SCANNED

Cambridge
62 Whittemore Av
3-0271

N/A-C

REPORT ON
RESPONSE ACTION OUTCOME (RAO) STATEMENT
W.R. GRACE & CO.
62 WHITTEMORE AVENUE
CAMBRIDGE, MASSACHUSETTS
RTN 3-0277, TIER 1C PERMIT NO. 118529

VOLUME I OF III

by

Haley & Aldrich, Inc.
Boston, Massachusetts

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on behalf of

W.R. Grace & Co.-Conn.
Cambridge, Massachusetts

Submitted to

Massachusetts Department of Environmental Protection
Boston, Massachusetts

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File No. 10063-066
March 2006

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13 March 2006
File No. 10063-066

Massachusetts Department of Environmental Protection
205B Lowell Street
Wilmington, Massachusetts 01887

Attention: Mr. Jack Miano

Subject: Class A-3 Response Action Outcome Statement
W.R. Grace & Co.-Conn.
62 Whittemore Avenue
Cambridge, Massachusetts
RTN 3-0277, Tier 1C Permit No. 118529

Ladies and Gentlemen:

This Class A-3 Response Action Outcome (RAO) Statement is provided on behalf of the W.R. Grace & Co.-Conn. for the property located at 62 Whittemore Avenue and One Alewife Center, in Cambridge, Massachusetts. This RAO has been prepared in accordance with 310 CMR 40.1056(2) of the Massachusetts Contingency Plan (MCP).

The original RAO Statement & Downgradient Property Status Transmittal Form is attached. A copy of the Transmittal Form is included in Appendix A. An RAO submittal fee is not necessary, as the Disposal Site has already been Tier Classified. Notification regarding the availability of the RAO has also been sent to the Cambridge City Manager and the Cambridge Public Health Department, and copies of the letters are included in Appendix A.

This RAO Statement is being submitted following the successful completion of Phase II Site Assessment activities, a Phase III Remedial Action Plan, and implementation of a successful Bioremediation Release Abatement Measure (RAM), associated with identified soil contamination.

If you have any questions or require additional information, please do not hesitate to call the undersigned.

Sincerely yours,
HALEY & ALDRICH, INC.

Jennifer L. Sweet, P.E.
Senior Engineer

William W. Beck, Jr., LSP of Record
Senior Vice President

Enclosures

c: Department of Environmental Protection; Attn: Ms. Patricia M. Donahue
W.R. Grace & Co. – Conn.; Attn: Mr. Robert Jenkins, Ms. Maryellen Johns
PIP Repositories: W.R. Grace & Co.-Conn, Cambridge Main Library, North Cambridge Library, Cambridge Health Alliance - Cambridge Public Health Department
City Council, City of Cambridge; Attn: Ms. Marjorie Decker
Cambridge Environmental Inc.; Attn: Mr. Edmund Crouch
Alewife Neighbors, Inc.; Attn: Mr. Mike Nakagawa
Alewife Study Group; Attn: Mr. Ronnie Miller

OFFICES

EXECUTIVE SUMMARY

This Class A-3 Response Action Outcome (RAO) Statement has been prepared in accordance with 310 CMR 40.1056(2) of the Massachusetts Contingency Plan (310 CMR 40.0000, MCP). The Disposal Site ("Site" or "Disposal Site") is located at 62 Whittemore Avenue in Cambridge, Massachusetts (Figures 1 and 2).

The property has had an industrial use from the early 1920s, when Dewey & Almy began operations at the Site. Historically, up to 46 buildings have been distributed over approximately two-thirds of the Site. Currently, nine inter-connected structures along the northern portion of the Site are all that remain. Industrial sealants and metal can sealing machinery were historically manufactured at the Site by Dewey & Almy and Grace as well as dispersants for use in paints, cement, and other water based materials. These operations involved the use and storage of oil and hazardous materials (OHM).

Asbestos may also have been used by Dewey and Almy in conjunction with pilot-scale brake research operations in the 1930s. These pilot-scale operations may have involved a pilot production line for manufacturing a type of brake lining that was molded with asbestos and latex and are believed to have occurred in former Buildings 11 and 12 (Figure 3). Additionally, in the late 1960s and the 1970s, Grace conducted laboratory analysis and research on small amounts of asbestos-containing materials. All of these uses of asbestos are thought to have been small in scale and not consistent with any product manufacturing.

In 1985, as part of a plan to develop portions of the property, Grace voluntarily conducted an assessment to evaluate the subsurface and hydrogeological conditions at the property. Several phases of subsurface explorations were conducted from 1984 through 1999 to characterize potential impacts from OHM on soil, groundwater, surface water, and sediment. Not only were the standard compounds typically included in a site characterization tested for, but also specific additional compounds were included based on their use at the Site. Laboratory testing has included the analyses of samples for at least 132 individual compounds.

In 1998, Grace voluntarily undertook two sampling programs to investigate for the potential presence of asbestos in soil at the Site. A total of 906 soil and split soil samples were collected by Grace, and analyzed by Grace, the Alewife Study Group, and the City of Cambridge. Subsequent to the completion of the soil sampling program, groundwater, surface water, and sediments samples were also collected and submitted for analysis for asbestos.

Soil has been found to be impacted by several volatile organic compounds (VOCs), metals, petroleum hydrocarbons, semi-volatile organic compounds (SVOCs), formaldehyde, and cyanide. Soil has also been found to contain asbestos fibers. The primary contaminants identified at the Site are petroleum products, naphthalene, and asbestos. An insignificant amount of asbestos containing material (ACM) debris has been found in the fill materials. Based on results of the EPA site investigation for asbestos in 2000, it has been concluded that asbestos fibers are not present in the top 3-inches of surface soil. Naphthalene has historically been the contaminant of concern in groundwater. After more than 15 years of periodic groundwater monitoring, concentrations of naphthalene were either not detected or have exhibited a decreasing trend at sampling locations over the majority of the Site. Most recently in 2003, naphthalene was only detected in six out of 13 samples in groundwater. The detected concentrations were significantly lower than the MCP Method 1, GW-2 and GW-3 criterion.

The horizontal Disposal Site limits for soil shown on Figure 12 have been set for convenience to cover a much larger area than the actual limits of contamination. The extent of the more contaminated soil is limited to four small areas as shown on Figure 12. Although included within the horizontal limits of the Disposal Site, evidence does not exist to suggest that the surface water and sediments of Jerry's Pond have been appreciably contaminated as a result of the historic releases of OHM and asbestos at the Disposal Site. The pond has been included within the limits of the Disposal Site mainly due to the logistical difficulties of recording its limits at the Registry of Deeds. The limits of the Disposal Site for the naphthalene-contaminated groundwater are also shown on Figure 12.

An evaluation of risks to human health, safety, public welfare and the environment has been completed as a part of this RAO. No Significant Risk to human health, safety, public welfare and the environment exists with current site conditions. For foreseeable future conditions, the Site is likely to continue to be used in a manner consistent with its current use as a commercial facility and thus maintain a condition of No Significant Risk. However to be conservative, the Risk Characterization evaluated a hypothetical future construction scenario that would disrupt and expose contaminated soil and groundwater that is not currently exposed. Under the hypothetical construction scenario, the potential future risks associated with potential exposure to asbestos in soil exceed DEP's guidelines for achieving a condition of No Significant Risk.

The characterization of risks to public welfare under the hypothetical construction scenario concluded that potential odors generated during the excavation of naphthalene contaminated soils could potentially create a nuisance condition. Therefore, the risk characterization concluded that a condition of No Significant Risk to public welfare could not be achieved without mitigating efforts.

These possible future exposures can be best managed so that a condition of No Significant Risk is maintained by implementing an Activity and Use Limitations (AUL). Therefore, an AUL has been implemented at the Site. The purpose of the AUL is to control potential exposure to the underlying soil. Site uses allowed under the AUL are consistent with the current and reasonably foreseeable uses of the Site and include office, industrial, retail commercial, and research and development ("R&D"), as well as associated grounds-keeping activities, limited excavation and subsurface activities.

The AUL requires that the top six inches of surface soil, and existing pavement and concrete slabs, pavement and concrete slab sub-base materials, structures, top soil/loam, landscaping or the like be maintained as "Protective Cover." Prior to the commencement of activities that are likely to disturb the soil below the Protective Cover, Soil Management, Health and Safety, Airborne Asbestos, Dust, Odor Management and Monitoring Plans are to be implemented as discussed in the AULs. Such Plans are to be submitted for public review and comment. Changes to the AULs or monitoring plans are to be provided in draft form for public comment.

With the AUL recorded on the deed for the Disposal Site, the Risk Characterization concludes a condition of No Significant Risk of harm to human health, safety, public welfare, and the environment at the Disposal Site for current and foreseeable future use and a Class A-3 RAO can be achieved at the Site.

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1. INTRODUCTION

1.1 Disposal Site Name and Location

The Disposal Site is comprised of the property located at 62 Whittemore Avenue and the One Alewife Center property, both in Cambridge, Massachusetts ("Site" or "Disposal Site"). The Site location is provided on Figure 1. The Site consists of a 1-acre property known as One Alewife Center (owned by New Boston Alewife Limited Partnership) and an irregularly shaped, approximately 24-acre property, comprised of 6.5 acres owned by W.R. Grace & Co.-Conn. ("W.R. Grace"), 17.5 acres owned by Alewife Land Corporation. The Site is depicted on Figure 2. The Site is bounded by Whittemore Avenue to the north; residences, Harvey Street and Russell Field to the east; Rindge Avenue to the south; and the Alewife Brook Parkway and an approximately 2-acre parcel (described below) located between Jerry's Pond and Alewife Brook Parkway to the west.

