REMOVAL PROGRAM
PRELIMINARY ASSESSMENT REPORT
FOR THE
ZONOLITE/W.R. GRACE FACILITY SITE
EASTHAMPTON, HAMPSHIRE COUNTY, MASSACHUSETTS
10 FEBRUARY 2009

Prepared For:

U.S. Environmental Protection Agency
Region I
Emergency Planning and Response Branch
1 Congress Street, Suite 1100
Boston, MA 02114-2023

CONTRACT NO. EP-W-05-042

TDD NO. 01-08-11-0009

TASK NO. 0487

DC NO. R-5385

Submitted By:

Weston Solutions, Inc.
Region I
Superfund Technical Assessment and Response Team III (START)
3 Riverside Drive
Andover, MA 01810

April 2009

TABLE OF CONTENTS

I. Preliminary Assessment Form

EPA REGION I
REMOVAL PRELIMINARY ASSESSMENT

Site Name and Location

Name: Zonolite/W.R. Grace Facility **Location:** 19 Wemelco Way
Town: Easthampton **County:** Hampshire **State:** Massachusetts

Site Status: **( ) NPL** **(√) NON-NPL** **( ) RCRA** **( ) TSCA**
(√) ACTIVE **( ) ABANDONED** **( ) OTHER**

(√) Attached USGS Map of Location **(√)Site I.D. No.:** 01FK

Latitude: 42º 15′ 13.7″ North **Longitude:** 72º 41′ 24.8″ West

Referral

( ) Citizen **( ) City/Town** **(√) State** **( ) Preremedial**
( ) RCRA **( ) Other:**

Name of referring party: Massachusetts Department of Environmental Protection (MassDEP), Western Region
Telephone: (413) 784-1100
Address: 436 Dwight Street, Springfield, Massachusetts 01103

Contacts Identified

1) Lisa Jones **Telephone:**(413) 755-2248
2) **Telephone:**( )
3) **Telephone:**( )

Source of Information

(√) Verbal: 10 February 2009. Meeting with representatives of MassDEP; U.S. Environmental Protection Agency (EPA); Massachusetts Highway Department (MHD); Weston Solutions, Inc. (Weston); Tighe & Bond; Easthampton Planning Department; O'Reilly, Talbot, and Okun; Oldon Limited Partnership; and Shatz, Shwartz, and Fentin. Topics discussed included analytical sample results, remediation approaches, and future plans for the site.
(√) Report: Massachusetts Department of Public Health (MA DPH), Center for Environmental Health, Environmental Toxicology Program, under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). 2006. Health Consultation, Former Zonolite Facility. 15 December.

Source of Information (Concluded)

(√) Other: Analytical sampling data, along with EPA, Weston, and MassDEP correspondences, were reviewed.

Potential Responsible Parties

Owner: Oldon Limited Partnership **Telephone:** (413) 478-5984
Address: 630 Silver Street 3c, Agawam, Massachusetts 01001

Operator: WR Grace & Company **Telephone:**( )
Address:

Site Access

Authorizing Person: Duly authorized representative Timothy Mulhern of Shatz, Schwartz, and Fentin, on behalf of Oldon Limited Partnership.

Date: 21 January 2009	**(√)Obtained**	**( )Verbal**
Telephone: (413) 737-1131	**( )Not Obtained**	**(√)Written**

Historical Preservation

( ) Site is Historically Significant or Eligible for Historic Preservation

Contacts Identified

1) State Historical Preservation Officer (SHPO)
Name: Ms. Brona Simon **Telephone:**(617) 727-8470
2) Tribal Historical Preservation Officer (THPO)
Name: **Telephone:**( )

Comments: The site is characterized as not being historically significant by the Massachusetts Historical Commission.

Physical Site Characterization

Background Information: The Zonolite/W.R. Grace Facility site (the site) is a 2.5-acre property located at 19 Wemelco Way in a mixed residential and commercial area of Easthampton, Hampshire County, Massachusetts (MA). The site consists of the former Zonolite Company (Co.) facility plant building, a large paved parking lot located along the northwestern side of the building, and a portion of an inactive rail line that runs northeast-to-southwest along the southern edge of the site. A path from the rail bed leads to a nearby residential area. A high pressure underground gas line bisects the site to the northeast of the former plant building. The site is bordered by Wemelco Way to the west, D.O.S. Concrete Construction Company to the north, the former rail line to the south, and a hayfield to the east. An unnamed stream is located along the eastern edge of the property.

Physical Site Characterization (concluded)

The nearest residences are located within 0.10 mile of the property boundary. The property is accessible and lacks fences or gates.

The former Zonolite Co. facility was operated by Grace Construction Products, a unit of W.R Grace & Co., as a vermiculite exfoliation plant from 1963 through August 1992. From 1963 to 1984, approximately 183,255 tons of vermiculite, which had originated from a mine in Libby, Montana, were processed at the Zonolite Co. facility. Vermiculite from the Libby, Montana mine is known to contain amphibole asbestos, including winchitite, richterite, and tremolite fibers, of which tremolite is currently a regulated substance. Products made on site from exfoliated vermiculite included Zonolite attic insulation and Monokote fireproofing material. Evidence of spillage and/or disposal of asbestos-contaminated vermiculite is present along the railway, by which the material was transported, as well as in an approximately 200-foot (ft) by 300-ft former disposal area located on the northeastern side of the site. While accessible, the former disposal area is typically covered in and surrounded by thick vegetation. There is documented evidence that the rail bed is used recreationally, including worn foot paths, empty beverage cans, and all-terrain vehicle (ATV) tracks.

Following closure of the Zonolite Co. facility in 1992, all equipment was removed from the facility plant building and the building was washed down. The building remained vacant from 1992 to 1997. The property is currently owned by Oldon Limited Partnership; and since 1997, the building has been leased to J.P. Stevens Elastomerics (JPS) for the storage of plastic goods. JPS representatives continue to visit the facility occasionally to load and unload products.

Description of Substances Possibly Present, Known or Alleged: Asbestos was detected in samples of on- and off-site surface soil and on-site subsurface soil.

Existing Analytical Data

(√) Real-Time Monitoring Data: Results of on- and off-site ambient and personal air samples collected during soil sample collection activities conducted in 2000 and 2001 are provided in the report listed below. No fiber levels were detected at concentrations exceeding applicable National Institute for Occupational Safety and Health (NIOSH) standards.

- MA DPH/ATSDR. 2006. Health Consultation, Former Zonolite Facility. 15 December.

