J2118-01-04
September 21, 2011

Prepared For:

Remedium Group, Inc.
A Subsidiary of W.R. Grace & Co.
6401 Poplar Avenue, Suite 301
Memphis, Tennessee 38119

Attention: Mr. Robert R. Marriam

Final Report
CERCLA Docket No. 01-2010-0019
Former Zonolite Facility
19 Wemelco Way
Easthampton, Massachusetts

Prepared By:

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Attention: Mr. Robert R. Marriam

Re: Final Report
CERCLA Docket No. 01-2010-0019
Former Zonolite Facility
19 Wemelco Way
Easthampton, Massachusetts

Dear Mr. Marriam:

O'Reilly, Talbot & Okun Associates, Inc., has prepared and is pleased to present this Final Report to meet the requirements Section 300.165 of the NCP (National Contingency Plan) entitled "OSC Reports."

Please call us if you have any comments concerning the report.

Very truly yours,
O'Reilly, Talbot & Okun Associates, Inc.

Kevin J. O'Reilly, LSP
Principal

c: MassDEP
U.S. EPA

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1.0 INTRODUCTION

This Final Report has been prepared by O'Reilly, Talbot & Okun Associates, Inc. (OTO) to complete the requirements of Section 300.165 of the NCP (National Contingency Plan) entitled "OSC Reports." Specifically, this report documents completion of Asbestos Containing Soil (ACS) excavation work conducted on behalf of W.R. Grace & Co. (Grace) to meet the requirements of the Administrative Order on Consent (AOC) between Grace, Oldon Limited Partnership (Oldon), and U.S. Environmental Protection Agency (USEPA).

The remedial work was conducted in accordance with a USEPA and MassDEP Site Specific Work Plan (SSWP) dated September 9, 2010. A Site Locus is attached as Figure 1. A Site Plan showing original Site conditions is provided as Figure 2. Our report is subject to the Limitations in Appendix A.

2.0 GENERAL SITE INFORMATION

2.1 SITE DESCRIPTION

The Site is composed of several parcels upon which remedial actions were completed. The Disposal Site Limits subject to the remedial work are shown on Figure 2. Specifically, the work was conducted on the following properties:

1) Former Zonolite Facility - located at 19 Wemelco Way and owned by Oldon Limited Partnership;
2) Railroad Right-of-Way - a portion of the former Pioneer Valley Rail Line located adjacent to the Former Zonolite Facility, as shown on Appendix C "Site Diagram" in the AOC;
3) Cernak Parcel - an area of ACS on farmland south of the Railroad Right-of-Way, owned by David and Marilyn Cernak;
4) DOS Parcel - an area of ACS on the parcel of land located within the Site, northwest of the Former Zonolite Facility, owned by Wemelco Realty Trust; and
5) Elastomerics Parcels – Two areas of ACS of vacant land owned by JPS Acquisition Elastomerics Co the west and southwest of Wemelco Way.

Descriptions of these properties are provided below and reflect pre-remediation conditions as shown on Figure 2.

2.1.1 Former Zonolite Facility (19 Wemelco Way)

The Former Zonolite facility is located at 19 Wemelco Way and owned by Oldon. The Former Zonolite facility is an approximate 2.5 acre parcel of land located in a generally rural area of Easthampton, Massachusetts. A Site Plan is provided as Figure 2 and shows the Former Zonolite facility consisting of a developed 1.822 acre Parcel A and an undeveloped 0.87 acre Parcel B.

Parcel A is occupied by a vacant industrial building. The building is a one-story, concrete slab on grade structure, with a small mezzanine area. The Site building was used to process vermiculite into bagged Zonolite insulation. The eastern portion of this parcel includes an active Tennessee Gas Pipeline easement, as shown on Figure 2.

Prior to remedial actions, Parcel B and the eastern portion of Parcel A was an undeveloped field with dense grasses and small trees and brush. A portion of this field was capped as part of remedial actions described later in Section 3.0.

OTO conducted an online review of the MassDEP Priority Resource (21E) map which is available online (http://maps.massgis.state.ma.us/21e/viewer.htm). The map, attached in Appendix H, indicates the Site lies within a mapped Medium Yield Aquifer and lies within a mapped Zone II of a Public Water Supply Source. These groundwater resource areas are not a concern with respect to this Project, as the constituent of concern (asbestos) is not water soluble.

OTO contacted the Easthampton Board of Health, which indicated the Site building is serviced by public water and an on-site private septic system. There are no known private supply wells within 500 feet of the Site.

Within the Former Zonolite Facility, the AOC described five sub areas where remedial actions were required for ACS:

Area A (an area of < 1% asbestos-containing surface soils located east of Area C);
Area B (an area of > 1 % asbestos-containing surface and subsurface soils located east of Area C);
Area C (an area of asbestos-containing surface and subsurface soils located within the Tennessee Gas Pipeline easement);
Area D (an area of < 1% asbestos-containing surface soils located west of Area C); and
Area E (an area of > 1% asbestos-containing surface soils located west of Area C).

These remedial areas are shown conceptually on Figure 3, a site sketch generated by Weston Solutions on behalf of USEPA.

2.1.2 Railroad Right-of-Way

This parcel is an approximately 1,000 foot long by 50 foot wide inactive rail easement, now owned by the City of Easthampton, within which ACS was detected in prior studies. It is part of a planned municipal bike path construction project. Fast-tracked removal of ACS within this parcel, to accommodate this planned use, was a key component of the remedial program.