The Disposal Site does not include the adjacent 2.2-acre Former Lehigh Metals and Babo's (Lehigh/Babo's) Site parcel, also depicted on Figure 2. The Lehigh/Babo's parcel was purchased by Grace in 1988. However, the parcel was not occupied or used by Dewey & Almy or Grace during operation of the chemical manufacturing plant. The property was formerly occupied by Babo's Restaurant, a hamburger stand, and Lehigh Metals, which used the building primarily for warehouse storage. Lehigh/Babo's has not previously been included in the Disposal Site designated under Release Tracking Number (RTN) 3-0277. Historically, the parcel has its own RTN (3-3411) and currently has "No Further Action" status under the MCP.

The Disposal Site also does not include several parcels of land to the north of Whittemore Avenue, which are also currently owned by W.R. Grace (Figure 2). The property owned by W.R. Grace to the north of Whittemore Avenue consists of four paved parking lots and a small one story structure (Building 28). Grace acquired the Dewey & Almy Chemical Company in 1954, and purchased this property in the late 1950s. Manufacturing operations were not conducted by W.R. Grace or Dewey & Almy to the north of Whittemore Avenue. Because the history of this area is not consistent with the manufacturing and chemical operations which were historically conducted to the south of Whittemore Avenue, this area is not included within the limits of the Disposal Site.

1.2 Site Description

Property boundaries, on-site structures, and abutting properties are shown on Figure 2. Currently nine interconnected structures exist on the W.R. Grace portion of the Site, which are used by the W.R. Grace Construction Products Division as office space and/or research and development (R&D). Currently, the only industrial operations at the Site are conducted in a small machine shop. The machine shop produces equipment for customers that utilize Grace's FDA approved can sealing compounds to seal food and beverage cans. The One Alewife Center building is located at the northwestern corner of the Site and is used for office space. The Site is not currently used for residential or institutional (e.g., school or daycare) purposes.

The 25-acre Site is partially covered by landscaped areas, parking areas, an access road to/from Routes 2 and 16, and paved walkways. Approximately thirty-five (35) percent of the Site is covered by buildings (4-acres or 169,300 ft^2) or pavement (5.4-acres or 234,715 ft^2). Jerry's Pond is located adjacent to Rindge Avenue on the southern portion of the Site and occupies approximately 4-acres. The remaining areas of the Site consist of approximately 12-acres of land vegetated with shrubs, brush, grasses, and small trees. The vegetated areas, including the area surrounding Jerry's Pond, occupy approximately fifty (50) percent of the Site and are surrounded by fencing to control access.

Historically, up to 46 buildings were distributed over approximately two-thirds of the Site, since initial development in the early 1900s (Figure 3). The nine current inter-connected structures are all that remain of the historic structures (Buildings 1, 2, 3, 8, 18, 22, 23, 24, 29). A description of the historical property ownership and uses is presented in Section 1.4.

The topography is slightly undulating, resulting from the presence of foundations of former buildings, the placement of excess soil generated from demolition and site re-grading activities in the last 20 years, and from remediation activities conducted in the 1980s. Elevations vary from approximately El. 9 to El. 11 National Geodetic Vertical Datum (NGVD). Due to the presence of the Massachusetts Bay Transit Authority (MBTA) Red Line tunnel easement through a portion of the Site, the MBTA datum (-105.9 NGVD) is also frequently applied to the Site.

Jerry's Pond is located on the southern portion of the Site, north of Rindge Avenue (Figure 2). Jerry's Pond is a man made water body, created as a result of clay mining activities in the mid-1800s. Jerry's Pond has no inlet or outlet. Surface water flows into the pond and then recharges the groundwater system in this area. A small retention pond, connected to Jerry's Pond, was created immediately to the north of Jerry's Pond in the late 1970s. The pond was created in connection with dewatering activities during the construction of the Red Line tunnel.

Two ponds, Infield Pond and Parkway Pond, are located immediately to the west, along Alewife Brook Parkway (Route 16), as shown on Figure 2. Infield Pond collects surface water runoff from the Site and is connected to Parkway Pond via a below grade pipe. Parkway Pond, located to the south of Infield Pond, also collects surface water runoff, as well as water pumped from sumps in the MBTA tunnel. Parkway Pond is connected via a pipe to Yates Pond, another abandoned clay pit located to the north of Parkway Pond, across Route 16. Water flows from Yates Pond into Alewife Brook.

1.3 Surrounding Off-Site Receptors

The areas north and northeast of the Site are residential. Russell Field, a municipal park owned and operated by the City of Cambridge ("COC"), is located to the east of the Site. The area south of the Site and Rindge Avenue is occupied by Rindge Towers, a high-rise residential apartment complex. The MBTA Alewife station and commercial properties occupy the area on the west side of Alewife Brook Parkway. There is a daycare center located in the Alewife Station. The MBTA maintains a Red Line access building (MBTA headhouse) and a surrounding paved area at the western Site boundary (Figure 2).

Other surrounding receptors include Infield Pond, Parkway Pond, Alewife Brook and its associated wetlands. A private irrigation well is located at 12 Whittemore Avenue. This

well was originally installed for the purpose of providing an alternative source of non-potable water for irrigation at a greenhouse owned by a Mr. Edward Norberg. W.R. Grace understands that the well has never been used. In their 20 September 1996 Notice of Audit Findings, the DEP indicated that they spoke with Mr. Norberg about the well on 15 February 1996. The well does not have a pump, or associated piping for extracting water. Neither pump tests, nor water quality tests have been conducted on the well. The well had not ever been used, reportedly due to the expense associated with utilizing a deep bedrock well.

1.4 Overview of Site History

1.4.1 Site Ownership History

Land in the vicinity of the Site was cleared of trees in the 17th century and used as pasture for oxen. The Site was located near an area once known as the Great Swamp, a wet environment that resulted from the deposition of fine-grained clay sediment in the Cambridge Fresh Pond area. The clay deposits were discovered in the mid-1800s, and mined by clay mining companies. Due to high water table conditions in the area of the Site, mining operations were abandoned shortly after discovery of the pits and the open pits were left to fill with water, resulting in the formation of Jerry's Pond and Yates Pond. Jerry's Pond was used as a bathing area in the summers during the 1900s, and a bath house owned by the COC was once located east of Jerry's Pond during this time.

In the 1900s, the Boston and Maine Railroad tracks ran through the Site from roughly east to west (Figure 3). In 1919, the Dewey & Almy Chemical Company was founded at the Site and began constructing buildings for their rubber product manufacturing processes, as described in Section 1.4.2. Buildings 1 through 11 had been built just north of the Boston & Maine Railroad tracks by 1930. The Dix Lumber Company was in operation south of the Boston & Maine tracks. Several commercial (Door & Sash Company) and residential buildings had been constructed along Whittemore Avenue at this time (in location of current Buildings 18, 22, and 23). A 1949 aerial photograph shows buildings belonging to Dewey & Almy (Buildings 18, 22, 23, 24 and 29) present on the south side of Whittemore Avenue. The majority of the buildings historically located south of the Boston & Maine Railroad on Dewey & Almy property were constructed prior to the 1949 photograph and the remaining buildings were constructed by 1955 as evidenced by a later aerial photograph. In total, up to 46 buildings historically occupied the Site (Figure 3).

The paved parking lot located at the northeastern corner of the Site along Whittemore Avenue has historically been used for parking dating back to at least the 1940s (likely utilized by the commercial buildings along Whittemore prior to Dewey & Almy). Prior to use as a parking lot, the lot consisted of undeveloped land adjacent to residential structures, and in the early 1900s it was associated with a coal yard. There is no evidence to suggest manufacturing or other industrial operations occurred in this area of the Site. However, this parking lot has historically been included within the limits of the Disposal Site.

Dewey & Almy

In 1954, the Dewey & Almy Chemical Company merged with W.R. Grace to become the Dewey & Almy Chemical Division of W.R. Grace & Co. The property acquired with this business acquisition included land from the south side of Whittemore Avenue to just north of Jerry's Pond. From 1954 to 1965, Grace acquired the following properties to achieve the current property configuration (Figure 2):

- Jerry's Pond
- Parcel of land between Jerry's Pond and Russell Field Park
- Portion of lot now known as One Alewife Center
- Parcel north of Whittemore Avenue (not part of Disposal Site)
- Lot south of the Boston & Maine Railroad tracks, formerly the Dix Lumber Company

Facility Downsizing

Concurrent with the construction by the MBTA, Grace began to downsize the facility. All major manufacturing operations were relocated to other Grace facilities or sold. The demolition of unused manufacturing buildings at the Cambridge property began in 1976 and continued through the early 1980's. The current configuration of buildings on the Site was achieved at that time, leaving approximately 169,300 square ft (approximately 4 acres) of building footprint. During the demolition activities, a majority of the 14 underground storage tanks utilized at the facility were removed by John G. Grant and Sons and A.T. Dismantling and Salvage Co. One 20,000 gallon UST was left in place to support the remaining facilities. This tank was removed in March 1999, as described further in Section 3.4. A former 10,000 gallon naphthalene UST was abandoned in place due to the fact that a portion of the tank is located underneath Building 8, which remains at the Site. The tank was drained, cleaned, and filled with sand.