(√) Sampling Data: Surface soil, subsurface soil, and sediment sample data are provided in the documents listed below. Asbestos concentrations in off-site surface soil samples ranged from trace (<1%) to 3.3% by volume via Polarized Light Microscopy (PLM). The maximum concentrations of asbestos in surface and subsurface soil samples (9.8% and 4.4%, respectively, via PLM) were detected in soil collected from the on-site former disposal area.

- MA DPH/ATSDR. 2006. Health Consultation, Former Zonolite Facility. 15 December.

Existing Analytical Data (concluded)

- Weston Solutions, Inc. 2000. Letter to Ms. Christine Clark, Regional Sample Control Center, US EPA, Subject: Case No. 0346F; Sample Delivery Group (SDG) No. D01484, EMSL Analytical, Inc., Former Zonolite Facility Site, Easthampton, Massachusetts. 20 June.

Potential Threat

Description of potential hazards to environment and/or population-identify any of the criteria for a Removal Action (from NCP) that may be met by the site under 40 CFR 300.415 [b] [2].

i. Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants or contaminants.

ii. Actual or potential contamination of drinking water supplies or sensitive ecosystems.

iii. Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release.

iv. High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate.

v. Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.

vi. Threat of fire or explosion.

vii. The availability of other appropriate federal or state response mechanisms to respond to the release.

viii. Other situations or factors that may pose threats to public health or welfare or the environment.

Prior Response Activities

(√) PRP (√) STATE (√) FEDERAL (√) OTHER

Brief Description: Following the closure of the facility in 1992, WR Grace & Co. collected clearance indoor air samples. In May 2000, MassDEP and EPA personnel conducted limited soil sampling at the site, which determined the presence of asbestos contamination. In August 2000, MassDEP issued a Notice of Responsibility/Notice of Response Actions to WR Grace & Co., and classified the property as a Tier II site in June 2001. Subsequently, JPS (the current lessee) hired Con-Test Analytical Laboratories of East Longmeadow, MA, to collect bulk samples of the walls, floor, and insulation of the on-site building. Remedium Group, Inc., a subsidiary of WR Grace & Co., hired Woodard & Curran Environmental Services (W&C) to conduct a Phase I Initial Site Investigation.

Prior Response Activities (concluded)

From October 2000 through April 2001, EPA, MassDEP, and W&C personnel collected additional surface soil, near-surface soil, and subsurface soil samples both on and off site. Multiple site visits were conducted by MA DPH in 2002 and 2003 to gather information for a Health Consultation. MassDEP, MHD, and the City of Easthampton are currently working with Tighe & Bond, and the property owners and their environmental consultant, to develop a remedial strategy in accordance with plans to develop a bike path and sewer line in areas potentially or known to be impacted by asbestos.

Priority for Site Investigation

(√) High **( ) Medium** **( ) Low** **( ) None**

Comments: There is a high priority to address the asbestos contamination associated with the site and located along the former rail bed, due to plans to construct a bike path and to install a sewer system along the rail bed.

Report Generation

Originator:	Carolyn Imbres	**Date:**	27 April 2009
Affiliation:	Weston Solutions, Inc.	**Telephone:**	978-552-2105
TDD No.:	01-08-11-0009	**Task No.:**	0487

II. Narrative Chronology

Narrative Chronology

Site Description

The Zonolite/W.R. Grace Facility site (the site) is a 2.5-acre property, located at 19 Wemelco Way, in a mixed residential and commercial area of Easthampton, Hampshire County, Massachusetts (MA) (see Appendix A – Figure 1 – Site Location Map) [1]. The site consists of the former Zonolite Company (Co.) facility plant building, a large paved parking lot along the northwestern side of the building, and a portion of a former rail line. A high-pressure underground gas line bisects the site to the east of the former facility plant building. An unnamed stream is located along the eastern edge of the property. The site is bordered by Wemelco Way to the west, D.O.S. Concrete Construction Co. to the north, the former rail line that runs northeast-to-southwest to the south, and a hayfield to the east [see Appendix A – Figure depicting Site Map (generated by Woodard & Curran Environmental Services as Figure 1 from *Phase I Initial Site Investigation Report*)] [2]. Approximately 1,393 people live within 0.5 mile of the site. The nearest residences are located within 0.10 mile of the property boundary. The site is accessible and lacks fences or gates.

Site History

From 1963 through August 1992, the Zonolite Co. facility plant was operated by Grace Construction Products, a unit of W.R. Grace & Co., as a vermiculite exfoliation plant. Exfoliation is a processing method whereby vermiculite is expanded through the application of heat. Products made at the site from exfoliated vermiculite included Zonolite attic insulation and Monokote fireproofing material. From 1963 to 1984, approximately 183,255 tons of vermiculite, which had originated from a mine in Libby, Montana, were processed at the site. Vermiculite from the Libby, Montana mine is known to contain amphibole asbestiform fibers, including winchitite, richterite, and tremolite, which are collectively known as "Libby asbestos". The raw vermiculite ore mined at the Libby facility is estimated to contain up to 26% Libby asbestos, while samples of the various grades of unexpanded vermiculite shipped from the Libby mine have been found to contain 0.3% to 7% fibrous tremolite-actinolite asbestos (by mass) [3]. During the Zonolite Co. facility plant's operation, the Massachusetts Department of Environmental Protection (MassDEP) responded on several occasions to complaints from nearby residences of dust and odors generated by the plant [3]. Following closure of the Zonolite Co. facility in 1992, all equipment was removed from the plant building and the building was washed down. The building remained vacant from 1992 to 1997. The property is currently owned by Oldon Limited Partnership (Oldon); and since 1997, the building has been leased to J.P. Stevens Elastomerics (JPS) for the storage of plastic goods. JPS representatives continue to visit the facility occasionally to load and unload products.

Evidence of spillage and/or disposal of asbestos-contaminated vermiculite is present along the railway, by which the material was formerly transported, as well as in an approximately 200-foot (ft) by 300-ft former disposal area located on the northeastern side of the site. While accessible, the former disposal area is typically covered in and surrounded by thick vegetation. There is documented evidence that the rail bed is used recreationally, including observations of worn foot

paths, empty beverage cans, and all-terrain vehicle (ATV) tracks [3]. The rail bed is currently owned by the City of Easthampton.

