2001

In October 16, 2000, the DES contracted SLGL to conduct additional asbestos sampling inside the Boiler Room/House. Ten samples were collected from various locations around the package boiler (Sample #1), the center boiler (Samples #2 through #6) and the side boiler (Samples #7 through #10). Sample #3 (insulation behind steel face of center boiler) and Sample #9 (insulation behind steel face of side boiler) contained 50% chrysotile asbestos. A copy of the October 16, 2000 sampling data results, a map showing sampling locations and the analytical laboratory report is provided in Appendix F. According to documents in the DES site file, EPA conducted the removal of the friable ACM from the boiler room. In total, two roll-off containers of ACM were removed from the site and disposed of at the town landfill. The DES required ACM disposal to the town landfill as per an approved asbestos disposal plan. The ACM was buried with the footprint of the landfill and capped in conjunction with landfill closure activities.

3.4.4 UST Removal, December 2000

The unregistered 12,000-gallon single wall No. 6 fuel oil UST (UST ID#0-115155), which was previously identified during an inspection of the property by DES in 1999, was removed from the ground on December 22 and 26, 2000. The UST was removed by Franklin Environmental Services under the oversight of Ralph Wickson of the DES Hazardous Waste Remediation Bureau. The 12,000-gallon No. 6 fuel oil UST was located between the boiler house and the warehouse building on the west side of the abandoned railroad ROW.



Activities conducted included: confirmatory sampling of the oil/sludge from inside the tank for disposal characterization 2) evacuation of 529 gallons of No.6 fuel oil and sludge/sediment from inside the tank, and, 3) excavation and disposal of the UST and associated metal piping, 4) backfilling of the excavation with 84 tons of clean sand to surface grade. According to DES closure report, the tank appear to be in fair condition, surface pitting and a ¼-inch diameter hole were observed in the bottom center of the tank, no petroleum odors were noted in soil above or below the tank, no positive readings in soil headspace using a photoionization detector (PID) were measured and no free product or groundwater encountered.

In total, five composite soil samples were collected from the excavation, including one from a localized area of stained soil at the bottom of the excavation. Samples were analyzed for VOCs by EPA Method 8260 (5035 methanol preserved), PAHs by EPA Method 8270 and total petroleum hydrocarbons (TPH) by EPA Method 8015 –diesel-range organics (DRO) only. One soil sampled tested for TPH (3,300 mg/kg) was below Method 1 standards of 10,000 mg/kg. The UST removal was assigned Site# 199909015 by the NDHES. In summary, based on the above described findings, the DES concluded that a discharge of petroleum has not occurred to either groundwater or surface water and that no additional investigation or remedial measures were warranted. The DES issued no further action (NFA) status to the site under DES#199909015 in March of 2001. Copies of UST closure-related documents are provided in Appendix F.



4. PHYSICAL AND ENVIRONMENTAL SETTING

4.1 Topography

Based on a review of the USGS 7.5-minute series topographic map for Hillsborough Upper Village, New Hampshire Quadrangle, 1987 (revised 1998), the Site is situated approximately 580 feet above mean sea level. Site topography slopes downward in a general east-west direction from West Mill Street (Elevation = 590 feet) to the Contoocook River (elevation = 585 feet). The elevation along the ROW (general north-south direction) is approximately 580 feet msl.

4.2 Floodplain

Based on the Flood Insurance Rate Map (FIRM), for Hillsborough, New Hampshire, Hillsborough County, Community Panel No. 33009000020B, dated June 15, 1979, the Site is located within a Zone A11 and B. Zone A11. The portion of the property adjacent to the river (west side) are zoned as "A11" which means the site is within the 100-year flood plain and is considered a high risk area for flooding. Areas with Zone A have a 1% chance of flooding each year and have a 26% chance of flooding over a 30-year (mortgage) period. The base flood elevations (BFE) range from 587 feet (NGVD) adjacent to the property, to 583 ft NGVD on the west side of Bridge Street to 570 ft NGVD on the east side of Bridge Street further downstream along the river. The portion of the property adjacent to West Mill Street (east side) is zoned as "B" is located outside the 100-year floodplain and is considered a moderate to low risk area for flooding. A copy of the appropriate portion of the FIRM panel is included in Appendix G.