2.1.3 Cernak Parcel

The Cernak Parcel is the eastern most of two parcels labeled as Cernak on Figure 3 prepared by Weston Solutions on behalf of USEPA. The western most parcel is actually the Elastomerics South parcel described in Section 2.1.5 and shown on Figure 2. This parcel is an approximately 8,000 square foot field located to the south of the Railroad Right-of-Way. It is a portion of a 78 acre undeveloped lot (Tax Assessor's Map ID 165-47) owned by David and Marilyn Cernak, within which ACS had been detected. The parcel is a grass field, partially located within a mapped wetland. A portion of this Parcel is crossed by the 30 foot wide Tennessee Gas Pipeline easement.

2.1.4 DOS Parcel (9 Wemelco Way)

This parcel is an approximately 7,500 square foot area located to the north of the Former Zonolite Facility parking lot, as shown in Figure 3. It is a portion of a 1.43 acre industrial property (Tax Assessor's Map 165-1) owned by Wemelco Realty Trust, within which ACS has been detected. The DOS parcel is a grass covered and undeveloped portion of the Wemelco Realty Trust property used for limited material storage by DOS (a concrete foundation company). A slope descends from the DOS property to the abutting 19 Wemelco Way property.

2.1.5 Elastomerics Parcels – North and South

These parcels are on land owned by JPS Acquisition Elastomerics. The Elastomerics North Parcel is an approximately 4,000 square foot wooded area located to the west of Wemelco Way and the Former Zonolite Facility parking lot. It is a portion of a 12.8 acre industrial lot (Tax Assessor's Map 164-4).

The Elastomerics South Parcel, originally described by Weston Solutions (Figure 3) as part of the Cernak Parcel, is an approximately 2,000 square foot wooded wetland area located to the southwest of Wemelco Way and south of the Railroad Right-of-Way. It is the portion of a 13.9 acre undeveloped lot (Tax Assessor's Map 164-3).

2.2 SITE AND RELEASE HISTORY

The former Zonolite facility was previously used (1963 to 1992) to process vermiculite concentrate into bagged Zonolite products. Incoming vermiculite concentrate was transported via rail on tracks abutting the site building. Asbestos fibers are present in soils outside the building, including abutting parcels along the railroad tracks and could be due to spillage of bulk materials during handling, as well as deposits of air-borne fibers. Released asbestos-containing materials are located primarily in surface soil. Asbestos fibers were also locally found on interior building surfaces. The building is currently vacant.

A Phase II Comprehensive Environmental Site Assessment and Phase III Evaluation of Remedial Alternatives were submitted to the MassDEP on August 1, 2007. The report summarized prior Site testing by the USEPA, the MassDEP, and Woodard and Curran, Inc. (WCI). This work included asbestos soil testing at over 150 sample locations. Based on these results, the estimated pre-remediation limits of ACS are shown on Figure 4, along with sample locations.

The AOC required remedial actions to remove or encapsulate the ACS as documented herein.

2.3 ENVIRONMENTAL PERMIT AND COMPLIANCE HISTORY

A Site Specific Work Plan (SSWP) was prepared by OTO on behalf of Grace and approved by USEPA in a letter dated September 14, 2010. We understand that USEPA's approval was based on input from MassDEP. An Order of Conditions (MassDEP File 151264) was issued by the Easthampton Conservation Commission (ConCom) to allow excavation within wetlands and abutting buffer zones. A USEPA General Stormwater Construction Permit No. MAR10DN39 was issued. Copies of the ConCom's Order of Conditions and the stormwater Permit are provided in Appendix B.

3.0 REMEDIAL ACTIONS UNDERTAKEN

Remedial Response actions were undertaken in accordance with the SSWP between September 27, 2010 and May 9, 2011 and are documented below. Construction photographs are provided in Appendix I.

3.1 OVERVIEW OF REMEDIATION PLAN

Remedial actions were undertaken in compliance with the USEPA-approved SSWP to address ACS from the margins of the Former Zonolite Facility and from abutting parcels. ACS is defined in the AOC as *"the reproducible presence of Amphibole Asbestos Fibers in soil tests conducted in accordance with EPA Method 600/R-93/116 using the PLM visual estimation method, or the asbestos in soil characterizations set forth in a map depicting the 2000-2001 sampling at the Site."* The pre-remediation 2000-2001 estimate of the extent of ACS is depicted on Figure 4.

Conceptually, the plan was to excavate ACS from outlying portions of the Site, which was then to be placed on top of the existing ACS on the undeveloped portion of the Former Zonolite Facility, within what is referred to as the "Placement Area". The Placement Area was then to be capped, and institutional controls filed with the Hampshire County Registry of Deeds. The initially proposed limits of the excavation and the Placement Area are shown on Figure 5. The excavation limits generally coincide with final limits, with limited exceptions noted in Section 3.4.

The soil excavation and capping work is documented below. Additionally, the SSWP described planned asbestos abatement activity within the vacant Facility building. This work is documented in Section 3.7.

3.2 PRE-EXCAVATION TESTING

Pre-excavation characterization testing was conducted in advance of certain remedial activities as described below.