Previous site investigations have included the following: collection of clearance indoor air samples by W.R. Grace & Co. in 1992; bulk asbestos analysis of the floor, walls, and insulation of the former plant building, conducted by ATC Associates on behalf of JPS, in 2000; limited collection of surface and near-surface soil samples [up to 1.5 ft below ground surface (bgs)] by U.S. Environmental Protection Agency (EPA) in May 2000; collection of surface soil, near-surface soil, subsurface soil, and sediment samples by MassDEP and Woodard & Curran Environmental Services (W&C) from October 2000 through April 2001; and collection of personal and ambient air samples by ATC Associates, Inc. and FLI Environmental Inc., during soil sample collection events conducted from October 2000 through April 2001. W&C was hired by Remedium Group, a subsidiary of W.R. Grace & Co., to conduct environmental investigations of the site. In addition, the Agency for Toxic Substances and Disease Registry (ATSDR) published a Health Consultation that evaluated the public health effects of the Zonolite Co. facility in December 2006. A total of 155 surface soil samples (0-3 inches bgs), 33 near-surface soil samples (3 inches to 2 ft bgs), and 72 subsurface soil samples (2-10 ft bgs) were collected during these investigations. Samples were collected from the site; from the rail bed (portions located on the site, as well as off site to the east and west); from the hayfield located east of the site; and from other nearby properties to the south, west, and north.

Results of surface soil samples analyzed by polarized light microscopy (PLM) revealed trace asbestos concentrations (less than 1% by volume) throughout the site, as well as at on- and off-site locations along the rail bed, and at locations on all adjacent properties (a total of four additional properties) except for the hayfield. Trace concentrations detected at off-site properties were limited to areas immediately adjacent to the site. Results of samples collected from farther locations were below detection limits; therefore, it is possible that the lateral extent of contamination has been effectively delimited. Asbestos was detected at levels above 1% in surface soil samples collected from one location along the off-site portion of the rail bed, at a concentration of 3.3%, as well at several on-site locations (predominantly in the former disposal area), at concentrations up to 9.8%. Surface soil sample locations and results for the MassDEP/W&C sampling event are provided in Appendix A – Figures – Figure depicting Asbestos Surface Sample Results (generated by MassDEP as Figure 1 in *Presentation and Investigation Results of the Former Zonolite Facility*) [4].

Seventy of the 72 subsurface samples (2 to 10 ft bgs) were collected from soil borings in the on-site former disposal area. Results of the other two subsurface samples, collected from the on-site portion of the rail bed, were below detection limits. Asbestos was detected in the former disposal area at concentrations up to 4.4% by PLM [up to 15% by transmission electron microscopy (TEM)], and at trace concentrations down to 10 ft bgs [see Appendix A – Figures – Figure depicting Subsurface Sample Boring Locations and Sediment Sample Locations (generated by MassDEP as Figure 2 in *Presentation and Investigation Results of the Former Zonolite Facility*)] [4]. Since trace amounts of asbestos were detected at the maximum depth sampled, it is possible that the total depth of the contamination has not been delineated. In addition, asbestos was detected in one sediment sample collected from the nearby unnamed stream. Sample locations

and results are summarized in Tables 1 through 4, located in Appendix B – Tables (generated by ATSDR in *Health Consultation, Former Zonolite Facility*) [3].

ATSDR's 2006 Health Consultation was completed as part of the National Asbestos Exposure Review (NAER), an initiative to assess over 200 sites in the United States that received vermiculite from a Libby, Montana mine. The site was selected during Phase I of the NAER, which included assessments of 28 sites that were either recommended for further action by EPA and/or were known to have processed (via exfoliation) more than 100,000 tons of asbestos-contaminated vermiculite from a Libby mine. ATSDR considers inhalation to be the most significant route of exposure to Libby asbestos.

As part of the Health Consultation, Massachusetts Department of Public Health (MA DPH) and ATSDR reviewed historical air monitoring data records from 1974 through 1991, as well as current site conditions, to determine past, present, and future potential pathways for human exposure. ATSDR determined that an exposure pathway historically existed, based on the results that approximately 94% of the 130 personal employee air samples collected by W.R. Grace & Co. between 1974 and 1984, and analyzed via Phase Contrast Microscopy (PCM), contained fibers above the current Occupational Safety and Health Association (OSHA) regulatory limit. However, none of the 117 personal air samples collected from 1985 to 1991, when the Zonolite Co. facility no longer received vermiculite from Libby, exceeded the OSHA standard. Results of the indoor air clearance samples collected by W.R. Grace & Co. upon closure of the Zonolite Co. facility in 1992 revealed detectable levels of fibers [0.0006 to 0.008 fibers per cubic centimeter (f/cc)]; however, these concentrations are below the federal and state post-abatement standard of 0.01 f/cc. The maximum 30-minute (min) short-term exposure limit (STEL) and 8-hour (hr) time-weighted average (TWA) permissible exposure limit (PEL) fiber concentrations detected in personal air samples collected between 2000 and 2001, during on- and off-site investigative and sample collection activities, were 0.114 f/cc and 0.018 f/cc, respectively. Personal air samples were therefore below the OSHA STEL standard of 1.0 f/cc and below the OSHA 8-hr TWA PEL standard of 0.1 f/cc. Additional air samples collected between 2000 and 2001 included 27 ambient off-site samples and 31 ambient on-site samples. Analytical results of these ambient air samples indicated a maximum fiber concentration of 0.007 f/cc. As a result of its health consultation, ATSDR recommended that further actions be taken to restrict access to the site, and that asbestos air monitoring be conducted by current property owners. In addition, ATSDR recommended that personal air samples be collected during future remediation or development activities to evaluate potential exposure to workers and the community.

In 2004, EPA Office of Solid Waste and Emergency Response (OSWER) issued a directive which indicated that the traditional strategy of conducting clean-up at asbestos-contaminated sites (*i.e.*, addressing only those areas of soil and debris containing asbestos concentrations greater than 1%) may not be effective at addressing potential health hazards [5, 6]. Instead, a risk-based, site-specific action level is appropriate in evaluating response actions for asbestos contamination. The OSWER directive indicated that several recent investigations had determined that vigorous disturbance of soil containing less than 1% asbestos may lead to airborne concentrations that exceed acceptable levels, and that consequently, health risks associated with such disturbance may need to be evaluated depending on current and proposed use of

contaminated sites. In some cases, it may be applicable to conduct activity-based sampling, whereby air samples are collected under a range of different land-use/soil-disturbance scenarios.