4.3 Wetlands

The State of New Hampshire Surface Water Regulations (Env-Ws 1702.53) defines wetlands as "*an area that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal conditions does support, a prevalence of vegetation typically adapted for life in saturated soil conditions*". Wetlands include, but are not limited to, swamps, marshes, bogs and similar areas.

Based upon a site reconnaissance and as indicated in the *2004 Haley & Aldrich Slope Alternatives Report*, a wetland area is located along the Contoocook River adjacent to the southern end of the former Main Mill Building near the bridge abutment.



4.4 Groundwater and Surface Water

In New Hampshire, all groundwater is classified as GW-1 and is considered to be potentially used as a source of drinking water and is required to meet Ambient Groundwater Quality Standards (AGQS) as regulated under Env-Ws 1403.05. Groundwater may be classified as GW-2 (potential source of indoor air contamination) if seasonal depth to groundwater is less than 15 feet below grade and contaminants (if present) are within 30 feet (for petroleum sites) or within 100 feet (for VOCs) of an occupied structure. The predominant direction of groundwater flow at the Site is inferred to be westerly/northwesterly toward the adjacent Contoocook River. This direction is consistent with local site topography which slopes downward in elevation from West Mill Street towards the river.

The nearest surface water body is the Contoocook River, which abuts the Site to the west. The Contoocook River flows in a generally easterly direction past the Site and merges with the Merrimack River in Penacook, New Hampshire. The Merrimack River flows south/southeasterly and ultimately discharges into the Newburyport Harbor in Massachusetts and into the Atlantic Ocean. Based on DES site file document, the Contoocook River is classified as a Class B water body. In New Hampshire, Class B is "*of the second highest quality*" and "*shall have no objectionable physical characteristics*". Requirements for Class B surface water are listed in Env-Ws 1703.03. According to the New Hampshire Geographically Referenced Analysis and Information Transfer System (GRANIT), the Contoocook River and most of the surface waters bodies in the town of Hillsboro are located within the Surface Water Protection Area for the Pennichuck Water Company. The nearest water supply well operated by the Pennichuck Water Company is located more than 1 mile southwest of the property.

4.5 Geology

Information on the surficial and subsurface geology near the Site was obtained from the following four sources:

- *Bedrock Geologic Map of New Hampshire*, 1997, by John Lyons, Wallace A. Bothner, Robert Moench, and James B. Thompson, Jr.
- *The Bedrock Geology of the Hillsboro Quadrangle, New Hampshire*, 1981, by Dennis L. Nielsen, Bulletin No. 8.
- *Surficial Geologic Map of New Hampshire*, 1950 by Goldthwait and Meyers.



- *Permanent UST Closure Report for DES#199909015/UST ID #0-115155 (Woods Mill Site-Former Beck Mill Trust Property)*, February 8, 2001, by Ralph Wickson, DES Hazardous Waste Remediation Bureau.

Bedrock Geology

The Hillsborough Quadrangle is located within a highly deformed and metamorphosed belt within central New Hampshire and is part of the northern Appalachian Mountain system. The town of Hillsborough is located within and near the central axis of the Merrimack synclinorium, a highly deformed sedimentary (depositional) structural basin containing rocks of Silurian-Lower Devonian age (≈ 443 to 386 million years old). Most of the rocks in the region have been mapped as consisting of five large plutonic rocks or "plutons" (i.e. Antrim, Cardigan, Clinton-Grove, Deering, Henniker and Massasecum) of the New Hampshire plutonic series. During Lower Devonian time, the plutons intruded older meta-sedimentary rocks of the Littleton Formation. Based on the state bedrock map (Lyons et al, 1997), the bedrock beneath the site is mapped as that of the Antrim Pluton (bg_d) which is classified as a medium to coarse grained biotite granodiorite with a composition varying from biotite granodiorite to biotite-muscovite granite indicative of low-grade metamorphism. Common minerals in the rock include: quartz, oligoclase-andesine, microcline perthite, biotite and some garnet.