3.2.1 Railroad Right-of-Way Testing

The AOC allowed for relocation of ACS from the railroad right-of-way onto the "Placement Area" if pre-testing determines that there "are no hazardous wastes or that the hazardous wastes do not exceed regulatory limits". Samples were collected by OTO and analyzed in accordance with a June 23, 2010 work plan approved by USEPA and described in Section 2 of the SSWP. The results, presented in the approved SSWP, indicated that relocation of the Railroad Right-of-Way ACS to the planned Placement Area Cap was consistent with State and Federal regulations and guidance.

Excavation of ACS from the Railroad Right-of-Way required removal of the abandoned rail ties. The ties were removed between October 6 and October 22, 2010. The ties were cleaned of soil residues with a high pressure water rinse on a decontamination gravel pad in the Placement Area. The cleaned ties were then staged on the paved parking lot and covered with plastic sheeting. A composite sample from the cleaned ties was collected and test results are summarized in Table 1. Analytical data sheets are included in Appendix D. Results indicate the ties were not a hazardous waste and therefore suitable for disposal at the Sunny Farms Landfill in Fostoria, Ohio. The ties were transported off-site on November 11, 2011. Shipping records are attached in Appendix D. USEPA determined the ties were construction debris rather than remedial waste and its formal approval of this disposal was not required.

3.2.2 July 2010 ACS Testing

A July 7, 2010 work plan was submitted to USEPA for approval to conduct a fast-tracked ACS testing on the "Cernak" and "Elastomerics" parcels. These parcels lie within or proximate to wetlands. As such, fast-tracked data was needed to pre-determine the lateral and vertical limits of excavation in support a Notice of Intent filing with the Easthampton Conservation Commission. USEPA approved the scope of work with modifications. The testing program was documented in Section 2.3.2 of the USEPA approved SSWP, and is summarized below.

Ten foot on center grid points were established in the areas where prior (2000/2001) sample locations A+15, A+45, A+50, A+55, AA+45, E+20 and F+20 (see Figure 4) indicated trace detections of asbestos. These prior detection locations were established by a licensed surveyor as reference points in establishing the grids. Additionally, corner points of the grid areas were surveyed following completion of sampling activities.

The samples were collected by an asbestos licensed professional using a T-handle core sample tool and disposable copper sampling cores. Prior to sampling, a small area of surface vegetation and/or debris was carefully parted or otherwise pushed aside without disturbing underlying soils. Because the soil samples collected were located within/proximate to wetland areas, samples were naturally moist and did not require dust control. At each grid sample location, a disposable 3 inch copper tube was inserted into the core sampler which was then depressed into the soil to a depth of three inches. The core containing the 0" to 3" soil sample was then immediately placed back into the plastic core sleeve and then into a labeled plastic whirl pack bag and sealed. Samples were labeled in the manner discussed in Section 2.3.2 of the USEPA approved SSWP. Soil samples were submitted to EMSL Analytical, Inc., Cinnaminson, NJ, (EMSL) for asbestos testing in accordance with EPA Method 600/R-93/116 using the PLM visual estimation method. Additionally, at the seven prior sampling points (A+15, A+45, A+50, A+55, AA+45, E+20 and F+20), 6 inch sample cores were collected from the interval of 6 to 12 inches. These samples were collected after excavating the upper 6-inches with a hand shovel.

Analytical results indicated asbestos was not detected in the samples. Based on these results, OTO developed the planned excavation limits for the Cernak and Elastomerics parcels as discussed in Section 3.2.4. These conservatively proposed 50 by 50 foot excavations centered at each of the 2000/2001 sample locations described above and shown on Figure 4. Vertical excavation limits in the Cernak and Elastomerics parcels were established at 6 inches as described in Section 3.2.4.

3.2.3 Tennessee Gas Pipeline

Test pits and soil borings were conducted to assess the vertical limits of ACS within the Pipeline easement, as described below. A general idea of the lateral and vertical limits of ACS was needed to obtain Tennessee Gas approval of the excavation of ACS within the easement. The pipeline was installed after ACS was deposited within the area of the easement. It was suspected that ACS was used as backfill around the pipeline during its construction. This belief was supported by the investigation results summarized below.

Test Pits – September 21, 2010

Test pits TP-N and TP-S were excavated by BGL Corporation of Agawam, Massachusetts on September 21, 2010 using a Bobcat 337 Track Excavator. Martin Tomazewski of Tennessee Gas (TG) was on site to direct BGL's work and to locate the pipeline. The purpose of the test pits was to locate the depth of the pipe at two locations. Mr. Tomazewski electronically marked the pipeline and required BGL to stop all mechanical excavation 2 feet from the pipeline. Mr. Tomazewski then carefully exposed the pipe by hand. Test pit logs are attached in Appendix C. Test pit locations are shown on Figure 6.

Backfill adjacent to the pipeline consisted of silt and clay, frequently containing micaceous minerals indicating vermiculite. The top of the one foot diameter pipeline was exposed at

4.5 feet below grade in TP-N. The pipeline could not be located by Mr. Tomazewski at a depth of 8 feet in the south test pit (TP-S). As a result, the nearby pipeline vent pipe was open to a depth of 9.5 feet below grade where the pipe was located at or below this depth in this area.