Site Activities

On 18 November 2008, EPA requested the Weston Solutions Inc. Superfund Technical Assessment and Response Team (START) to assist in evaluating five sites in Massachusetts identified by NAER to either be alleged or known to have processed asbestos-contaminated vermiculite ore from Libby, Montana, including the Zonolite/W.R. Grace Facility site in Easthampton, MA. Evaluation of these sites included conducting background research, reviewing files, and assessing the need for additional sampling (including activity-based sampling) or other actions, in order to evaluate and address asbestos contamination present at any detectable level.

On 10 February 2009, EPA conducted a meeting at the Easthampton Municipal Building located at 50 Payson Avenue, Easthampton, MA. Attendees at the meeting included EPA On-Scene Coordinator (OSC) John McKeown; EPA attorney Steven Schlong; EPA Enforcement Coordinator Tina Hennessy; Weston Solutions, Inc. START Site Leader (SL) Carolyn Imbres; MassDEP representatives Lisa Jones and Cathy Wanat; Tighe & Bond representatives Tracy Adamski and Nancy Milke [consultants of the City of Easthampton and Massachusetts Highway Department (MHD)]; Easthampton City Planner Stuart Beckley; MHD representative Shahpar Negah and, via call-in line, MHD member Steven Miller; property owner Eileen O'Leary Sullivan of Oldon; Oldon representative Tim Mulhern of Shatz, Schwartz, and Fentin; and Oldon environmental consultant Kevin O'Reilly of O'Reilly, Talbot, and Okun. The purpose of the meeting was to discuss sample results; remediation approaches; and future plans for the site, which include the construction of a bike path along the rail bed, as part of a Rails-to-Trails Conservancy project, and the installation of a sewer line immediately adjacent to the proposed bike path**.**

Analytical results were compiled and areas of concern delineated in a figure completed by O'Reilly, Talbot, and Okun Associates [see Appendix A – Figures – Figure depicting Site Plan (generated as Figure 2)] [7]. All parties in attendance expressed agreement that the site was fully characterized based on previous investigations.

Following the meeting, a brief site walk was conducted. A site-specific health and safety plan (HASP) was prepared as a separate document, entitled *Weston Solutions, Inc., Region 1 START Site Health and Safety Plan for the Zonolite/W.R. Grace Facility site, Easthampton, Massachusetts,* dated February 2009 [8]. At the time of the site walk, the site was covered in several inches of snow. The footprints of a person(s) were observed in the snow along the eastern side of the building. Photographs taken during the site walk are included in Appendix C – Photodocumentation Log.

REFERENCES

[1] MassGIS (Massachusetts Geographic Information Systems). 1995. Scanned USGS Topographic Quadrangle Images, Image Numbers 101890, 105890, 101886, and 105886. Available from http://www.mass.gov/mgis/im_quad.htm. Internet accessed 16 February 2009.

[2] Woodard & Curran Environmental Services (W&C). 2001. Phase I Initial Site Investigation Report, W.R. Grace & Co. – Conn. Wemelco Way, Easthampton, MA. June.

[3] Massachusetts Department of Public Health (MA DPH), Center for Environmental Health, Environmental Toxicology Program, and the Agency for Toxic Substances and Disease Registry (ATSDR). 2006. Health Consultation, Former Zonolite Facility. 15 December.

[4] Massachusetts Department of Environmental Protection (MassDEP). 2000. Presentation of Investigation Results of the Former Zonolite Facility, Wemelco Way, Easthampton, at the White Brook Middle School. 12 December.

[5] U.S. Environmental Protection Agency (USEPA) Office of Solid Waste and Emergency Response (OSWER) Directive 9200.0-68. 2004. Memorandum to Superfund National Policy Managers, Regions 1-10 RE: Clarifying Cleanup Goals and Identification of New Assessment Tools for Evaluating Asbestos at Superfund Cleanups. 10 August.

[6] Asbestos Committee of the Technical Review Workgroup of USEPA OSWER, Directive 9200.0-68. 2008. Framework for Investigating Asbestos-Contaminated Superfund Sites. September.

[7] O'Reilly, Talbot, and Okun Associates. 2007. Site Plan, Figure 2, Project No. J0084-31-03, Former WR Grace & Company Zonolite Facility. 19 July.

[8] Weston Solutions, Inc., Region I Superfund Technical Assessment and Response Team (START). 2009. Health and Safety Plan for the Zonolite/W.R. Grace Facility site, Easthampton, Massachusetts. February.

III. Appendices

Appendix A

Figures

Figure 1 – Site Location Map

Figure depicting Site Map (generated as Figure 1, excerpted from *Phase I Initial Site Investigation Report* by Woodard & Curran)

Figure depicting Asbestos Surface Sample Results [generated as Figure 1, excerpted from *Presentation of Investigation Results of the Former Zonolite Facility* by Massachusetts Department of Environmental Protection (MassDEP)]

Figure depicting Subsurface Sample Boring Locations and Sediment Sample Locations (generated as Figure 2, excerpted from *Presentation of Investigation Results of the Former Zonolite Facility* by MassDEP)

Figure depicting Site Plan (generated as Figure 2, excerpted from *Former WR Grace & Company Zonolite Facility* by O'Reilly, Talbot, & Okun)