Surficial Geology

According to Nielsen (1981), areas underlain by plutons form a large valley which has been filled with sands and gravels of Pleistocene outwash. This is consistent with surficial geology as mapped by Goldthwait (1950). Native surficial soils at the Site are expected to consist of stratified drift and/or glacial outwash, characterized by alternating layers of sand and gravel and sand and silt overlying other glacially-derived soils (either varved clays or possibly till). Uppermost surface and shallow subsurface soils at the site are expected to consist of non-native fill materials which would have been brought to the property during construction of the railroad line which transects the site. In addition, DES during UST removal activities in December 2000 (See Section 3.4.4) described surface soils (to 10.5 feet below grade) as consisting of medium brown to dark brown sandy soil with trace gravel and silt.

4.6 Proximate Commercial and Industrial Sites

As per the standard, environmental sources shall be reviewed not only for the subject Site, but for facilities and sites within a minimum search distance from the Site. For each database reviewed, the minimum search distance as recommended by ASTM guidance was used. The information regarding the environmental condition of the surrounding properties must be



considered in assessing the environmental condition of the Site. The assessment must evaluate the potential for the migration of hazardous substances or petroleum products from off-site sources onto the Site or associated property.

The site is located on the west side of West Mill Street which is zoned as being within the town's Central Business District (CBD). Properties within this zone are used for commercial purposes. Residential use is also allowed with the CBD and does occur within this zone. The property north of the subject property (Lot 30), which was also an old mill building, is currently used a self storage facility (light commercial purposes) and also for residential purposes by the property owner. Further down on West Mill Street both to the north and south (to the Deering town line), the properties are primarily residential. To the east/southeast, the area is zoned as residential. There are no commercial and/or industrial properties located near the subject property/site that would have a potential detrimental impact on the subject property/site.

4.7 Records Review

A thorough file investigation was performed at the local and state environmental agencies in an attempt to obtain information regarding past facility operations and the potential for these operations to impact the environmental condition of the Site. The file investigations also included facilities and properties located within 0.25-mile of the Site. File reviews for facilities and properties within the 0.25-mile radius were performed to identify and assess the likelihood for adverse impacts associated with migrating hazardous substances from off-site sources. The file reviews were supplemented with interviews of town officials and knowledgeable person(s) in an effort to present a complete record of the environmental condition of the Site.

LEA also reviewed the Environmental First Search Report dated October 12, 2006, which searched the available archives for various sources of published information including, Sanborn® Fire Insurance Maps, and historical books. Available resources were reviewed at the town and state libraries and the DES. A copy of the Environmental First Search Report is included in Appendix H.

4.8 Environmental Database

The Environmental First Search Report documents available environmental records as maintained by federal and state agencies. The information includes listings for all records maintained by the State of New Hampshire (DES) and federal government (EPA) and included the following databases: National Priorities List (NPL) or superfund sites and de-listed sites, Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS), including CERCLIS-No Further Response Action Proposed (NFRAP), RCRA,



including Corrective Action (RCRA-COR ACT), Transportation and Disposal Facilities (RCRA-TSD), RCRA generators (RCRA-GEN) Emergency Response Notification System (ERNS) and the following state lists (sites, spills, solid waste landfills, leaking underground storage tanks or LUSTs, registered underground and above-ground tanks (USTs and ASTs). The searches were done using the recommended radii as per ASTM guidance. In total, 72 listings were identified: 43 geocoded (by address) and 29 non-geocoded (which have no address). The following sections summarize the findings of the databases search.

4.8.1 CERCLA List

The site/property under the name "Woods Woolen Mill" located at 25 West Mill Street is listed as "closed" or NFRAP on CERLCIS under the number NHD986467777 as of July 25, 2006. The database report indicates that non-NPL assessment and removal was conducted and financed by the EPA.