Soil Borings – September 22, 2010

Soil borings TPL-1 through TPL-9 were drilled by Seaboard Environmental Drilling of Chicopee, Massachusetts on September 22, 2010 using a Geoprobe direct push drill rig. Martin Tomazewski of Tennessee Gas was on site to locate the pipeline and to approve each boring location. The borings were located 5 feet from the centerline of the pipeline at approximately 50 foot centers, staggered along the east and west sides of the pipeline. Borings were drilled until natural silts and clays were encountered. Boring logs are attached in Appendix C. Boring locations are shown on Figure 6.

Soil samples were collected in continuous 4 foot long, one inch diameter plastic sleeves. After the sleeves were opened in the field, an OTO asbestos licensed professional prepared a composite sample for each vertical foot. The samples were submitted to EMSL Analytical, Inc., Cinnaminson, NJ, (EMSL) for asbestos testing in accordance with EPA Method 600/R-93/116 using the PLM visual estimation method. Analytical results are attached in Appendix C and are summarized in Table 2. In general, the test results were consistent with boring log information in that ACS was typically detected in pipeline backfill material where micaceous minerals were noted, and ACS was not detected in samples of natural silts and clays where such minerals were not noted.

As indicated in Table 2, no asbestos was detected in borings TPL-1 and TPL-6 located off-site to the north of the 19 Wemelco Way property. Within the 19 Wemelco Way property, trace levels of asbestos were detected to depths of 1 to 2 feet below grade over the central and northern portion of the easement. In the southern portion of the easement area, depth of impacted fill increased to 11 feet at TPL-5, consistent with the increasing depth of the pipeline observed in the southern test pit (TP-S) noted above. While the depth of impacted pipeline backfill increased to the south, ACS concentrations remained at trace levels.

Detection of ACS in borings at depths below 10 feet in the southern portion of the Wemelco Way easement was consistent with test pit observations. Based on these results, additional test pits were dug on October 8, 2010 as described below.

Test Pits – October 8, 2010

Test pits TP-1 TP-2, TP-3 and TP-4 were excavated by BGL Corporation of Agawam, Massachusetts on October 8, 2010 using a Volvo 140Blc Excavator. Martin Tomazewski of Tennessee Gas (TG) was again on site to direct BGL's work. The purpose of the second round of test pits was to further evaluate the depth of ACS in the southern portion of the Wemelco Way pipeline easement in the vicinity of prior borings TPL-5 and test pit TP-S.

Test pit logs are attached in Appendix C. Test pit locations are shown on Figure 6. Key findings were:

- An abandoned 10-inch diameter pipeline sleeve was found at a depth of 5.5 feet below grade, approximately 7 feet to the east of the active line. The abandoned line likely limited excavation depths to the east of the live line. As indicated by TG, the abandoned line likely had to stay in use and undisturbed during the new pipeline construction.
- Natural soils were present within approximately 2 feet below grade over most of the southern portion of the easement. TG personnel indicated that the areas of deep excavation for the pipeline excavation were likely limited to the immediate vicinity of TPL-05 and TP-S to facilitate coring of the pipeline beneath the railroad tracks to the south.

Soil samples were submitted to EMSL Analytical, Inc., Cinnaminson, NJ, (EMSL) for asbestos testing in accordance with EPA Method 600/R-93/116 using the PLM visual estimation method. Results are provided in Table 2.

Summary

In summary, the test pit and boring data generally indicated 1 to 2 feet of ACS needed to be excavated from the pipeline easement and moved to the Placement Area to the east of the easement. Greater thickness of impacted fill (up to 11 feet) was present in the southern portion of the easement. Based on these results, Tennessee Gas and their contractor (PL Enerserv) were contacted to obtain their approval to safely remove this material. This removal was subsequently conducted as described in Section 3.4.

3.2.4 Pre-Excavation Asbestos Testing

The SSWP allowed for pre-excavation soil sampling and analysis for asbestos to pre-define the lateral limits of excavation, following the sampling methods described in Section 3.2.2. Pre-excavation verification samples were collected between September 17 and October 22, 2010. Test results are attached in Appendices E and F. Results are presented below. This testing was in addition to the pre-excavation testing to define the lateral limits of excavation in the Cernak and Elastomerics Parcels, summarized in Section 3.2.2.

Lateral Limit Samples

The planned lateral limits of excavation were based primarily on the 2000/2001 test results presented on Figure 4. Additional samples were collected and analyzed for asbestos to refine estimates in certain areas at the locations shown on Figure 7. Results are summarized in Table 3 along with collection dates.

As indicated, results were generally consistent with the extent of ACS defined by prior studies (Figure 4). However, trace detections of asbestos extended beyond the planned

excavation limits in three areas. The extent of the ACS in these areas was further defined as described below and subsequently relocated within the Placement Area.

Eastern Boundary of Placement Area

Asbestos was detected in samples at locations LLSS-01 and LLSS-02 sampled on September 29, 2010. As a result, five additional delineation samples were collected on October 12, 2010 from adjacent wetland areas at locations approved by USEPA and shown on Figure 7. The results from these samples (LLSS-01-5'E, LLSS-01-5'S, LLSS-01-5'N LLSS-02-10'N, LLSS-02-20'S0), summarized in Table 3, indicated no asbestos detections.