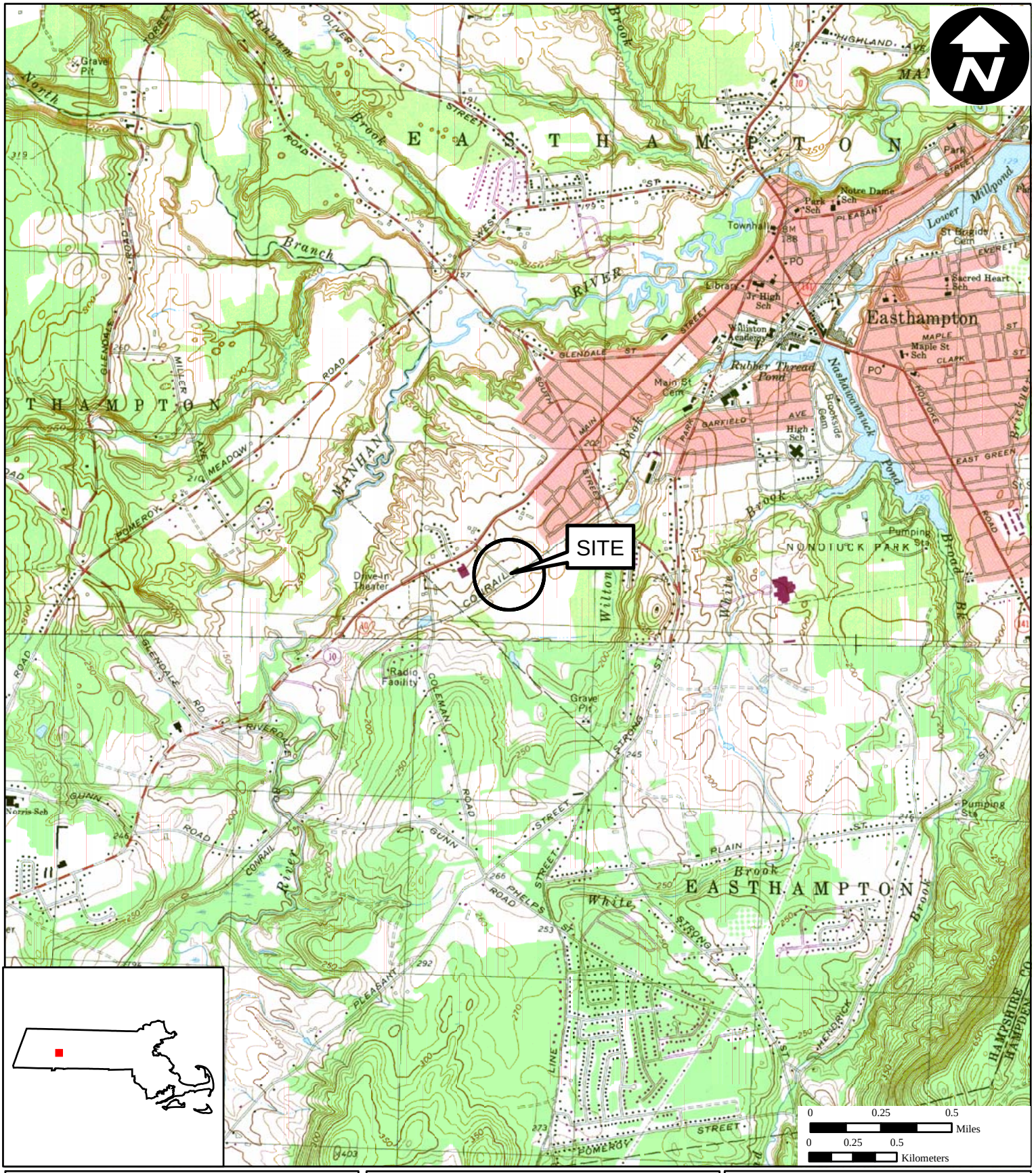


Figure 1

Site Location Map

Zonolite/W.R. Grace Facility
19 Wemelco Way
Easthampton, Massachusetts

EPA Region I
Superfund Technical Assessment and Response Team (START) III
Contract No. EP-W-05-042

TDD Number:	08-11-0009
Created by:	C. Imbres
Created on:	16 February 2009
Modified by:	C. Imbres
Modified on:	9 March 2009

Data Sources:

Topos: MassGIS/USGS
Quadrangle Name(s): Easthampton, Southampton
All other data: START

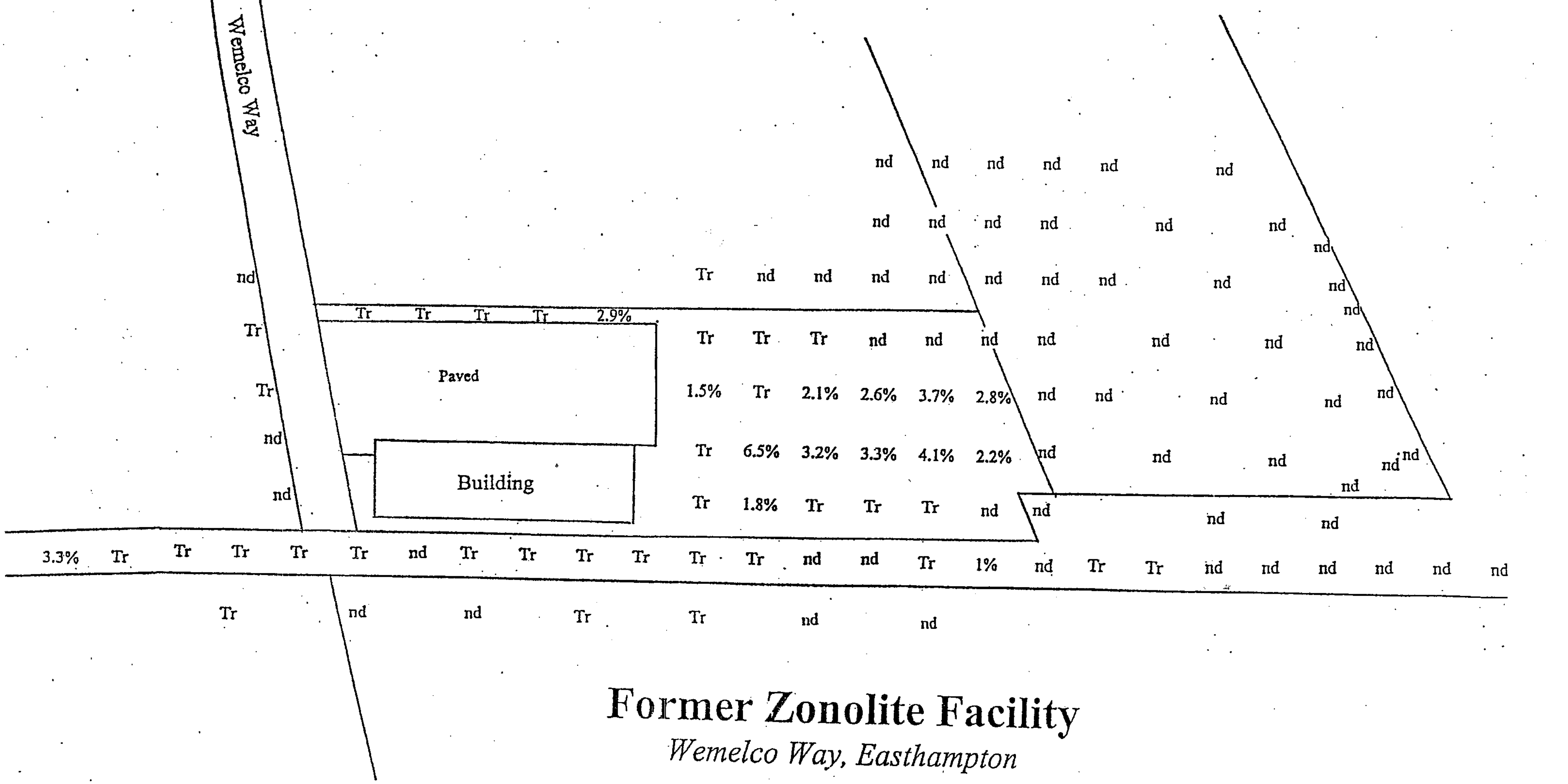
WESTON SOLUTIONS
Restoring Resource Efficiency