4.8.2 RCRA Sites

Four (4) RCRA-GEN properties (2 within 1/8-mile radius and 2 within 1/4-mile radius) were identified to be within 1/4-mile radius of the Site. The Resource Conservation and Recovery Information System (RCRIS) list identifies properties which generate, transport, store, treat and/or dispose of hazardous waste as defined by RCRA. The properties identified on the RCRA-GEN list are indicated below.

RCRA-Generators Within 1/4-Mile Radius

Name	Location	Approximate Distance	Size	RCRA ID No.
Former Frameworks, Inc.	Mill Street	0.10 Northeast	SQG	NHD027698081
Thomas Bara	59 West Main Street	0.11 Northwest	VGN	NHD510167067
New England Kustom & Collision	18 Main Street	0.13 Northwest	VGN	NHD500012323
Premier Printing	67 West Main Street	0.14 Northwest	VGN	NHD500015482

Note: All properties are within Hillsborough, New Hampshire. SQG = Small Quantity Generator; VGN = Very small quantity generator

Frameworks (which is/was the closest to the site) was a small quantity generator (SQG) of RCRA hazardous waste, specifically electric lamp bulb and parts manufacturing waste. In May-June 1984, Frameworks was issued an informal violation and was given 120 days to resolve. The violation was resolved in July 1984. Frameworks waste stream includes both spent non-halogenated solvents (i.e. toluene, xylenes, acetone, MEK, carbon disulfide) and halogenated solvents (i.e. PCE, TCE, methylene chloride, 1,1,1-TCA), carbon tetrachloride as wells as



chlorinated fluorocarbons (CFCs). The former Frameworks property is now used for residential purposes. The other three RCRA-Gen properties (Thomas Bara, New England Kustom & Collision and Premier Printing) are not considered to have any impact on the property because of their location across the Contoocook River.

4.8.3 ERNS Sites

Four properties (1 within a ¼-mile radius of site and 4 non-geocoded with no location) were identified to be on the ERNS list. The ERNS list is maintained by the EPA and documents and stores information on reported releases of oil and hazardous substances made known to the federal government. The properties listed on the ERNS list are identified below.

ERNS Sites Within ¼-Mile Radius

Name	Location	Approximate Distance	Summary of Report
Former Beck Woolen Mill	25 West Mill Street	Site-	Report of petroleum wastes on-site.
Consolidated Hydro, Inc.	No Location	Not-Mapped	Fixed Facility D60268
Consolidated Hydro, Inc.	Hosiery Mills Hydro Co., No Location	Not-Mapped	Fixed Facility 470947
Cyn Environmental Service	No Location	Not-Mapped	Unknown
PSNH	Route 202	Not-Mapped	Fixed Facility 215869

Note: All properties are within Hillsborough, New Hampshire. (-) indicates subject property/site.

The site (which was previously known as the Former Beck or Woods Woolen Mill) was listed under the ERNS in October 2000 due to notification by an unidentified caller that reported petroleum waste was being stored in 55-gallon drums at the property. In response, the DES and EPA had taken control of the drums (See Section 3.4.2).

4.8.4 State Hazardous Waste Sites

Seventeen (17) properties were identified as being on the Groundwater Hazardous Waste Inventory Sites List within a one-mile radius of the site. This list is maintained by the New Hampshire Department of Environmental Services (DES) Waste Management Division and Groundwater Protection Bureaus. Approximately ten of the total properties are located within ½-mile radius of the property/site and are listed below:

State Groundwater Hazardous Waste Inventory Sites Within ½-Mile Radius

Name	Location	Approximate Distance	DES Site Number
FMR Woods Woolen Mill	25 West Mill Street	-	#199909015
Donald LaRochelle Property	52 Bridge Street	0.16 Northeast	#199708032
Wing Residence	14 Summer Street	0.18 Southeast	#200602030
Robert Peters	22 Church Street	0.20 Northwest	#200203031
Penney Property	14 School Street	0.24 Northeast	#200312058
Titcomb Property	45 Myrtle Street	0.29 Northwest	#200402021
Beatrice Connor	2 Whittemore Street	0.44 Northeast	#200508053
National Guard Armory	140 Route 202	0.48 Southwest	#1999008037
Whitney Residence	51 Preston Street	0.50 Northeast	#200404034
Hillsboro-Deering Middle School	4 School Street	0.50 Northwest	#199601024

Note: All properties are within Hillsborough, New Hampshire. (-) indicates subject site/property.