The last parcel of land to be added to the Grace property was a residence located south of Whittemore Avenue, on a portion of the property now occupied by the One Alewife Center building. Grace purchased the residential structure and parcel, and moved the structure to a new location. Construction of the One Alewife Center building began in 1988. Approvals were in place to construct over 1 million square feet of new office space on the property in the late 1980's; however, with the exception of the One Alewife Center building, none of the other approved office space was constructed. The property has remained in its current condition since that time. The One Alewife Center building and the associated parcel of land beneath it was sold in 1999 to New Boston Alewife Limited Partnership. The extent of the property currently owned by Grace and One Alewife Land Corporation has not changed since 1999.

1.4.2 Historical Site Operations, Manufacturing, and Chemical Storage

During the late 1800s and early 1900s the central portion of the Site (near former Buildings 11 and 25, Figure 3) was used by several brick companies including Hubbel, Bay State Brick, the Smith Brickyard Company, and the New England Brick Company. Several small shed structures were associated with these brick companies.

Manufacturing Operations and Chemical Use

The Dewey & Almy Chemical company was founded in 1919. Figure 3 depicts the locations of the buildings, process waste areas, and tanks locations which historically existed at the Site. Table I provides a summary of the historic use of each of the buildings including chemicals expected to have been used in these buildings. Table II provides a summary and status of the former aboveground and underground storage tanks known to have existed at the Site.

The Dewey & Almy facility originally manufactured materials used as can sealing compounds, drum and pail cover gaskets, and bottle cap gaskets. The primary raw material was processed rubber. To assist in dispersing the rubber in water, naphthalene sulfonate (trade name DAXAD) was manufactured on-site. As a result of Dewey & Almy's research and development in dispersants, they began manufacturing and selling various dispersants to other companies. DAXAD was used in the production of paints and other water-based materials. Two other dispersants (trade names TDA and WRDA (water reducer Dewey & Almy)) were used in the manufacture of concrete. Its raw material was calcium lignosulfonate, a by-product of the paper-making industry. Dewey & Almy also manufactured Soda Sorb, a material used as a carbon dioxide absorbent using processed lime as the primary raw material. Products produced by the Dewey & Almy Company also included meteorological balloons and synthetic leathers for shoes. Chemicals used in the manufacturing process were stored in tanks distributed across the property (Figure 3 and Table II). Chemicals known to be stored in tanks include: acetone, naptha, muriatic acid, naphthalene, DAXAD, zinc chloride, vinyl acetate, nitrogen, sulfuric acid, formaldehyde, 2-butanone, and methanol. Historical photos and information from employees indicates chemicals were transferred to and from various tanks and buildings through a series of aboveground and underground pipes.

Petroleum products including unspecified fuel oil, diesel, No. 2 fuel oil, heavy fuel oil, light oil, white oil, and gasoline were stored on-site in nine underground storage tanks (USTs) and four above ground storage tanks (ASTs). In general, the capacity of the tanks ranged from 1,000 gallons to 10,000 gallons. A notable exception is one 54,000 gallon fuel oil AST. Figure 3 depicts the locations of petroleum product storage tanks which were present at the time the Site was used by Dewey & Almy. Historical information indicated that fourteen (14) USTs and approximately 51 ASTs were used for storage of chemicals and fuel oil at the Site.

By 1978, Grace had ceased the manufacture of industrial sealants. The manufacture of metal can sealing machinery and DAXAD continued. Grace had ceased all manufacturing and processing at the Cambridge location by 1983. Demolition of buildings at the facility began in the early 1980's. Following the end of chemical

manufacturing in 1983, the Boston & Maine railroad spurs were removed from service. Currently, the only industrial operations at the Site are conducted in a small machine shop. The machine shop produces equipment for customers that utilize Grace's FDA approved can sealing compounds to seal food and beverage cans.

Potential Asbestos Use

In 1930, Dewey & Almy purchased the majority of the stock of the Multibestos Company in Walpole, Massachusetts and entered the brake lining and automobile clutch industry. Dewey & Almy had sold its investment in the company by 1935. The property owned by Dewey & Almy in Cambridge at that time consisted of the areas of the Site to the north of the former B&M railroad tracks.

The actual manufacturing of brake linings by the Multibestos Company occurred at the facility in Walpole, not in Cambridge. However, some asbestos may have been used by Dewey & Almy at the Cambridge Site in conjunction with model or pilot-scale operations at some time between 1930 to 1935. These pilot-scale operations would have involved a model production line for manufacturing a type of brake lining that was molded with asbestos and latex and were believed to have occurred in former Building 11. Building 12 may have also been used by Dewey & Almy for production of latex impregnated asbestos sheets which were then shipped to the Walpole facility.

The only other asbestos-related activity potentially occurring at the Site was the conduct of laboratory analysis and research on small amounts (laboratory scale) of asbestos-containing materials. However, there is no evidence to suggest that asbestos was used in the manufacturing of asbestos containing materials at the Site by either W.R. Grace or its predecessor the Dewey & Almy Chemical Company.

Information was made available to DEP by third parties regarding a review of publicly available records which indicates patents were issued to W.R. Grace at the Cambridge address for patents that mentioned asbestos. The Grace Patent Department has reviewed this information. It is important to note that the issuance of a patent does not indicate that the patented product was put into production. In addition it is quite common for patents to cite materials that are not in fact used in the practice of the patent. Of the eight (8) patents identified five (5) of the patents although mentioning asbestos do not use asbestos in any of the examples. A sixth patent relates to the use of certain hydrophilic polyurethane foams to make sheets from fibers but only one of the many examples cited indicates the possible use of asbestos. This product was not manufactured by Grace but was merely used to demonstrate to potential customers what could be done with certain Grace products. A seventh patent identified relates to a Tank Closure Assembly that is owned by a California Company and is not related to W.R. Grace in Cambridge. The eighth patent relates to a machine for making sealing gaskets with a portion of the machine formatted from an asbestos- impregnated resin product with the trade name "ferrobestos" which is purchased on the open market.

2. RESPONSIBLE PARTY INFORMATION

On behalf of W.R. Grace, Haley & Aldrich has overseen numerous soil, groundwater, surface water, sediment, and air sampling programs at the Site. In accordance with the Massachusetts Contingency Plan ("MCP"), Haley & Aldrich has assisted W.R. Grace with completion of necessary response actions at the Disposal Site and Cambridge Environmental has assisted with the completion of several Risk Characterizations. Pertinent information is as follows:

The **Potentially Responsible Party** completing response actions at the Site is:

W.R. Grace & Co.-Conn.
62 Whittemore Avenue
Cambridge, Massachusetts 02140
Contact: Mr. Robert F. Jenkins
Tel. (617) 498-4476

The **Licensed Site Professional** (LSP) assisting in the completion of the MCP response actions is:

William W. Beck, Jr.
Senior Vice President
LSP#: 1637
Haley & Aldrich, Inc.
465 Medford Street, Suite 2200
Boston, Massachusetts 02129-1400
Telephone Number: (617) 886-7400

3. REGULATORY HISTORY

The Massachusetts Department of Environmental Protection (DEP) RTN for the Site, assigned in 1987, is 3-0277. An RTN for asbestos, RTN 3-17014, was assigned in 1998 and was subsequently closed by the DEP and the compliance obligations for this RTN were incorporated into existing compliance obligations under RTN 3-0277. The Site is currently a permitted Tier IC Site. The current permit (Permit No. 118529) expires on 18 March 2006.

A list of DEP Submittals and/or MCP related submittals pertaining to the Site is included in Appendix A. A summary of site characterization and response actions is provided below.

3.1 Initial Identification as a Disposal Site

In 1985, as part of a plan to develop portions of the property, Grace voluntarily conducted an assessment to evaluate the subsurface and hydrogeological conditions at the property. The assessment report, entitled "Environmental Site Assessment Report for the Proposed Alewife Center Development," was completed in 1985 and included explorations and data for a majority of what is now classified as the Disposal Site. The report was submitted to the Massachusetts Department of Environmental Quality and Engineering (DEQE), which is now the Massachusetts DEP.

The DEQE reviewed the assessment and other available information and concluded further information was necessary in order to understand the nature and extent of the contaminants at the Site.

3.2 Site Characterization - Non-Asbestos Oil and Hazardous Materials (1987-2003)

Notice of Responsibility for Non-Asbestos Contaminants - 1987

After reviewing the results of subsurface and hydrogeological evaluations conducted in 1984 and 1985, the DEQE issued a Notice of Responsibility (NOR) on 9 February 1987, notifying Grace that the DEQE had determined that a release of OHM had occurred at the Site. DEQE assigned Site Number 3-0277 to the Grace Site and required additional investigations.

The NOR issued by the DEP in 1987 required Grace to take actions to specifically define the nature and extent of oil or hazardous materials that might exist on-site; evaluate how such materials would be treated if they posed an unacceptable risk to human health or the environment; and evaluate the effect of underground utilities on contaminant transport.