Southern Boundary of Railroad Right of Way

Asbestos was detected in samples LLSS-23 and LLSS-24 collected on October 7 and 8, 2010. Additional delineation samples LLSS-23-5'S, LLSS-23-5'E, LLSS-23-5'W, and LLSS-24-1'S) were subsequently collected at the locations shown on Figure 7 to determine the additional extent of ACS to be excavated. No asbestos was detected, except at LLSS-23-5'W located 5 feet west of LLSS-23. A second sample collected 5 feet further west (LLSS-23-10'W) did not detect asbestos and confirmed the limited extent of ACS in this area.

Northern Edge of Site

Trace asbestos was detected at sample LLSS-35 on October 11, 2010. Additional samples LLSS-35-5'N, LLSS-35-5'E, LLSS-35-5'W were collected at USEPA approved locations. As indicated in Table 3, asbestos was not detected.

Vertical Limit Samples – Pre-Excavation

Pre-excavation, five point composite samples were collected from a depth of three to six inches below grade at locations that include the DOS (DOS-1, DOS-2 and DOS-3) excavation areas, and the Elastomerics Northern (EL), Elastomerics Southern (ERS) and Cernak parcels (CRN 4/6/8, CRN 10/12/14, and CRN G&H). These locations are shown on Figure 7. Each composite was collected from an approximately 2,500 square foot grid. The grid was sectioned with quadrants. Individual samples were collected at the centers of each quadrant and at the grid center using sample coring methods described in Section 3.2.2. The individual samples were then composited for asbestos analysis. Analytical results are shown in Appendix F and summarized in Table 4. Note the laboratory results for EMSL order 041021729 incorrectly shows samples labeled as ERN and ERS and should read as CRN and CRS, respectively.

As indicated on Table 4, asbestos was not detected in the 3 to 6 inch depth samples at the DOS, Cernak, and Elastomeric parcels. Based on these results, the excavations in these areas extended to a depth of 6-inches below grade.

3.2.5 Backfill Testing

Backfill sources to be used in the Placement Area cap and to backfill excavated areas was initially sampled and analyzed to confirm it was free of hazardous substances above background levels. Material tested included topsoil, sand fill, and wetland fill. Analytical data sheets are included in Appendix G for materials selected for Site use. Results are summarized in Table 5 and indicated materials were suitable for use. Semi-volatile organic compounds were detected at concentrations within MassDEP's published natural soil background levels or are natural constituents of organic soils (i.e. vitamin E).

3.3 SITE PREPARATION

The Site Contractor, BGL Corporation of Agawam, Massachusetts, mobilized to the Site for start of work on September 27, 2010. In accordance with the Easthampton Conservation Commission (ConCom) Order of Conditions dated August 30, 2010, silt wattles were placed along wetland boundaries in the areas of planned work. The preparation work was conducted between September 27 and October 1, 2010. The installations were inspected and approved by the ConCom in sections on September 29 and October 1, 2010. Brush and tree clearing was initiated by BGL's subcontractor (Northern Tree Service) on September 27, 2010 and completed on October 6, 2010.

3.4 ACS EXCAVATION AND PLACEMENT

3.4.1 General Operations

Between October 12 and November 18, 2010, an estimated 2,700 cubic yards of ACS was removed from portions of the Site and placed within the Placement Area shown on Figure 5. Estimated excavation thickness and volumes from the individual parcels are summarized in the following table.

Summary Table
Site Excavation Volumes
2010

Excavation Area	Excavation Dates	Thickness Range	Estimated Volume (cubic yards)
Elastomeric Parcels	October 25	6 inches	40
Cernak Parcel	October 26 - 28	6 inches	80
DOS Parcel	October 12 – 13	6 inches	80
Railroad Right of Way	November 11-19	8 to11 inches	1,400
Pipeline Easement	November 15-19	2 to 12 feet	700
Zonolite (Outside of Placement Area)	October 18 November 9, 12, 16	6 to18 inches	400
Total Estimated Volume			**2,700**

Excavation was conducted by BGL, except for the pipeline easement excavation which was performed by PL Enerserv of Westfield, Massachusetts at the request of Tennessee Gas. The excavations were observed and documented by an OTO licensed asbestos inspector (Chris Streeter). Excavations were initially guided in the field based on consideration of pre-excavation test results described in Sections 3.1 and 3.2, as well as observations of micaceous minerals that could be indicative of vermiculite residues. General methods for excavation, loading, and transport of ACS from the excavation areas are described below.

Special handling of ACS was required for areas where ACS was detected above trace limits. These areas were previously determined and are shown as red shaded areas on Figure 4. The Placement Area was staked in the field to guide placements. Excavated soils containing greater than 1% asbestos were placed only within portions of the Placement Area which also exceeded trace levels. Areas of trace detections of asbestos were relocated within the Placement Area without restriction.

Water was sprayed liberally to the areas of active excavation areas and during loading to suppress dust. With city approval, potable water from the facility fire hydrant was used as a water source. Excavation work was not allowed during periods of sustained high wind (over 20 mph). Wind speeds were regularly monitored. No sustained winds of concern occurred. Air monitoring results (Section 3.8) indicated these efforts were successful in preventing asbestos exposures to Site workers and the general public during the project.

Smooth face buckets were used for ACS excavation, so as to prevent vertical migration of ACS. In addition, unless verified by post excavation testing, excavations were made in at least 2 vertical lifts so as to limit the potential for cross contamination of the final excavation surface during the excavation process.