The site is listed on the New Hampshire Groundwater Hazardous Waste Inventory Sites list and is identified as DES Site#199909015. Two other sites, the Donald LaRochelle Property (DES Site#199708032) and Wing Residence (DES#200602030), are both located on the south side of the Contoocook River. The other sites listed above are located on the north side of the Contoocook River.

4.8.5 State Spill Sites

Eighteen (18) properties were identified to be on the New Hampshire Hazardous Material Spills List within ¼-mile radius of the site. This list is maintained by the New Hampshire Office of Emergency Management (NHOEM). Only one of the spills is within ⅛-mile radius of the site – Kustom & Collision (NHSP-0203-1-71) at 22 West Main Street reported a 10-gallon spill of acetone on March 7, 2002. This spill site is located 0.12 northwest of the site and is across the Contoocook River. The locations of the other seventeen spills are not mapped therefore their distance in relation to the site is not known.

4.8.6 State Solid Waste Landfills

Two (2) properties were identified to be on the New Hampshire List of Municipal Operating Solid Waste Landfills within ½-mile radius of the site. This list consists of a database of compost facilities, transfer stations, incinerators, and material recovery facilities. The Hillsborough Municipal Landfill/Transfer Station (DES Site#198704088) on Dump Road (off of Main Street) which is not mapped in the database report is located more than 1-mile northwest of the site across the Contoocook River. The second solid waste landfill (Tada Dump Road in Holderness)



in the database report appears to be incorrect based on the zip code entry which does not match the town name.

4.8.7 State Leaking Underground Storage Tank List

Nine (9) properties were identified to be on the New Hampshire Leaking Underground Storage Tanks (LUST) List within ½-mile radius of the subject property/site. A list of properties identified as LUST sites is presented below.

State LUST Sites Within ½-Mile Radius

Name	Location	Approximate Distance	DES Site Number
FMR Gables Realty	61 West Main Street	0.12 Northwest	#199907057
Belangers Gasoline	18 Main Street	0.13 Northwest	#199707015
Hillsboro Sunoco	22 Henniker Street	0.20 Northeast	#198904015
Contoocook Valley Telephone	25 School Street	0.21 Northeast	#199501043
JB Vaillancourt Office	3 Henniker Street	0.23 Northeast	#199504016
Najibs Plaza	5 Henniker Street	0.27 Northeast	#199407060
Cumberland Farms	60 Henniker Street	0.42 Northeast	#199812218
National Guard Armory	140 Route 202	0.48 Northwest	#199008037
Hillsboro-Deering Middle School	School Street	0.50 Northwest	#199601024

Note: All properties are within Hillsborough, New Hampshire

All of the above-listed LUST sites are located on the other (north) side of the Contoocook River. The Former Gables, the Contoocook Valley Telephone and the National Guard Armory LUST sites are listed as closed. Belangers Gasoline Site is still open and has a Risk Level of 6. Hillsboro Sunoco and Najibs Plaza are open and are being managed under a groundwater management permit.

4.8.8 State Registered USTs and ASTS

Fourteen (14) properties identified as being on the New Hampshire Registered Above- and/or Underground Storage Tanks (ASTs and USTs) List with ¼-mile radius of the site. Three properties are listed within a ⅛-mile radius and seven properties are listed within a ¼-mile radius. A list of properties with registered ASTs or USTs are presented below.