Phase II CSA and Risk Assessment for Non-Asbestos Contaminants -1988

Haley & Aldrich conducted investigations at the Site, and prepared a seven volume report on the property entitled "Environmental Data Report for the W.R. Grace & Co. Property in Cambridge, Massachusetts," dated 29 April 1988. The report presented the data and results that Haley & Aldrich had obtained since completion of the 1985 report, and provided information used to prepare a response to the NOR. A risk assessment was also conducted by Meta Systems.

The risk assessment concluded that contaminants of concern present at the Site, namely naphthalene and petroleum hydrocarbons (evaluated as "oil and grease"), presented negligible long term or acute risks to the health of Site workers, casual Site users or neighbors. The report also concluded that the other contaminants detected at the Site posed negligible long-term risks, and that Site contaminants had caused negligible effects to the environment.

Transition to the Massachusetts Contingency Plan

The DEP issued the original MCP effective 31 August 1988. In response, Meta Systems issued an addendum to their 1988 risk assessment report. The August 1989 addendum presented a reevaluation of the original 1988 risk assessment based on newly promulgated MCP criteria. The reevaluation confirmed that the Site posed no significant threat to human health or the environment.

The redesign of the MCP in 1993 allowed for the transitioning of disposal sites listed in the "old" system to the "new" system within a timeframe set forth in the regulations. At the time the Site was transitioned into the MCP, the 1988 Environmental Data Report, in conjunction with the risk assessments described above, were considered to be the equivalent of a Phase II level of site characterization. In a letter to Grace dated 2 March 1990, the DEQE stated that environmental conditions at the Site had been sufficiently characterized, that procedures to estimate exposure and evaluate risks had been adequately documented, and that the DEQE considered the Phase II Comprehensive Site Assessment to be complete.

Tier Classification – Tier 1C Permit

The redesign of the MCP in 1993 allowed for the transitioning of disposal sites listed in the "old" system to the "new" system within a timeframe set forth in the regulations. In compliance with the Transitions Provisions of the MCP, Haley & Aldrich submitted a Tier II Classification for the Grace property on 4 August 1995.

The DEP issued a Notice of Audit on 26 January 1996 informing Grace the Tier II submittal was to undergo auditing by the DEP, and then based on the audit findings, issued a Notice of Audit Findings to Grace dated 20 September 1996. According to the Notice of Audit Findings, additional points were added to the Grace Numerical Ranking System (NRS) Potential Exposure Pathway score by the DEP because of the potential for odiferous emissions of naphthalene during remediation and future redevelopment activities proposed for the Site.

The reevaluation of the Site in response to the Notice of Audit Findings resulted in the submission of a new tier classification in October 1996, recommending the Site be reclassified as Tier IC under the MCP. The Site was granted a Tier IC permit the following year, with an effective date of 13 February 1997. The Tier IC permit allowed for continuing oversight of the Site by a Licensed Site Professional (LSP), however, certain activities on the Site could require the approval of the DEP. The Tier IC permit was effective for 5 years and therefore expired on 13 February 2002. A permit extension application was submitted to the DEP on 16 November 2001. A permit extension was issued for the Site by the DEP on 25 February 2002 extending the permit through 18 March 2004. A second permit extension was issued by the DEP on 6 February 2004 and a third

permit extension was issued by DEP on 13 April 2005. The current permit (Permit No. 118529) expires on 18 March 2006.

Phase III Feasibility Study for Non-Asbestos Contaminants (1988 and 2000)

A Phase III Feasibility Study, including Risk Assessment, was completed and submitted to the DEP in 1988. Subsequent to the initial subsurface and hydrogeologic evaluations in 1984 and 1985, additional investigations were completed to further assess the nature and extent of contamination at the Site. In 1995 and 1999, Haley & Aldrich completed two supplement soil sampling programs to further assess the nature and extent of the petroleum hydrocarbon contamination at the Site. With the additional data, numerous changes to the MCP, and a complete change in the proposed activities at the Site (no development), Haley & Aldrich submitted a new Phase III report to the Department in 2000. The second Phase III Feasibility Study and Remedial Action Plan (RAP) was prepared to address the exceedance of the EPH UCL, was completed in February 2000.

The goal of the Phase III RAP was to identify, evaluate, and select an appropriate remedial alternative considering the constituents of concern, the contaminated media, and site characteristics. Based on comments received during the public involvement plan document review process, Alternative 5, enhanced in-situ bioremediation was selected as the remedial action alternative for the area of elevated petroleum levels at the Site. Bioremediation was implemented at the Site under a Release Abatement Measure from 2001 to 2003.

3.3 Site Characterization for Asbestos - 1998-2003

Release Notification for Asbestos

Two field programs were completed at the Site in 1998 to investigate for the presence of asbestos in soil. The field programs were completed in response to concerns raised by members of the community about the potential presence of asbestos at the Site and potential exposures to such material in the event the Site was redeveloped. In response to these concerns, W.R. Grace voluntarily undertook a sampling program to characterize soil at the Site for the presence of asbestos. Based on the findings of these investigations, a second RTN (RTN 3-17014) was assigned to the Site in June 1998. In July 1999, RTN 3-17014 was closed by the DEP and the compliance obligations for this RTN were incorporated into existing compliance obligations under RTN 3-0277.

In a memorandum prepared by DEP dated 31 July 2000, DEP indicated the 1988 risk characterization was now not adequate for the Site, given the recent detection of asbestos in soil at the Site. DEP further indicated that data for the Site (asbestos and new data for other contaminants) generated since the completion of the 1988 risk assessment and Phase II CSA (i.e. 1998 report entitled "Environmental Data Report") needed to be incorporated into risk calculations for the Site.

Phase II Comprehensive Site Assessment for the Presence of Asbestos

The Phase II CSA was submitted to the DEP on 8 January 2004. The report summarizes data collected during Phase II CSA activities conducted in accordance with a Phase II CSA Scope of Work (SOW) prepared for the Site, dated 27 April 1999. The Phase II serves as a

supplement to the original Phase II CSA equivalent and risk characterization prepared for the Site in 1988 and 1989.

The purpose of the Phase II CSA was to evaluate the potential presence and extent of asbestos fibers in soil, groundwater, surface water, sediment and ambient air at the Site and define potential migration pathways for the asbestos. The Phase II also presents the information needed to address concerns outlined by the Department in a 3 September 1998 letter regarding the presence of asbestos fibers at the Site and a 31 July 2000 Memorandum regarding the applicability of the risk characterizations previously completed for the Site.

The results of the Phase II CSA for asbestos indicated that asbestos fibers are present in soil samples at various quantities. Asbestos fibers have also been identified in surface water samples collected from Jerry's Pond and in groundwater samples collected at the Site. Asbestos fibers have not been identified in the sediments from Jerry's Pond. Much of the Site soils are covered with pavement, vegetation, and/or landscaping, thus fibers in the soil are unlikely to become airborne. Based on ambient air monitoring data, asbestos fibers identified in the soil are not being released into the air.

Based on the exploration programs conducted, data collected and historical use of the property, Haley & Aldrich concludes that there is no reason to suspect that bulk disposal of asbestos has occurred at the Site. The data and historical use of the Site supported the conclusion that the asbestos contamination at the Site is due to the demolition of structures comprised of asbestos containing building materials.

An evaluation of risks to human health, safety, public welfare and the environment due to a release of asbestos at the Site was completed as a part of the Phase II CSA, in accordance with guidelines provided in the MCP, the Guidance for Disposal Site Risk Characterization in Support of the MCP (DEP Risk Guidance), and current risk assessment practices in Massachusetts. Evaluation of Site risk under existing conditions has resulted in a finding of No Significant Risk to human health, safety, public welfare and the environment. For foreseeable future conditions, the Site is likely to continue to be used in a manner consistent with its current use as a commercial facility. However, to be conservative, the Risk Characterization included a hypothetical future construction scenario. Under the hypothetical construction scenario, a condition of No Significant Risk cannot be achieved without the implementation of an AUL, to provide acceptable limits of risk of harm resulting from these potential exposures to Site soils. With an AUL, the Risk Characterization identified a condition of No Significant Risk of harm to human health, safety, public welfare, and the environment at the Disposal Site for current and foreseeable future use.

3.4 US EPA Site Investigation / ATSDR Health Consultation

The Region 1 office of the United States Environmental Protection Agency (EPA) conducted a Preliminary Assessment/Site Investigation at the WR Grace Site in August and September 2000. Their assessment included a site reconnaissance conducted on 22 August 2000 and a 2-day sampling program completed on 6 and 7 September 2000. EPA collected 39 samples from the Grace property (Figure 7). The samples were collected from a depth of 0 to 3 inches below ground surface (bgs). Additionally, the EPA collected 13 samples from the neighboring One Alewife Center and Russell Field properties. Of the 39 samples analyzed by PLM, 29 samples contained no visual asbestos and 10 samples contained asbestos at

"trace" levels (less than 1%). No Asbestos was identified in any of the samples at a level of 1% or greater. TEM analysis indicated that Trace levels of asbestos (0.0002 % to 0.02 %) were identified in 24 of the 25 samples. The asbestos was identified as chrysotile.