E:\MA_gis\Zonolite Co (Easthampton)\Figure1.mxd

Figure 1. SITE MAP
FORMER ZONOLITE FACILITY,
EASTHAMPTON, MASSACHUSETTS

Asbestos Surface Sample Results (in %)

nd – no asbestos detected
Tr – Trace of asbestos detected (less than 1%)

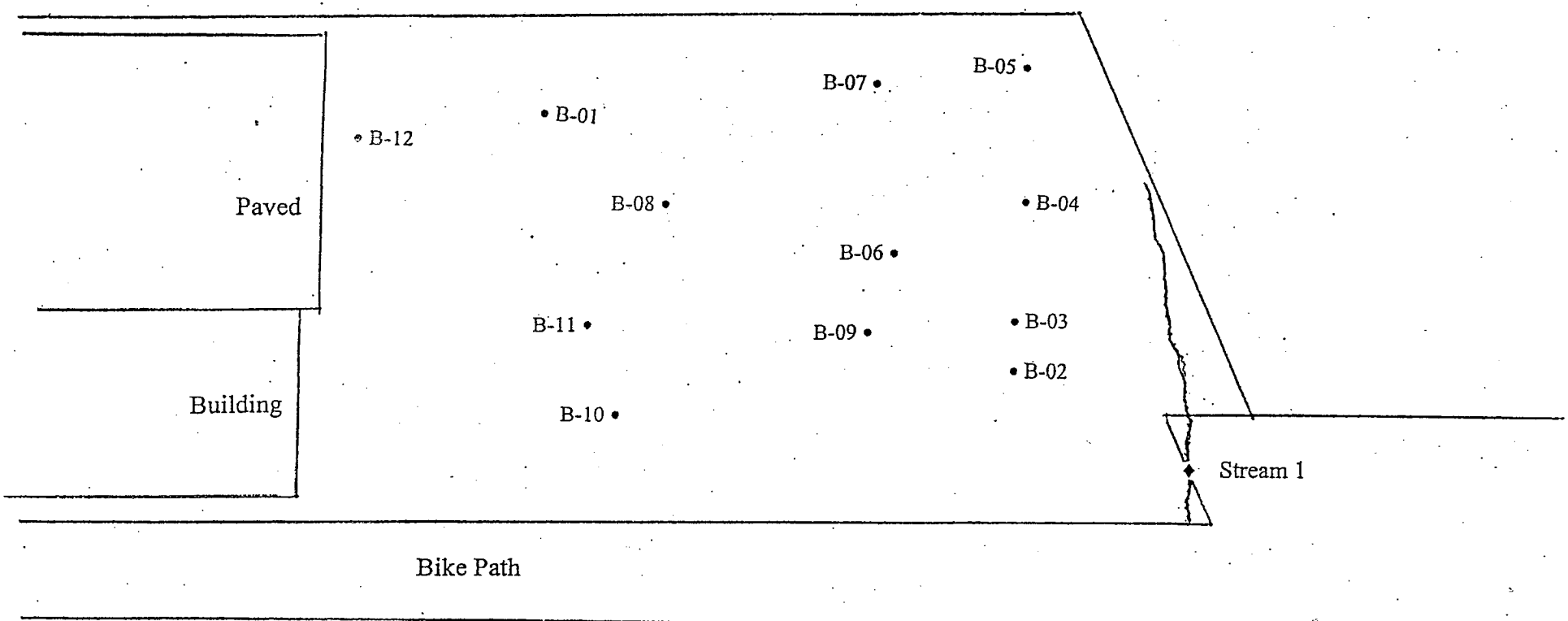


Former Zonolite Facility

Wemelco Way, Easthampton

Zonolite Presentation
December 12, 2000
Figure 1

Subsurface Sample Boring Locations
and
Sediment Sample Locations



Former Zonolite Facility

Wemelco Way, Easthampton

- Boring Location
- Sediment Sample

Boring #	B-01	B-02	B-03	B-04	B-05	B-06	B-07	B-08	B-09	B-10	B-11	B-12
2-4 fbg	Tr	Tr	**3.0%**	Tr	*nd*	**3.2%**	Tr	Tr	Tr	*nd*	Tr	*nd*
4-6 fbg	*nd*	**1.9%**	Tr	Tr	*nd*	Tr	Tr	Tr	Tr	Tr	Tr	Tr
6-8 fbg	Tr	Tr	Tr	Tr	*nd*	Tr	Tr	Tr	Tr	Tr	Tr	Tr
8-10 fbg	Tr	Tr								Tr		