State Registered UST/AST Sites Within ¼-Mile Radius

Name	Location	Approximate Distance	Facility/Tank ID	Tank(s) Status
FMR Woods Woolen Mill	25 West Mill St.	-		UST Removed
Don McCulloch	35 West Main St.	0.10 Northwest	#0115513	UST Closed in Place
FMR Gables Realty	61 West Main St.	0.12 Northwest	#0113439	UST Removed
Belangers Gasoline	18 Main Street	0.13 Northwest	#0111346	Several USTs Removed
Contoocook Valley Bible Chapel	Main Street	0.15 Northeast	#0112786	UST Removed
Withington Block	Main & School St.	0.19 Northeast	#0111957	UST Removed
Hillsboro Sunoco	22 Henniker St.	0.20 Northeast	#0110384	Several USTs Removed
Contoocook Valley Telephone	25 School St.	0.21 Northeast	#0220568	UST Removed
Hillsborough Fire Station	Central St.	0.22 Northwest	#0113819	UST Removed
JB Vaillancourt	3 Henniker St.	0.23 Northeast	#0110072	UST Removed

Note: All properties are within Hillsborough, New Hampshire

The site under the name former Woods Woolen Mill was registered as having two single-wall steel, No. 2 heating oil USTs - one 2,000-gallon and one 12,000-gallon. The 2,000-gallon UST was removed in September 1998 and the 12,000-gallon UST was removed in December 2000. Belangers Gasoline (18 Main Street), Hillsboro Sunoco (22 Henniker Street) and JB Vaillancourt (3 Henniker Street) properties all have had several large single-walled gasoline and diesel USTs removed from the ground. A 15,000-gallon fiberglass gasoline UST is presently in-use on Belangers Gasoline property and an 8,000-gallon fiberglass gasoline UST is presently in-use on the Hillsboro Sunoco property. No USTs are currently in-use on the JB Vaillancourt property. Except for the site, all the registered tank properties listed above (as well as the Hillsborough Post Office on Main Street, Leo's Grocery on Henniker Street, Page Auto Service on Main Street and PSNH Jackman Substation on Sawmill Road properties which are not mapped) are located on the north side of the Contoocook River.

4.9 Town File Reviews

Site information about historical and present uses was obtained from several local town departments. Most of the site information was obtained from the Hillsborough Water and Sewer Department, the Selectmen's Office (also the office of the town clerk, assessor and business administrator), the Planning Department and the Fire Department. Information from these sources was previously discussed in Section 2.0. Copies of all documents obtained from a review



of town files are attached in Appendices A through D. The following departments and persons were contacted:

Summary of Town Departments Contacted

Department/Office	Contact Person	Information
Selectmen's Office	Iris Campbell, Secretary	Property Tax and Record Cards
Planning	Matt Taylor, Town Planner	Historical photos, zoning, FIRM Maps
Water & Sewer	Penny Griffin, Secretary	Water Supply & Sewer Information
Fire	Kenny Stafford, Inspector	AST and UST records
Library and Historical Society	Tammy McClure, Head Librarian	Historical Books and Document

Selectmen's Office: This office maintains the records of several departments, which include: business administrator, clerk, tax assessor and Board of Health. This office provided LEA with copies of the property/building record cards and copy of the current tax map of the parcel (Map 25, Lot 28) and a copy of the current property ownership documents.

Planning Department: Historic photos and information on zoning and flood information were obtained from the office of the town planner.

Water & Sewer Department: The water and sewer department was contacted to confirm water and sewer information and usage on the Site and to confirm water information as shown on the 1929 and 1950 Sanborn® Fire Insurance Maps. Ms. Penny Griffin, on behalf of the water and sewer commissioners, indicated that the subsurface water lines on the historic maps were correctly shown.

Fire Department: The town fire department was contacted for above and/or underground storage tank (AST/UST) usage information via telephone information. Inspector Ken Stafford indicated that the only records the department had consisted of correspondence letters between the town police and fire departments regarding issues pertaining to electricity, trespassing and vandalism (i.e. broken glass and windows) by children. LEA inquired about records pertaining to the former heating oil USTs. Inspector Stafford indicated the department had no record in their current file.