Excavated ACS was placed directly into dump trucks to avoid spilling of soil onto non impacted areas that could result from temporary stockpiling. No over filling of trucks was permitted so as to prevent any spillage during transportation to the Placement Area and each load was covered. As a contingency against possible loading spills, 6 mil plastic sheeting was placed on the ground between the excavation area and the dump truck to catch any soil spills. At the end of each construction day, temporary plastic sheeting was placed and secured to prevent exposure to disturbed ACS. Temporary plastic sheeting was maintained in excavated areas until testing indicated remediation criteria were met.

Siltation barriers were placed on the down slope margins of excavations and soil management areas to minimize potential for migration of ACS outside of planned areas of excavation.

Final lateral limits of excavation are shown on Figure 7, along with final lateral limit sample locations. Lateral excavation limits were determined prior to excavation as noted in Section 3.2.4. Vertical limits of excavation samples were typically collected as five point composite at the base of excavation for each 2500 square foot grid area. Areas of the vertical composite

samples are shown on Figure 7. Final test results at the lateral and vertical limits of excavation were non-detect, as noted in Tables 3 and 4.

3.4.2 Specific Excavation Areas

Additional information for specific excavation areas are provided below.

Rail Road Right-of-Way

In the area of the former rail ties, the excavation reached a depth of 8 inches to coincide with the base of rail ties. The 6 inch excavation was conducted within the Right-of-Way, outside of the ballast.

Vertical excavation limits were confirmed after excavation at locations RRRW-1 through RRW-17, using the 5 point composite grid sampling protocol. Results (Table 4) indicated no detection of asbestos at the base of these excavated areas. Two portions of the right-of-way, shown to be free of asbestos in prior studies (Figure 4), were voluntarily excavated to a depth of at least 6 inches below grade and soils relocated within the Placement Area. These areas are located between grids RRRW-6 and RRRW-7 and between RRRW-12 and RRRW-13. Since excavation of these areas was not required, no confirmatory tests for asbestos were made.

Area Between Building and Pipeline Easement

The area between the Site building and the Pipeline Easement area (grid area CP-18) was initially excavated on November 9, 2010 to a depth of 6 inches to 12 inches due to local observations of micaceous minerals. In accordance with the SSWP, the excavated area was temporarily covered by plastic sheeting, pending vertical confirmatory results at composite locations RRRW-10, 11, 12, and CP-18. Asbestos was detected at RRRW-10, RRRW-11, and CP-18. Additional soil removal of 6 to 9 inches was performed on November 18, 2010. Vertical confirmation analytical data (samples RRRW-10(REDO), RRRW-11(REDO), and CP-18(REDO) indicated no asbestos detected and further excavation was not warranted in this area.

Pipeline Easement Excavation

Removal of asbestos-containing soils from the Pipeline easement was conducted by PL Enerserv from November 15 through 19, 2010. Excavation depths ranged from 13 feet adjacent to the pipe in the southern portion of the easement to 6 feet adjacent to the pipe in the northern portion. Excavation more than 5 feet laterally from the pipe, generally averaged two feet deep where natural soils were encountered. The excavated material was silty clay mixed with micaceous minerals. The excavation extended vertically approximately 6 to 12 inches into natural silty clay. Five point vertical composites were collected (PL-1 through PL-4) after excavation. Asbestos was not detected.

Stormwater runoff with some groundwater seepage was generated from the excavation and was temporarily stored on-site in a 20,000 gallon frac tank, pending off-site disposal. BGL filtered approximately 6,750 gallons of water contained in the frac tank through a 5 micron filter. On December 7, 2010, Oil Recovery Corporation (ORC) disposed the filter water under a Massachusetts Bill of Lading at the Easthampton Waste Water Treatment plant. Copies of the Bill of Lading are attached in Appendix D. Oil Recovery Corp. returned to the site on December 16, 2010 to remove standing surface water located in the parking area of the site to allow the changing of the silt socks in the catch basins. An additional 7,443 gallons were removed from the site and disposed under a generic manifest to the Easthampton Waste Water Treatment plant.

3.5 EXCAVATION BACKFILL AND SEEDING

Excavated areas were backfilled to original grade after confirmatory pre- or post-excavation testing described in Sections 3.2 and 3.4 indicated no detectable levels of asbestos. Backfilling was done between October 13 and December 10, 2010 for the following parcels:

-DOS	October 13, 2010
-Elastomerics	October 27-28, 2010
-Cernak	October 28, 2010
-Zonolite	October 29 – December 8, 2010
-Pipeline	November 15-19, 2010
-Railroad	November 30 – December 10, 2010

Backfill materials included:

1) Wetland fill within the wetland excavation areas;
2) Top soil within the Northern Elastomerics parcel and within portions the Railroad Right-of-Way outside the limits of a planned Bike Path;
3) Top soil within the upper six inches of the Pipeline easement with granular (sand) fill below 6 inches;
4) Crushed stone within the DOS parcel, on the slope between the DOS parcel and the parking lot, and within the area between the parking lot and the pipeline easement.

Top soil areas were hydro-seeded on December 9, 2010. A wetland seed mixture was applied to the wetland areas on October 29, 2010, using a seed mixture approved by the Easthampton Conservation Committee (ConCom). Wetland shrubs and trees were planted within the Elastometric parcels on May 9, 2011, as required by the ConCom.