EPA noted that several fragments of suspect asbestos containing materials (SACM) were identified on the ground surface in four locations, depicted on Figure 7 of this Report. SACM-1 and SACM-2 were observed in the area identified as Zone 4 (west of Russell Field Park) in the December 1998 sampling program. SACM-3 was observed in Zone 2 (north of Russell Field Park on the easternmost portion of the Site). The fourth SACM was observed in the area known as Zone 5 (Lehigh/Babo's Parcel). EPA collected samples of the suspect materials in three locations (SACM-01 to SACM-03) for analysis. A sample was not collected from the fourth location (Zone 5), as the material was observed to be similar to the other 3 locations. EPA observed that the material appeared to be non-friable. In fact the EPA indicated the material was difficult to break up into a discrete sample. The three samples of material were submitted for analysis by PLM. Results of the analysis indicated each of the three samples contained 15% asbestos. The type of asbestos in the materials was identified as chrysotile.

The EPA requested that the Agency for Toxic Substances and Disease Registry (ATSDR) review the results of the EPA sampling program and determine whether the asbestos in the surface soils at the Site pose an immediate health threat under current site conditions and usage. ATSDR concluded that "the asbestos levels present in the surface soils on Site do not pose an immediate or long-term public health hazard" and that "subsurface asbestos contamination does not pose an immediate health hazard as long as the waste remains buried, and is not brought to the surface."

Results of the site inspection and sampling were published in the EPA's February 2001 Report entitled "Removal Program Preliminary Assessment/Site Investigation Report for the W.R. Grace Site." ATSDR's results are published in their "Health Consultation" dated 20 March 2001. Based on ATSDR's findings EPA concluded in March 2001 that they would not undertake any cleanup activities at the Grace Site, or the adjoining properties. A copy of the EPA Report, the ATSDR Report and EPA's final findings are included in Appendix B.

3.5 Non-MCP Response Actions

3.5.1 MBTA Construction

The Massachusetts Bay Transit Authority (MBTA) constructed the Red Line extension through the Grace property from the late 1970s through mid-1980s. The MBTA obtained property and an easement from Grace to construct train line tunnels and an entrance structure. Part of the MBTA Red Line construction included excavation in an area formerly occupied by process waste sludge and settling ponds resulting from the DAXAD manufacturing (Figure 3). In connection with the design and construction of the MBTA tunnel on the property, subsurface explorations were conducted at the Site in the late 1970s. These investigations delineated the extent of the DAXAD waste sludge.

As a result of the presence of the sludge in this area of the property, a management plan was implemented during the tunnel development. Existing information

indicates the W.R. Grace and the MBTA excavated and stabilized the sludge material on-site and the MBTA removed the sludge material from the property. The MBTA removed all sludge and wastes, including sludge beyond the limits of the MBTA property and easement. Figure 4 depicts the limits of the sludge removal and the limits of the areas used for treatment of the sludge during the removal process.

3.5.2 Tank Removals

As previously described, numerous ASTs and nine USTs were identified as petroleum storage tanks when the Site was operated by Dewey & Almy. Petroleum products stored on-site included unspecified fuel oil, diesel, No. 2 fuel oil, heavy fuel oil, light oil, white oil, and gasoline. Additionally, chemicals utilized in the manufacturing process conducted by Dewey & Almy and W.R. Grace were also stored in ASTs (mainly) and USTs (few). Figure 3 depicts the known former petroleum and chemical storage tank locations.

Grace had ceased all manufacturing and processing at the Cambridge location by 1983. Buildings were demolished and a majority of the tanks were removed during the early 1980s. Table II provides a summary of the tank contents and the approximate removal dates. One former 10,000 gallon naphthalene UST could not be removed due to its location partially beneath Building 8 (Figure 4). Therefore, this tank was drained, cleaned, filled with sand and abandoned in place in the early 1980s.

In March 1999, Haley & Aldrich oversaw the removal of the 20,000 gallon fuel oil UST which at that time remained at the Site (Figure 4). Cyn Environmental Services completed the excavation and removal activities associated with the UST closure. The tank was found to be covered with coal tar epoxy and approximately 0.5 inches of insulation covered with remnants of poly sheeting. Very little rust and no evidence of pitting or pinholes were observed on the UST. Two sacrificial zinc anodes were located on one end of the tank. The removed UST was transported by the James G. Grant Company to Brockton Iron & Steel located in Brockton, Massachusetts. There was no evidence of a release of oil to the environment from the tank. Confirmatory soil samples were collected from each of the sidewalls and a composite sample was collected from three locations on the bottom of the excavation. Samples were submitted for analysis for Extractable Petroleum Hydrocarbons (EPH) including the target analytes. Results of the chemical analysis indicated EPH carbon ranges and the target PAHs were not detected above the laboratory reporting limits.

3.5.3 Biological Treatment (Land Farming) Field Demonstration

In 1988, Environmental Solutions, Inc. (ESI) and Haley & Aldrich investigated the feasibility of on-site bioremediation of soils contaminated with petroleum hydrocarbons and naphthalene utilizing microbiological land farming techniques. The investigation was conducted in connection with the proposed development plan for the Alewife Center site, as a possible means of remediation of soil during site redevelopment. Prior to the field demonstration, a laboratory feasibility study was conducted from April to June 1988. The laboratory study concluded that

bioremediation was feasible and a field demonstration was recommended to evaluate the feasibility of conducting the treatment in the field.

Therefore, in August 1989 a field demonstration area was created along the eastern edge of the Site, directly east of the MBTA head house. The biological treatment units constructed for the field demonstration are depicted on Figure 4. The treatment area consisted of two cells: Cell 2 primarily for treatment of petroleum hydrocarbons and Cell 1 for treatment of naphthalene. A cross section of the biological treatment cells (or Biological Closure Units (BCU)) is depicted on an ESI Figure 3 included in Appendix C.

The biological treatment was conducted in two phases: August to October 1988 (Phase 1) and May to July 1989 (Phase 2). In total, approximately 600 cubic yards of petroleum and naphthalene contaminated soils were treated. Phase 1 of the treatment demonstration involved excavation of approximately 200 cubic yards of petroleum contaminated soil from the proposed Building Site 3 area and 200 cubic yards of naphthalene and phthalate contaminated soils were excavated from proposed Building Sites 4 and 6. Proposed Building Site areas are shown on Figure 4. During the Phase 1 field test, petroleum concentrations in Cell 2 decreased from as high as 1200 mg/kg to less than 6 mg/kg (< 6 mg/kg). The treatment of naphthalene contaminated soils in Cell 1 could not be completed during the Phase 1 field test. Initial naphthalene concentrations were higher than expected which resulted in a slower rate of treatment and inadequate initial nutrient applications. Winter temperatures arrived in October 1988 and the treatment in Cell 1 was terminated. At that time, recommendations were made for modifying the treatment for naphthalene and a second phase of treatment was planned.

In May of 1988, treatment of approximately 200 cubic yards of naphthalene contaminated soil in Cell 1 resumed. Using the information obtained from the unsuccessful first phase of treatment, nutrient levels were adjusted. An additional 200 cubic yards of naphthalene contaminated soil was excavated from proposed Building Site 4, as depicted on Figure 4 (and included in Appendix C). During the Phase 2 excavation in proposed Building Site 4, ESI concluded that the high concentrations of naphthalene in soil excavated during the Phase 1 excavation seemed to be confined to an isolated area adjacent to the MTBA station. During the Phase 2 field test, average naphthalene concentrations in Cell 1 decreased from as high as 1670 mg/kg to 84 mg/kg, and in Cell 2 from as high as 46 mg/kg to 8 mg/kg.

The redevelopment of the Site did not occur, therefore the treated soil in Cells 1 and 2 remain on-site. Physical evidence (change in grade) of the test cells can be observed at the surface on the eastern edge of the property. As described above, chemical testing data for the treated soils indicated that the material remaining in these cells is below MCP Method 1 S-1 standards for both petroleum hydrocarbons and naphthalene.

3.5.4 Surface Debris Removal

As described in Section 3.4, EPA noted that several fragments of suspect asbestos containing materials (SACM) were identified on the ground surface in four locations during their site investigation in 2000. Based on the EPA's findings, on 7 November 2003 Environmental Solutions (a licensed asbestos contractor) removed visible pieces of SACM, debris, and trash from the Site. Six small pieces (1 to 8 inches in size) of suspect ACM were identified by Environmental Solutions in the area of the Site near EPA locations (SACM-1 and SACM-2 based on EPA GPS coordinates and map locations). A seventh piece was identified and removed from the adjacent Lehigh/Babo's parcel. SACM was not encountered elsewhere on the property. However, to be conservative other debris was picked up and removed as well. A notification of the removal was provided to the DEP, in accordance with 310 CMR 7.15(1)(b). All material was disposed of as ACM. However, testing was not conducted to confirm that asbestos was present in the material.

3.6 Completed Response Actions under the MCP - Bioremediation RAM

On 18 July 2001 Haley & Aldrich prepared an Enhanced In-Situ Bioremediation Release Abatement Measure Plan (Bio RAM). The limits of the bioremediation area are shown on Figure 5. The objectives of the Bio RAM consisted of the following response actions:

- Further characterization of the extent of UCL exceedance vertically and laterally in the vicinity of B98-3.
- Reduction in the concentration of EPH in soil in the vicinity of B98-3 below the applicable UCLs using Enhanced In-situ Bioremediation.