Town Library: Historical information found in town library records were the same as those found in the state library records, which included historical books on the town of Hillsborough and Hillsborough County. Ms. Tammy McClure, the head librarian, indicated that neither the town library nor the historical society maintain or ever had any historical records about former mill operations.

4.10 State Agency File Reviews

LEA representatives conducted a review of the files and maps maintained by the DES Waste Management Bureau on October 16, 2006. Files selected for review were based on the findings of the Environmental Database Report (See Section 4.8 above and Appendix H). Based on their location and distance to the property/site, the following three files were reviewed:

<u>DES Site Number</u>	<u>Site Name</u>	<u>Address</u>
#199708032	Donald LaRochelle Property	52 Bridge Street
#199909015	FMR Woods Woolen Mill	25 W. Mill Street
#200602030	Virginia Wing Residence	14 Summer Street

A brief summary indicating information on each of the above state-listed sites is provided below.

LaRochelle Property (DES Site#199708032) – This petroleum release occurred in 1997 at a residential property approximately 0.16 northeast of the subject property/site. The release was for an unknown volume of No. 2 fuel oil, which occurred as a results of an overfill of two 275-gallon ASTs in the basement of the house during delivery. The spill/release resulted in an impact to soil. Approximately 23 cubic yards of soil excavated and disposed off-site. This site was closed and DES issued a Certificate No Further Action (NFA).

FMR Woods Woolen Mill (DES#199909015) – Information reviewed in the state files included several historical investigations which were detailed in Section 3.4 of this report. In addition to the past investigations, several newspaper articles about the former mill, property title search records, and several legal documents pertaining to actions undertaken by the town and the NHDOT against the former property owner to clean up the property were contained in the file. The site is currently listed as closed.

Virginia Wing Residence (DES#200602030) - This petroleum release occurred in 2006 at a residential property approximately 0.18 southeast of the subject property/site. According to the site file, an unknown volume of No.2 fuel oil was released from a 500-gallon UST or supply line to soil and groundwater. The UST and approximately 13.4 tons of contaminated soil was removed and transported under a bill of lading to ESMI in Loudon for off-site disposal. PID readings in soil measured between 5 and 6 ppmv. Soil samples from the sidewalls and pit bottom were sampled and analyzed for various petroleum constituents. Contaminants detected in soil included: TPH (46.3 to 63.4 mg/kg), total alkylbenzenes (1.059 mg/kg and naphthalene (0.473 mg/kg). Contaminants detected in groundwater included: naphthalene (105 microgram per liter or µg/L), total alkylbenzenes (212 µg/L) and benzene (1.7 µg/L). DES is still evaluating the



corrective action requirements for this site and thus the site under #200602030 has not been closed.

4.11 Federal Agency Reviews

A Freedom of Information Act (FOIA) request was transmitted to the EPA Region I in Boston, Massachusetts on October 13, 2006. The FOIA request covered all records maintained by the various branches of the EPA on the Site and surrounding facilities within a 0.25 mile radius, including documents withheld from public record to be identified by subject, author, and reason for claim of privilege. LEA received a letter from the EPA indicating that our request was received. In the event information is received which bears relevance to this assessment, this report will be amended to include such information. A copy of the FOIA request and EPA response letter are included in Appendix I.



5. POTENTIAL SOURCES OF CONTAMINATION

LEA has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice 1527-05 (November 2005 version) of the subject property/site, identified as the Former Woods Woolen Mill (Map 25, Lot 28). The purpose of the assessment was to identify any *Recognized Environmental Conditions (RECs)* which indicates the presence or likely presence of hazardous substances or petroleum products could have potentially resulted in an existing release, past release, or material threat of release into structures on the property or into the subsurface. This assessment has revealed the following RECs (hereinafter referred to as Areas of Concern or AOCs):

AOC-1: Former Railroad ROW - The ROW was the location of the former B&M railroad. Potential contaminants within this area include: petroleum, PAHs and metals. In addition, herbicides and/or pesticides attributed to former spraying practices may be present in surface soils both within and in areas alongside the ROW.