3.6 CAPPING OF SOIL PLACEMENT AREA

Following brush and tree clearing, the approximately 47,000 square foot Placement Area was rough graded prior to placement and grading of the estimated 2,700 cubic yards of excavated ACS described in Section 3.4. Placement work was completed between October 12 and December 10, 2010. After placement, the ACS was capped in sequence by a geotextile fabric

layer (Mirafi N140), 18 inches of clean sand fill, and 6 inches of topsoil. In the east half of the Placement Area, the contractor inadvertently installed a Mirafi N135 fabric until the error was discovered. In this portion of the Site, the Mirafi N140 fabric was placed directly over the out-of-spec fabric.

The cap was completed on December 10, 2010. Final grade of the cap surface is shown on Figure 8.

The Placement Area Cap was originally hydro-seeded on December 10, 2010. After hydro-seeding, steeper sloped areas of the Placement Cap and excavated areas bordering wetlands were covered with erosion resistant coconut mats. May 2011 photographs of the completed cap are provided in Appendix I. Because the hydro-seeding was conducted in late fall, some erosional damage was repaired and reseeded in April 2011 as reflected in the photographs.

3.7 ASBESTOS ABATEMENT OF FORMER ZONOLITE BUILDING

On December 22, 2009, USEPA START personnel visited the site and collected microvacuum dust and bulk samples from within the interior of the building for asbestos analysis. OTO personnel accompanied the START team personnel and observed the sampling. Visible vermiculite insulation debris was observed on the floor surfaces in the former office section inside the building. Upon further assessment, it was discovered that vermiculite insulation was used to insulate the ceiling cavities of the office section of the building. A mezzanine with a plywood deck was located above the office section of the building.

The microvacuum dust samples were analyzed for asbestos content using transmission electron microscopy (TEM). TEM analysis can identify asbestos fibers from other types of fibrous material and can also identify the type of asbestos fiber. Libby Amphibole (LA) asbestos includes tremolite, actinolite, winchite, and richterite.

Results of the sample analysis detected the presence of chrysotile, tremolite, and actinolite asbestos fibers in some dust and bulk samples. While it was not clear as to the extent to which amphibole fibers were associated with prior vermiculite processing operations, these materials were abated and the building cleaned by a Massachusetts licensed asbestos contractor. The abatement work was conducted by Abide, Inc. (Massachusetts Asbestos Contractor License No. AC000245) between December 6, 2010 and January 19, 2011 and involved two phases of work. An OTO licensed asbestos project monitor was onsite throughout the asbestos abatement and cleaning and observed and documented the abatement work of the contractor.

The first phase was to remove and dispose the vermiculite insulation from the ceiling joist cavities above the office area in the western portion of the building and in the shipping office in the eastern portion of the building. This work was conducted between December 6, 2010 and January 19, 2011. The vermiculite was removed using high capacity vacuums with HEPA filtration. The cavities were then cleaned using HEPA vacuums and wet wiping

cleaning methods. Abatement work in the office area was expanded to include wall cavities when vermiculite debris and dust were observed within wall cavities. Removal of office mezzanine flooring and wall surface was necessary to facilitate access to affected areas. Following the abatement work and before containment sheeting was removed, post abatement clearance inspections and air testing were completed in accordance with the EPA post-abatement AHERA clearance criteria.

The second phase of the abatement involved cleaning of the interior warehouse/operational portion of building surfaces of dust and debris. Cleaning was performed by Abide between December 20, 2010 and January 3, 2011 using HEPA vacuums and wet wiping cleaning techniques. In accordance with EPA post abatement AHERA clearance criteria, the warehouse portion was assessed for the presence of dust and visible debris. Post-abatement clearance air monitoring was performed on January 3, 2011.

Further documentation of completion of the abatement work is provided in Appendix J. This documentation includes:

1) Three post-abatement clearance reports by OTO. These are dated January 3, 2011 for the warehouse area, January 27, 2011 for the main office area, and February 7, 2011 for the Shipping office. The post-abatement clearance reports (completed and signed by Chris Streeter, a Massachusetts Licensed Asbestos Project Monitor - AM-072183) indicate visual assessment identified no visual debris. Post-abatement clearance air samples were below the EPA post-abatement clearance criteria (AHERA).

2) Abide Post-Abatement Documentation Reports dated April 6, 2011 and July 22, 2011. These reports include the required MassDEP notification forms, copies of licenses and training certificates, sign-in logs and asbestos waste disposal documentation for 41 cubic yards of asbestos materials at the BFI Imperial Landfill facility in Imperial, Pennsylvania.

It should be noted that Abide's disposal included associated asbestos waste debris from BGL's construction activities, including PPE (Personal Protection Equipment) and plastic sheeting used for temporary covers of ACS.

3.8 PROJECT HEALTH AND SAFETY

The sensitivity of exterior excavation, transport, placement, and capping of the asbestos containing soil required significant care to prevent exposure to workers and the general public. As such, the work was conducted and performed under a site specific health and safety plan. Personnel (i.e. visitors, vendors, contractors, and sub-contractors) entering the site were required to stop at the job site trailer to sign-in and check with the site supervisor. Personnel working onsite were also required to document that they have read and were aware of the site specific safety and health plan for the site.