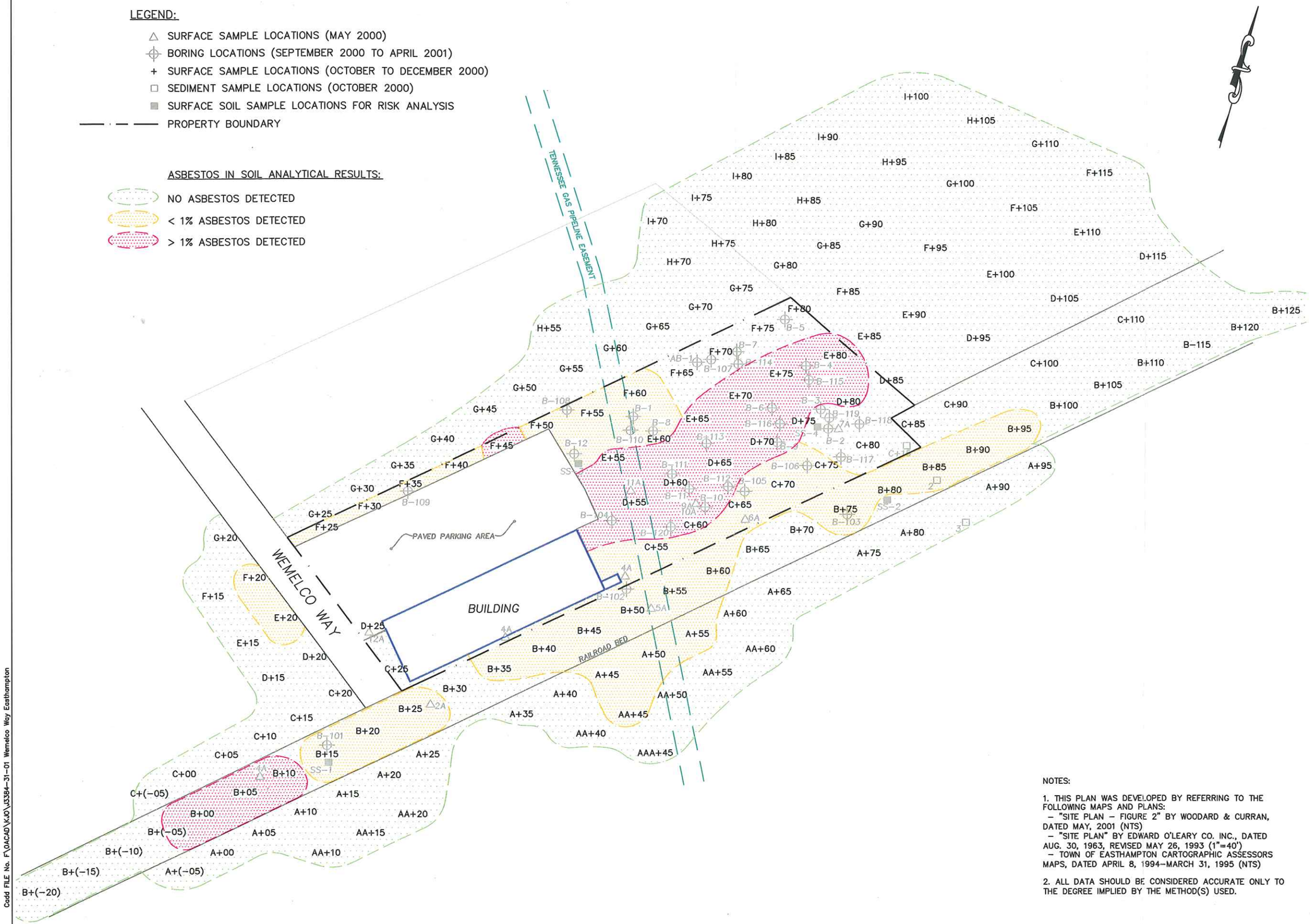
Zonolite Presentation
December 12, 2000
Figure 2

LEGEND:

- △ SURFACE SAMPLE LOCATIONS (MAY 2000)
- ⊕ BORING LOCATIONS (SEPTEMBER 2000 TO APRIL 2001)
- \+ SURFACE SAMPLE LOCATIONS (OCTOBER TO DECEMBER 2000)
- □ SEDIMENT SAMPLE LOCATIONS (OCTOBER 2000)
- ■ SURFACE SOIL SAMPLE LOCATIONS FOR RISK ANALYSIS
- PROPERTY BOUNDARY

ASBESTOS IN SOIL ANALYTICAL RESULTS:

- NO ASBESTOS DETECTED
- < 1% ASBESTOS DETECTED
- > 1% ASBESTOS DETECTED



NOTES:

1. THIS PLAN WAS DEVELOPED BY REFERRING TO THE FOLLOWING MAPS AND PLANS:
   - "SITE PLAN – FIGURE 2" BY WOODARD & CURRAN, DATED MAY, 2001 (NTS)
   - "SITE PLAN" BY EDWARD O'LEARY CO. INC., DATED AUG. 30, 1963, REVISED MAY 26, 1993 (1"=40')
   - TOWN OF EASTHAMPTON CARTOGRAPHIC ASSESSORS MAPS, DATED APRIL 8, 1994–MARCH 31, 1995 (NTS)
2. ALL DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD(S) USED.

DESIGNED BY: KJO
CHECKED BY: MJT
DRAWN BY: CDA
DATE: JULY 19, 2007

O'Reilly, Talbot & Okun
[A S S O C I A T E S]

SCALE IN FEET
1" = 100'
0' 50' 100' 200'

FORMER WR GRACE & COMPANY
ZONOLITE FACILITY
19 WEMELCO WAY – EASTHAMPTON, MASSACHUSETTS

SITE PLAN

PROJECT No.
J0084-31-03

FIGURE No.
2

Codd FILE No. F:\OACAD\KJO\J3384-31-01 Wemelco Way Easthampton

Appendix B

Tables

Table 1 – Asbestos in soil samples at the former Zonolite site analyzed by polarized light microscopy (PLM) and transmission electron microscopy (TEM) [excerpted from *Health Consultation, Former Zonolite Facility* by the Agency for Toxic Substances and Disease Registry (ATSDR)].

Table 2 – Asbestos in surface soil (0 through 3 inches) samples at and near the former Zonolite site collected between May 2000 and April 2001 and analyzed by polarized light microscopy (PLM) (excerpted from *Health Consultation, Former Zonolite Facility* by ATSDR).

Table 3 – Asbestos in near surface soil (3 inches through 2 feet) samples at and near the former Zonolite site collected between May 2000 and April 2001 and analyzed by polarized light microscopy (PLM) (excerpted from *Health Consultation, Former Zonolite Facility* by ATSDR).

Table 4 – Asbestos in subsurface soil (2 through 10 feet) samples at and near the former Zonolite site collected between May 2000 and April 2001 and analyzed by polarized light microscopy (PLM) (excerpted from *Health Consultation, Former Zonolite Facility* by ATSDR).

Table 1. Asbestos in soil samples at the former Zonolite site analyzed by polarized light microscopy (PLM) and transmission electron microscopy (TEM).