Based on the results of the pre-characterization work, a target area of contamination was identified. The initial injection of remedial additives was completed on 5 and 11 October 2001 with assistance from a representative from Enzyme Technologies, Inc. Six soil samples were collected within the bioremediation area in December 2001 and March 2002 and analyzed for EPH carbon range C11-C22 aromatics and target analytes. Results of the soil sampling indicate that bioremediation had occurred and that the remedial goal had been met. Concentrations of EPH in the soil had been reduced to below the applicable UCLs. Therefore, the bioremediation system was shut down on 25 March 2002.

Additional groundwater sampling was completed in winter 2003 to obtain a complete year of groundwater data in accordance with the DEP Policy to monitor the potential for migration of remedial additives. Results of this sampling round indicated that the concentrations of EPH in the groundwater were below Method 1 GW-3 Standards and the nutrient concentrations resulting from the Bioremediation were decreasing in underlying groundwater. A Bioremediation RAM Completion Report was submitted to the DEP on 21 April 2003. The soil data collected at the completion of the Bioremediation Program has been incorporated into the revised Method 3 Risk Characterization, as discuss further in Sections 5 and 7 of this report.

4. SITE CHARACTERIZATION

A major redevelopment of the property was proposed in the mid-1980s. In connection with this redevelopment, several phases of subsurface explorations were conducted from 1984 through 1988. Soil borings and test pits were completed, groundwater observation wells were installed, and soil, surface water, sediment and groundwater samples were collected and analyzed. Although initially the explorations were to assess conditions (both environmental and geotechnical) which would impact future development plans, the subsequent work scopes were also developed to assess the nature and extent of contamination based on the historical operations, chemical use and storage, and known waste handling practices.

The more recent explorations (1995 - 2003) were completed in locations in which additional testing was required to more completely characterize the extent of contamination. In 1998, in response to concerns raised by community members about the potential presence of asbestos at the Site and potential exposures to such material in the event of redevelopment, Grace voluntarily undertook a sampling plan to characterize soil for the presence of asbestos. Three separate asbestos sampling programs were completed at the Site in May and December of 1998 and September of 2003.

A list of compounds analyzed for in samples of soil, groundwater, surface water, sediment, and air is included in Table III. These compounds include not only the standard components typically included in a site characterization, but also specific compounds (phenols, formaldehydes, and vinyl acetate) which were included based on an understanding of their use in the manufacturing operations conducted by W.R. Grace or its predecessor, Dewey & Almy.

The following table summarizes the exploration programs completed on behalf of W.R. Grace since 1984. Exploration locations are depicted on Figures 5, 6, and 7, and monitoring well locations are depicted on Figure 8.

Year	Number & Type of Explorations	Exploration Program Description
OHM		
1984	43 Test Borings	Alewife Center Master Plan Study - B1 to B10; B101 to B108, B201 to B213; B401 to B412
1985	5 Test Borings	Alewife Center Master Plan Study - B501 to B503; B601 & B602
	24 Test Pits	Alewife Center Master Plan Study – TP 202 to TP 224
1986	15 Test Borings	B210A & B211A; B601A, B602A, B603 to B605; B701 to B708
	79 Test Pits	Building Sites– SITE 2 (21 TPs); SITE 3 (19 TPs); SITE 4 (20 TPs); SITE 5 (19 TPs)
1987	7 Test Borings	B801 to B807
	42 Test Pits	Building Sites – SITE 6 (9 TPs), SITE 7 (5 TPs); TP 301 to TP 328
1988	5 Test Borings	B901 to B905
1995	66 Test Borings	B95-1 through B95-68 (excluding B95-36 and B95-37)
1999	25 Test Borings	B98-1 through B98-20 and B98-23, B98-26, B98-57, B98-62, B98-65
2001	25 Test Borings	B2001 and B2002 Series, borings completed for the BioRemediation
ASBESTOS		
1998	14 Geoprobes	AB-1 to AB-14
1999	313 Geoprobes	AB2 Series Explorations
2000	39 Samples	EPA Site Investigation – 39 Samples collected by hand excavation
2003	20 Geoprobes	AB-3A to 3D; AB-8A to 8D; AB2-4A to 4D; AB2-15A to 15D; AB2-38A-38D
OBSERVATION WELLS		
1984-94	32 Wells	25 installed onsite during above boring programs; 7 installed on adjacent properties.
TOTALS		
	145 (OHM)	**TOTAL TEST PITS**
	511 (347 ASB & 164 OHM)	**TOTAL BORINGS**
	32 (25 Onsite, 7 Off)	**TOTAL OBSERVATION WELLS**

The Site consists of 25 acres of land, 8 acres of which includes land which has historically been covered by buildings (4 acres) and Jerry's Pond (4 acres) since the early 1900s. This leaves 17 acres accessible for undertaking traditional subsurface investigations. As shown above, 145 test pits and 538 test borings have been completed on the 17 acres of the Site easily accessible for exploration. This corresponds to a very comprehensive assessment with an average of 8.5 test pits per acre and 31.5 borings per acre.

The following sections summarize the major subsurface explorations programs completed at the Site.

4.1 Soil Explorations 1984 to 2003

4.1.1 1988 OHM Subsurface Explorations

The explorations and testing conducted from 1984 through 1988 are summarized in a report prepared by Haley & Aldrich entitled "Environmental Data Report for the W.R. Grace & Co. Property in Cambridge, Massachusetts, Vols. I-VII" dated April 1988 and the locations are depicted on Figure 6 of this report. This report was prepared as an addendum to the "Subsurface and Hydrogeological Conditions for

the Alewife Center Master Plan Study" completed in 1985. After review of the 1985 report, the DEQE determined a release of oil and hazardous materials had occurred at the W.R. Grace Site and issued a Notice of Responsibility (NOR) to W.R. Grace. The 1988 Environmental Data Report was prepared in response to the NOR. The report presents the results of subsurface investigations conducted at the Grace Site since 1985, including test pits, soil borings (some having observation wells installed), groundwater monitoring, and surface water sampling and analysis. Copies of test pit and boring logs and laboratory data sheets for the explorations and analyses completed during this period are included in the appendices of the 1988 report, which was previously submitted to the DEQE (and is now a part of DEP files).

A summary of the number of subsurface soil quality analyses from this assessment is presented in Table III. In total, 129 surface and subsurface soil samples were collected directly from the test pits and borings included in the 1988 Environmental Data Report. Soil samples were submitted for analysis for VOCs, Acid/Base/Neutral Extractables (ABNs), Oil & Grease, Petroleum Hydrocarbons, Metals, Cyanide, Phenolics, and/or Formaldehyde. Results of the soil analyses are presented in Table IV and discussed in the following section of this report.

4.1.2 Total Petroleum Hydrocarbons

In 1995, a supplemental soil investigation was conducted to further assess the nature and extent of Total Petroleum Hydrocarbon (TPH) contamination using an updated analytical method (updated from oil & grease analysis in the 1980s) recommended by DEP at that time. The objectives of the 1995 soil sampling program were to re-assess the areas determined to exceed the 1993 MCP UCL for TPH, based on oil and grease analysis, and to investigate areas of historical fuel oil storage, in order to establish the horizontal and vertical extent of contamination exceeding the TPH UCL (10,000 mg/kg). The DEP had no longer recommended the "oil and grease" testing method previously used to determine TPH, thus the sampling program was designed to obtain data on TPH using the accepted DEP test method (TPH by GC/FID).

To achieve the program objectives, a total of 66 soil borings (designated B95-1 through B95-68) were completed during the period 12 July through 24 August 1995 (Borings B95-36 and B95-37 were not completed). The 1995 boring locations are shown on Figure 6. Exploration logs for these test borings were included in the report entitled "Supplemental Petroleum in Soil Evaluation" dated December 1998.

The samples were collected from borings installed adjacent to a former fuel oil storage area, beneath the asphalt parking area within the central portion of the Site, and within the former biological field demonstration cells north of the MBTA station. A total of 165 soil samples were submitted for TPH testing using the GC/FID method.

4.1.3 Extractable and Volatile Petroleum Hydrocarbons (EPH and VPH)

In 1998, DEP established two, more representative methods of determining the components of petroleum present in groundwater and soil. Analysis by the

analytical method for EPH and volatile petroleum hydrocarbons (VPH) produced results which broke down the aliphatic and aromatic fractions of TPH, and further quantified the aliphatic and aromatic fractions based on carbon range. Along with the new analytical testing methods, DEP promulgated new soil and groundwater cleanup standards, including UCLs, for the various EPH and VPH carbon range fractions.

Therefore, during the period 4 to 13 January 1999, 25 additional exploration borings were completed and 32 soil samples were obtained. The 25 additional borings were located in areas at which TPH UCLs were previously detected, as shown on Figure 6. Historical property use was reevaluated for this program and additional explorations were added to the program based on past Site usage and previously collected data in order to better define the limits of soil possibly requiring response actions. Thirty-two samples were submitted for analysis for EPH and VPH, EPH polyaromatic hydrocarbon (PAH) target analytes and VPH VOC target analytes.