All personnel working on the site were required to have the prerequisite safety and health training (i.e. OSHA HAZWOPER 29 CFR1910.120, asbestos 29 CFR 1926.1101) before working at the site. Daily safety and health training sessions (e.g., toolbox safety meetings) were performed for personnel working onsite. The training topics were applicable to the hazards and conditions that were encountered and for the work that was being performed.

Personnel working and visiting the site were required to wear personnel protective equipment (PPE). The minimum level of PPE required at the site was Level D and included hard hat, safety glasses, high visibility outer garments, and safety shoes. Additional PPE was required based on the work activity and hazard. Level C protection was worn during interim asbestos abatement activities and included full body tyvek coveralls, impervious boots, gloves, and respiratory protection. Specialty safety equipment was used for specific work assignments and included Kevlar chaps for personnel working with chainsaws, fall protection harnesses and lanyards for personnel working in manlifts and at elevations.

Site specific work zones were established on a daily basis for the work that was being performed (i.e asbestos abatement, excavation, etc.). These safety work zones were demarcated using temporary construction fencing, signs, barrier tape, and traffic cones. The safety zones were used to establish areas where specific PPE was required and create a barrier to hazardous work areas of the site.

A key component of the Safety and Health program was routine air monitoring. Two types of daily air monitoring were performed. For workers, personal air sampling for asbestos fibers were collected on a daily basis using battery powered industrial hygiene sampling pumps. The personal air samples were collected and analyzed according to the NIOSH 7400 sampling methodology. The asbestos air samples were analyzed onsite by an OTO asbestos project monitor. OTO asbestos project monitors receive NIOSH 582 equivalency training for asbestos air sample analysis and participate in the American Industrial Hygiene Association (AIHA) Asbestos Analyst Registry and inter-laboratory round robin quality assurance programs. Personal air monitoring results for onsite personnel are provided in Appendix J. The asbestos air monitoring results were consistently well below the OSHA exposure limits and the EPA clean air clearance criteria levels, supporting the field methods used to limit potential dust generation.

In addition to personal air monitoring, ambient perimeter air monitoring stations were established and air samples collected for each work day and analyzed for asbestos by phase contrast microscopy according to the NIOSH 7400 methodology. Ambient air monitoring stations are shown on Figure 5. Air monitoring stations were generally located around the work area with emphasis on the down wind side. Ambient air monitoring also provided a quality control for dust control and documented background levels. As indicated, no asbestos was detected and results were well below the EPA clean air clearance criteria.

This project involved several high hazard operations including the removal of trees and stumps, grubbing, and site excavations adjacent to the Tennessee Gas Pipeline. Extensive excavations were made adjacent to a high pressure natural gas pipeline in order to remove

ACS and prevent potential future exposure to gas line personnel should repairs or alterations to the pipeline be necessary. OTO and Site contractors worked closely with representatives of Tennessee Gas to conduct this work without incident.

A site specific emergency response plan was also established as part of the Health and Safety Plan. The emergency response plan and the work being performed on the site was communicated to the local police, fire and emergency medical services. All personnel working onsite were trained in the emergency response plan and its implementation.

On December 13, 2010 the emergency response plan was implemented when one of Abide's workers felt ill while on the jobsite. The worker complained of nausea and a headache and initially thought it was due to a recent change in personal prescription medication. It was quickly discovered that the worker's symptoms were due to carbon monoxide being generated from an electrical generator. As a precaution, four Abide workers performing asbestos abatement inside the building were transported to the hospital for evaluation of possible exposure to carbon monoxide. As a conservative measure, city emergency responders were called to the site and OSHA was notified. OSHA personnel investigated the incident and met with the workers. Abide was issued a citation for exposing workers to carbon monoxide above the permissible exposure limit. The workers were released from the hospital the same day and were available for work the following morning. Abide connected to public electricity so that a generator would not be used for the remainder of the building abatement.

No other safety and health-related incidents occurred during the project.

4.0 ACTIVITY AND USE LIMITATION (AUL)

In accordance with MassDEP regulations (310 CMR 40.1070), an Activity and Use Limitation (AUL) will be filed with the Hampshire County Registry of Deeds to restrict uses and activities within the Placement Area that could potentially expose ACS under the Cap. A draft of the proposed AUL was submitted under separate cover to USEPA and MassDEP for review and approval. A registered copy of the AUL filed on September 13, 2011 is provided in Appendix K.

5.0 SUMMARY AND CONCLUSIONS

In summary, upon USEPA and MassDEP approval of the AUL, remedial actions required under the USEPA Administrative Order on Consent (AOC) have been completed in accordance with the approved Site Specific Work Plan (SSWP), and further response actions are not required. In particular, asbestos containing soil from properties abutting the former Zonolite Facility have been removed, placed within the eastern portion of the former Zonolite Facility, and capped by a geotextile fabric followed by at least 2 feet of soil cover. Future use and activities within the capped area will be limited by the AUL so as to maintain the long-term integrity of the cap.

In addition to cap construction, amphibole asbestos abatement work was conducted within the former Zonolite facility building as required in the SSWP. Post-abatement air testing confirmed abatement criteria were met.

The work was conducted in a manner which did not result in asbestos exposure risk to site workers or the general public. This conclusion is based on daily worker and perimeter air monitoring.

OTO has appreciated the opportunity to work with W. R. Grace on this project and the cooperation of USEPA, MassDEP, and the City of Easthampton.