Source of Data	Date Collected	Type of Soil Sample	Sample ID and Depth	Asbestos % PLM	Asbestos % TEM	Location
EPA/ DEP	5/2000	Surface	1A, 0–3 inches	2.2	NVA	Off-property railroad bed west
			2A, 0–3 inches	<1	<1	On-property railroad bed
			3A, 0–3 inches	<1	NVA	On-property
			4A, 0.5–1.5 feet	NC	<1	On-property
			5A, 0–3 inches	NC	<1	On-property railroad bed
			6A, 0.5–1.5 feet	NC	NVA	On-property
			7A, 0–3 inches	8.1	5 to 10	On-property
			8A, 3–6 inches	9.8	<1	On-property
			9A, 0–3 inches	NC	<1	On-property
			10A, 3–8 inches	6.4	<1	On-property
			11A, 0–3 inches	1.0	<1	On-property
			12A, 0–3 inches	NC	NVA	On-property
DEP	10/2000	Surface	SS-03	NVA	NVA	Off-property beyond hayfield; near residence
DEP/ W&C	10/2000- 12/2000	Surface/ Grid	AA-20	NVA	NVA	Off-site south of railroad bed
			B (-05)	<1	<1	Off-property rail roadbed west
			B-30	NVA	<1	On-property railroad bed
			B-80	<1	<1	On-property railroad bed
			C-80	NVA	NVA	On-property
			D-60	6.5	6.0	On-property
			F-20	<1	<1	Off-property west of Wemelco
			G-45	<1	<1	Way
			G-65	NVA	NVA	Off-property concrete facility
			G-80	NVA	NVA	Off- property concrete facility
			H-80	NVA	NVA	Off- property hayfield
						Off- property hayfield
DEP	10/2000	Subsurface 2 to 10 feet	B-02, 6–8 feet	<1	<1	On-property
			B-06, 2–4 feet	<1	<1	On-property
			B-11, 2–4 feet	<1	<1	On-property
W&C	1/2001	Subsurface 1 to 8 feet	B-101, 1–2 feet	NVA	NVA	On-property
			B-107, 3–5 feet	NVA	NVA	On-property
			B-108, 1–2 feet	<1	<1	On-property
			B-109, 1–2 feet	<1	<1	On-property
W&C	4/2001	Subsurface 2 to 10 feet	B-116, 6–7 feet	<1	<1	On-property
			B-117, 1–2 feet	<1	<1	On-property
			B-119, 5–6 feet	4.4	15	On-property

EPA	US Environmental Protection Agency
DEP	Massachusetts Department of Environmental Protection
NC	not collected
NVA	no visible asbestos
PLM	polarized light microscopy
TEM	transmission electron microscopy
W&C	Woodward & Curran
<	less than

Table 2. Asbestos in surface soil (0 through 3 inches) samples at and near the former Zonolite site collected between May 2000 and April 2001 and analyzed by polarized light microscopy (PLM).

Area Sampled	Total Samples	No Visible Asbestos	Trace (<1%)	Detects ≥1% (Maximum)
Former Zonolite property	35	6	15	14 (8.1%)
On-property railroad bed	14	4	10	0
Off-property railroad bed – east	8	6	2	0
Off-property railroad bed – west	10	3	5	2 (3.3%)
Hayfield	30	30	0	0
Other off-site* properties	55	46	9	0

* Other off-site properties includes 55 samples from the following locations: 27 south of the rail bed, 13 west of Wemelco Way and 15 north of the Former Zonolite Property near DOS Concrete Construction Co.
< less than; ≥ greater than or equal to

Table 3. Asbestos in near surface soil (3 inches through 2 feet) samples at and near the former Zonolite site collected between May 2000 and April 2001 and analyzed by polarized light microscopy (PLM).

Area Sampled	Total Samples	No Visible Asbestos	Trace (<1%)	Detects ≥1% (Maximum)
Former Zonolite property	25	5	16	4 (9.8%)
On-property railroad bed	4	3	1	0
Off-property railroad bed – west	2	2	0	0

< less than; ≥ greater than or equal to

Table 4. Asbestos in subsurface soil (2 through 10 feet) samples at and near the former Zonolite site collected between May 2000 and April 2001 and analyzed by polarized light microscopy (PLM).

Area Sampled	Total Samples	No Visible Asbestos	Trace (<1%)	Detects ≥1% (Maximum)
Former Zonolite property	70	31	35	4 (4.4%)
On-property railroad bed	2	2	0	0

< less than; ≥ greater than or equal to

Appendix C

Photodocumentation Log

PHOTOGRAPHY LOG SHEET
Zonolite/W.R. Grace Facility ● Easthampton, Massachusetts

SCENE: View of the location of the former rail line that ran in a northeast-to-southwest direction, located along the rear of the former Zonolite/W.R. Grace Facility plant building. Photograph taken facing northeast.
DATE: 10 February 2009 **TIME:** 1315 hours
PHOTOGRAPHER: C. Imbres **CAMERA:** HP Photosmart M22

SCENE: View of the location of the former rail line extending from the southwestern corner of the site. Photograph taken facing southwest.
DATE: 10 February 2009 **TIME:** 1316 hours
PHOTOGRAPHER: C. Imbres **CAMERA:** HP Photosmart M22

PHOTOGRAPHY LOG SHEET
Zonolite/W.R. Grace Facility ● Easthampton, Massachusetts

SCENE: View of the former disposal area located to the northeast of the former Zonolite/W.R. Grace Facility plant building. Photograph taken facing north.
DATE: 10 February 2009 **TIME:** 1321 hours
PHOTOGRAPHER: C. Imbres **CAMERA:** HP Photosmart M22

SCENE: View of the former disposal area located to the northeast of the former Zonolite/W.R. Grace Facility plant building. Photograph taken facing west.
DATE: 10 February 2009 **TIME:** 1322 hours
PHOTOGRAPHER: C. Imbres **CAMERA:** HP Photosmart M22

PHOTOGRAPHY LOG SHEET
Zonolite/W.R. Grace Facility ● Easthampton, Massachusetts

SCENE: View of mounds in the former disposal area located to the northeast of the former Zonolite/W.R. Grace Facility plant building. Photograph taken facing west.
DATE: 10 February 2009 **TIME:** 1323 hours
PHOTOGRAPHER: C. Imbres **CAMERA:** HP Photosmart M22

SCENE: View of the former disposal area located to the northeast of the former Zonolite/W.R. Grace Facility plant building. Photograph taken facing north.
DATE: 10 February 2009 **TIME:** 1326 hours
PHOTOGRAPHER: C. Imbres **CAMERA:** HP Photosmart M22

PHOTOGRAPHY LOG SHEET
Zonolite/W.R. Grace Facility ● Easthampton, Massachusetts

SCENE: View of Wemelco Way and the on-site paved parking area located along the western side of the former Zonolite/W.R. Grace Facility plant building. Photograph taken facing north.
DATE: 10 February 2009 **TIME:** 1328 hours
PHOTOGRAPHER: C. Imbres **CAMERA:** HP Photosmart M22

SCENE: View of the former Zonolite/W.R. Grace Facility plant building main entrance and the paved parking area located along the northwestern side of the building. Photograph taken facing northeast.
DATE: 10 February 2009 **TIME:** 1330 hours
PHOTOGRAPHER: C. Imbres **CAMERA:** HP Photosmart M22