Results of the 1998 EPH-VPH program are presented in a report entitled "Supplemental Petroleum in Soil Evaluation," prepared by Haley & Aldrich, Inc., and dated 15 December 1998. Borings logs and laboratory data sheets were included in Appendices A and B of the 1998 report (previously been provided to DEP). A summary of the subsurface soil quality data from this assessment is presented in Table V and discussed in Section 5 of this report.

4.1.4 Asbestos Explorations

Three exploration programs were conducted at the Site, in May 1998, December 1998, and September 2003. The sampling plans for the major sampling programs in May and December of 1998 were developed by Grace and were reviewed and agreed upon by the DEP, the COC, and the Alewife Study Group (ASG). During the December 1998 program, Grace along with two interested parties, the COC and the ASG, collected and analyzed split soil samples. Sample locations for each of the three explorations programs are shown on Figure 7 of this report.

In May 1998, fourteen Geoprobe borings were completed to a depth of 8 feet below ground surface (bgs), with composite samples collected at two foot intervals for a total of 56 subsurface soil samples. Eight boring locations were selected where historical information indicated asbestos or asbestos products may have been utilized in a research and development laboratory the vicinity of former Buildings 11 and 12 (Figure 3). Six locations were selected by the COC and ASG, three on the western edge of the property and three adjacent to and south of Buildings 1, 2 and 3 (current). Samples were submitted to Scientific Laboratories, Inc. (SciLab) of Midlothian, Virginia for analysis using the "Protocol for Determining Asbestos Content in River Sediments and Soil Samples" (developed by US EPA Region 1), in conjunction with Polarized Light Microscopy (EPA Method 600/R-93-116), (hereinafter "Region 1 Protocol" and "PLM").

Based on the findings in the May 1998 sampling program, a site-wide soil sampling program was developed with input from the DEP, the COC, and the ASG. The Site was divided into Zones (1 through 5) based on historic property use. The zones were used to determine the spacing of the 313 Geoprobe borings completed in

December 1998. Subsurface and/or surficial soil samples were collected from each of the 313 boring locations (multiple samples were collected from the same boring). Additional surficial samples were collected by hand from 38 locations. Samples were submitted to SciLab for analysis in accordance with Region 1 Protocol, in conjunction with PLM. SciLab also analyzed thirty duplicate soil samples using TEM (EPA 600/R-93-116-Chatfield Semi-Quantitative) randomly selected from the 589 samples collected by W.R. Grace.

In September 2003, a directed soil sampling program was conducted. Five areas were targeted for additional sampling based on the results of the 1998 sampling programs. The program was designed to provide data on the probable presence of asbestos fibers in soil which might be excavated from these areas. Locations AB-3 and AB-8 from the May 1998 sampling and locations AB2-4, AB2-15, and AB2-38 from the December 1998 sampling program were targeted for additional sampling. The 20 sampling locations for this additional characterization are also depicted on Figure 6. At each of the 20 boring locations, 5 composite samples were collected and submitted to SciLab MA for asbestos analysis following methods outlined in EPA Region I Protocol with the presence of asbestos in the samples determined using PLM.

The results of the May and December 1998, and September 2003 soil sampling programs completed by W.R. Grace are summarized in Table VI and discussed in Section 5 of this report. Results of the December 1998 sampling program, including data collected by COC and ASG are also presented in Table B.10 of the Risk Characterization in Appendix D. The boring logs and laboratory datasheets for the asbestos site characterization are presented in a report entitled "Phase II Comprehensive Site Assessment (CSA) for the Presence of Asbestos, W.R. Grace & Co. - Conn., Cambridge, Massachusetts, DEP RTN 3-0277," prepared by Haley & Aldrich, Inc., and dated 6 January 2004. This report has also previously been provided to DEP.

4.2 Groundwater and Surface Quality Monitoring 1984 to 2003

Groundwater quality monitoring has been conducted at the Grace facility since the mid-1980s. Groundwater observation wells were installed in 1984 as a part of the evaluation of subsurface and hydrogeological conditions for the Alewife Center Master Plan study. A long-term groundwater monitoring program was also implemented in 1987 in response to the NOR issued by the DEP. A total of 25 observation wells have been installed for sampling at the Site. An additional 7 monitoring wells were installed adjacent to the Disposal Site, along Whittemore Avenue and Alewife Brook Parkway to evaluate groundwater flow and potential off-site contaminant migration. Monitoring well and surface water sampling locations are depicted on Figure 8.

4.2.1 OHM Long Term Monitoring Program

The long-term groundwater monitoring program has included periodic monitoring of groundwater and surface water for VOCs and naphthalene. The initial NOR issued for the Site by DEP requested periodic (quarterly and then annual) monitoring of groundwater contaminant levels be conducted in anticipation of the historical

development previously planned for the property. Grace has continued to conduct annual and/or semi-annual groundwater monitoring through 2003.

Nine wells were identified by Haley & Aldrich for long-term monitoring (B212-OW, B604-OW, B707-OW, B708-OW, B801-OW, B802-OW, B803-OW, B807-OW, B904-OW). For the first year of the long-term monitoring program, groundwater quality data was collected every three months. After the first year of monitoring, the sampling interval was reduced to two rounds of data collection per year until 1994. Haley & Aldrich prepared a reported entitled "Report on Long-Term Monitoring, Alewife Center" dated December 1994. This report was developed to document long-term monitoring of groundwater and surface water as requested by the DEP. Subsequent to the 1994 sampling program, the long-term monitoring program was not conducted from 1995 to 1997. The program resumed again in 1998 due to the potential for future development being explored at that time.

Dr. John D. Spengler of Environmental Health & Engineering prepared the following report on behalf of the City of Cambridge in April 1996: *"Final Draft, Public Health Risk Evaluation for W.R. Grace Site in Cambridge, MA."* The report, dated 10 April 1996, recommended that four wells be added to the nine wells previously included in the long-term monitoring program. Dr. Spengler recommended including monitoring well "B204-OW and at least two additional wells east of the MBTA tunnel", in addition to the nine wells previously included in the program. In response to this recommendation, the long-term monitoring program resumed in 1998 consisting of the following:

- nine wells historically sampled (B212-OW, B604-OW, B707-OW, B708-OW, B801-OW, B802-OW, B803-OW, B807-OW, B904-OW),
- the wells recommended by Dr. Spengler (B204-OW, B411-OW, B502-OW and B503-OW), and
- two additional wells (B603-OW and B207-OW).

This brought the total number of wells included in the long-term sampling program to 15. Groundwater sampling events were conducted in 1998, 1999, 2000, 2001, 2002 and 2003.

From 1987 through 2003, twenty-three rounds of groundwater sampling have been completed. A full list of compounds tested for in groundwater is included in Table III. A summary of the compounds of concern detected in the groundwater sampling associated with the initial and long-term monitoring program (1984 through 2003) are presented in Table VII.

Collection of surface water samples was included in both the evaluation of subsurface and hydrogeological conditions for the Alewife Center Master Plan study and in the long-term groundwater monitoring program and its continuation through 2003. Surface water samples were collected from 12 locations along Jerry's Pond, Parkway Pond, Yates Pond, and Alewife Brook in 1985. From 1986 to 1994, and 1998 to 2003, surface water samples were collected in 3 to 8 locations, depending on the availability of water in the ponds at the time of sample collection. Surface water sampling locations are depicted on Figure 8. A full list of compounds tested

for in surface water is included in Table III. A summary of compounds of concern detected in surface water during the long-term monitoring program (1984 through 2003) are presented in Table IX.

4.2.2 Groundwater and Surface Water Monitoring for Asbestos

Groundwater samples were also collected from three wells and analyzed for asbestos content using the EPA Drinking Water Method (EPA-600/4-83-043 (100.1)). Five groundwater sampling events for asbestos were conducted from October 1999 through May 2000. Three groundwater monitoring wells were selected due to their proximity to the MBTA tunnel, specifically, in the vicinity of the groundwater leak into the tunnel. The locations of the wells selected (B207-OW, B807-OW, and B503-OW) are shown on Figure 8. Results of the groundwater sampling are presented in Table VIII.

Four surface water samples were collected on 21 October 1999 from locations along the northern bank of Jerry's Pond (Figure 8). The samples were analyzed by SciLab for asbestos content using the EPA Drinking Water Method (EPA-600/4-83-043 (100.1)). The results of the surface water sampling for asbestos are presented in Table X.

Groundwater and surface water sampling results were also previously discussed in the 2004 Phase II CSA.

4.3 Sediment Sampling

From 1984 to 1988, nine (9) sediment samples were collected from Jerry's Pond, Parkway Pond, Yates Pond, and Alewife Brook, as shown on Figure 8. These samples were submitted for analysis for VOCs, ABNs, Oil & Grease, Petroleum Hydrocarbons, Metals, Cyanide, Phenolics, and/or Formaldehyde as shown on Table III.

From 1990 to 1992, three (3) sediment samples were collected from Jerry's Pond, Parkway Pond, and Yates Pond in connection with the long-term groundwater and surface water monitoring program. The samples were submitted for analysis for VOCs and naphthalene.

As a part of the Phase II CSA for Asbestos, ten (10) sediment samples were collected from locations on the north, east, and west banks of Jerry's Pond, as shown on Figure 8 of this report. The samples were sent to Scientific Laboratories in Midlothian, Virginia, and prepared and analyzed in accordance with the EPA Region 1 Protocol and using PLM.