AOC-2: Warehouse Building No. 2 - Several rusty 55-gallon drums were observed inside the building and may be indicative of past usage and/or storage of petroleum and/or chemicals containing hazardous substances. The presence or absence of contents of the drums could not be ascertained.

AOC-3: Former Machine Shop - Based on the past use of this former (pre-1950s) structure, potential contaminants within this area include petroleum and oil and grease which are often associated with machine shops.

AOC-4: Former Dye House - Based on the past use of this former (pre-1950s) structure and the existence of several dye pots on the bottom floor of this structure, potential contaminants within this area may include dyes which contained heavy metals.

AOC-5: Former Coal Bin and UST Area - This former (pre-1950s) structure was associated with former heating of the old mill. Potential contaminants within this area include contaminants associated with coal (PAHs) and possibly petroleum associated with historic long-time use of the adjacent former railroad line. A 12,000-gallon #6 fuel oil tank was removed from near the northeast corner of the Boiler House. This UST was removed, assessed and remediated by the DES. All environmental issues pertaining to the 12,000-gallon UST are considered closed. A second UST (a 1,500-gallon #2 fuel oil) was also removed from the site, but the former location of this tank is unknown. Potential residual contamination associated with this UST may exist.

AOC- 6: Former Transformer Areas - A transformer pad was located on the east side of the concrete pad of the former Mill Building. Transformers were also reportedly located south of the office building. The historic use of transformers, which may have contained oil with PCBs, may be a potential source of contamination.



AOC-7: Former Mill Building/Foundation – According to site records, several drums and pails of roofing cement were stored and later abandoned inside the mill building. Staining was observed by LEA on some concrete surfaces within the foundation. Although the drums and pails of material were removed, potential impacts to underlying soils and/or groundwater exist. Based on the DES drum inventory data and the EPA removal action conducted, potential contaminants include: petroleum, VOCs (including solvents), and oil and/or grease.

Three other auxiliary environmental issues were identified to exist at the Site. These include, 1) the presence of ACM associated with building materials (roofing tiles, wall boards and insulation) in both the Boiler House/Room and Warehouse Building, 2) the presence of LBP associated with the red paint on the wood clapboard siding, and extensive amount of building debris related to past building demolition by the former property owner, and, 3) continuing deterioration of existing structures (primarily the Boiler House/Room and Warehouse Building) resulting in pile up of large quantities of surface debris. The latter condition which is a major obstruction at the Site impedes any comprehensive assessment of surface ground and subsurface conditions. In addition, fallen building materials (both in interior and exterior locations) are commingled with ACM and LBP-contaminated debris in many areas.



6. SUMMARY OF FINDINGS AND CONCLUSIONS

Based on LEA's reconnaissance, potential sources for the release of oil and/or hazardous material (OHM) are present at the Site. Potential sources visually observed include: the red clapboard siding with LBP, ACM inside structures (Warehouse Building and in Boiler Room/House), petroleum staining observed on and along concrete within the foundation of the Mill and other spills/releases which may be associated litter and debris disposed at the property due to the unrestricted access and lack of site control.

Potential sources for the release of oil and/or hazardous substances to soil and groundwater exists from the above mentioned sources as well as from former use of the property for textile manufacturing activities and railroad-related activities along the former railroad ROW. Due to the proximity of the river which abuts the site to the west, the potential for a release of oil and/or hazardous material to surface water, pore water and sediment also exists.

Based on the information presented herein, LEA concludes that activities or operations have been conducted on the Site that have the potential to adversely impact soil and/or groundwater quality at the site. The locations at which these activities or operations were conducted have been identified within the report as AOCs. Subsurface investigations including the collection and physical analysis of samples of soil and groundwater would be necessary to support a determination that the operations or activities have, in fact, adversely impacted soil and/or groundwater quality at the Site.



7. REFERENCES

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