Results of the sediment sample analyses are presented in Tables XI and XII and are discussed in Section V of this report.

4.4 Evaluations for Dust, OHM, and Asbestos in Air

4.4.1 Air Sampling for Dust and OHM 1988

In 1987 four separate rounds of air sampling were conducted during each of the four seasons. The air sampling was conducted by TRC Environmental Consultants as follows: Feb 17 to March 7 (winter); April 8 to 28 (spring); August 5 to 22

(summer), and October 30 to November 17 (fall). Analyses included total suspended particulates (TSP), acetone, benzene, naphthalene, PAHs, and formaldehyde.

The measured ambient concentrations for TSP and each of the compounds were below the applicable ambient air quality standards for the various compounds tested. The results of the 1987 sampling are summarized in a February 1988 report prepared by TRC, which was previously included as Appendix A of the 1988 report entitled "Health Risk Assessment for the W.R. Grace & Co. Property, Cambridge, Massachusetts" prepared by Cambridge Environmental. A summary of the TRC are included in Appendix G and sampling locations are depicted on Figure 11. The results obtained during this sampling program provide the basis for the air and dust modeling used in the Method 3 Risk Characterization. Additional information on the sampling results is provided in the Risk Characterization (Appendix D).

4.4.2 Air Sampling for Asbestos 1998 and 1999

Since July 1998, five separate evaluations for the presence of asbestos in air have been conducted by W.R. Grace. High volume ambient air sampling was conducted in July 1998 and October 1999. High volume background samples were collected during the December 1998 soil sampling activities. Locations of the high volume sampling units are depicted on Figure 11 of this Report. Also during soil sampling activities in December 1998 and January 1999 low volume air samples were collected from personal air samplers worn by the sampling staff.

A total of 58 air samples have been collected using high and low volume sample collection techniques. Of those 58 samples, 38 were analyzed using PCM (NIOSH Method 7400), in accordance with the AHERA Protocol, for the presence of fibers, and 22 samples were analyzed using TEM (NIOSH Method 7402) for the presence of asbestos fibers (2 samples were analyzed using both PCM and TEM). Asbestos air sampling results were previously discussed in the 2004 Phase II CSA and a summary of the results are presented in Table XIII.

4.5 Potential Offsite Receptor Investigations

4.5.1 Neighborhood Basement Survey

In May and June 1987, Haley & Aldrich conducted interviews with home owners near the Site to assess the present and past history of basement flooding. Thirty-five homes were included in the survey within an area bounded by Seagrave Road, Columbus, Whittemore, and Harrison Avenues. The survey questions targeted the following: frequency and duration of flooding, association of flooding with rain storms or plumbing leaks, use and frequency of operation of a sump pump, how and when water enters the basement, indistinguishable water marks, elevation data on basement floor slabs, and dry wells.

Results of the survey were presented in Volume 7 of the 1988 EDR prepared by Haley & Aldrich. A summary of the results is as follows:

- Frequency of basement flooding decreased with distance from Alewife Brook. A majority of the homes closest to Alewife Brook (Seagrave Rd. and Columbus Avenue) were utilizing sump pumps to address water in the basement. In these situations the water was believed to be due to surface water runoff which entered the basement through the walls or through a dry well in the basement floor. Residents on Whittemore and Harrison Avenues, Kassul Park, and Kimball Street did not generally have problems with water entering their basements.

- None of the residents surveys indicated unusual discoloration or odors in the water entering their basements

- Elevation data was obtained for the basement floor slabs in approximately one-half of the residences included in the survey. The floor slab elevations along Seagrave Road were on average at El. 108.3 (MBTA Datum), along Columbus Road the average elevation was El. 107.1 and the other homes included in the survey averaged El. 109.4. Groundwater elevation in the wells along Whittemore Avenue have been measured at El. 106.9 or less (frequently less). Groundwater elevations moving north from Whittemore Avenue are expected to be even lower as groundwater flows towards Alewife Brook at approximately El. 105.

Based on this information, Haley & Aldrich concluded that the water entering basements is primarily surface water. Shallow wells were installed along Whittemore Avenue and have been routinely sampled as a part of the long-term groundwater monitoring program through 2003. Wells B801-OW, B802-OW, and B803-OW are located on the north side of Whittemore Avenue, downgradient from the Grace Site, and adjacent to residences located on that street. The sampling results for these wells (1984 through 2003) are discussed further in Section 5.2. During the sampling rounds completed from 1984 through 2003, non-detectable and low levels of the VOCs and naphthalene were detected in these wells. The detected levels have not exceeded the applicable MCP risk based standards during the sampling rounds completed from 1984 through 2003. Therefore, Haley & Aldrich concludes that contaminated groundwater from the Site is not impacting the groundwater in the neighborhood to the north of Whittemore Avenue.

5. NATURE AND EXTENT OF CONTAMINATION

5.1 Introduction

Several environmental investigations have been conducted to determine the nature and extent of contamination. Commensurate with its former use for chemical storage and manufacturing (Section 1), primary contaminants detected in soil and groundwater at the property consist of PAHs, VOCs, petroleum compounds, formaldehyde, and metals. Petroleum and naphthalene are the most prevalent contaminants in soil. Asbestos fibers have also been detected, primarily in soil. Many of the former buildings dating back to the 1930s are known to have been covered with asbestos siding and the process piping connecting the facility components is also known to have contained ACM. Tables IV through XII provide a summary of the soil, groundwater, surface water, and sediment quality data. The following sections discuss the general site setting and the specific contaminants which exist in the various media at the Site.

5.2 Geology and Hydrogeology

The Site is underlain by four primary soil types. From the ground surface down, the soil types are fill, peat, medium to fine sand, and silty marine clay. Both the fill and peat layers are present only in certain areas of the Site. In some locations, the subsurface conditions are simply sand and clay over bedrock. In other locations, glacial till has been encountered beneath the silty marine clay, overlying the bedrock. The general stratigraphy of the Site is as follows:

Stratum Description	Thickness of Stratum
Fill: Very loose to very dense brown to black gravelly medium to fine sand, with varying amounts of brick, boulders, rebar, concrete, metal scraps, cinders, and asphalt.	1.0 to 10 ft thick
Peat: Very loose to loose brown to black fibrous peat with varying amounts of medium to fine sand and silt.	0.0 to 7.0 ft thick
Sand: Medium dense to dense gray medium to fine sand or gray fine sand with varying amounts of silt.	12.0 to 38.5 ft thick
Clay: Very soft to medium stiff gray silty clay.	up to 137 ft thick

For current Site use, surface soil at the Site is categorized as S-2 based on low frequency, low intensity soil exposure. Children visit the Site but visits are infrequent and soil exposure is low. For foreseeable future use of the Site for commercial purposes, surface soil is categorized as S-1.

Measurements of depths to groundwater have been obtained at selected available monitoring wells as part of the long-term groundwater monitoring program. This data has been used to calculate groundwater surface elevations used to develop typical groundwater surface elevation contours, as depicted on Figures 9 and 10.

Prior to construction of the MBTA tunnel, near surface groundwater flowed north-northwest across the Site to Alewife Brook at a calculated rate of approximately 22 feet per year.

Prior to tunnel construction, Parkway Pond formerly collected surface water runoff from the immediately surrounding area and carried it to Yates Pond, which discharged to Alewife Brook. With the installation of the MBTA tunnel, the groundwater flow pattern beneath the Site was altered. During tunnel construction, dewatering activities implemented to control the groundwater level diverted groundwater flow toward the location of the tunnel excavation. Since completion of the tunnel, groundwater measurements indicate a depression in the groundwater surface exists in the vicinity of the tunnel, south of well B207-OW, due to leaks in the tunnel walls causing groundwater to generally flow to the tunnel.

As described in the 1988 EDR, hydrogeologic studies completed prior to 1985 included the installation of multilevel groundwater sampling devices. Piezometric levels observed in these wells indicated a general vertical hydraulic gradient, in addition to the horizontal gradient. Indicator tests conducted in 1985 indicated some vertical movement of contaminants in the groundwater. However, the majority of groundwater and contaminant movement occurred in the upper half of the sand unit due to the rapidly decreasing permeability with depth in the sand unit.

Groundwater studies were also completed at Russell Field by the COC in 1998. In 1999 and 2000, Haley & Aldrich completed an evaluation of groundwater flow direction at the adjacent Russell Field and W.R. Grace properties. Haley & Aldrich measured groundwater elevations at 16 wells on the W.R. Grace properties and 14 wells on Russell Field. Groundwater levels at Russell Field are generally 2 feet higher than those measured at the Disposal Site. Groundwater levels at Russell Field wells immediately in the vicinity of the tunnel also exhibited a depression indicating a possible water leak into the tunnel. Environmental Health & Engineering, Inc. presented the results of the Russell Field groundwater study in a reported dated 22 October 1998. Haley & Aldrich results were presented in two letter reports dated 7 February 2000 and 5 September 2000. Figure 9 presents an overall groundwater contour plan for Russell Field and the Disposal Site. Both the COC and Haley & Aldrich evaluations indicate that groundwater is not moving from the Disposal Site towards the Clifton Street neighborhood. Rather, groundwater is moving from the neighborhood towards Jerry Pond and the Red Line tunnel.

Construction of the MBTA tunnel has resulted in the formation of a groundwater divide in the northern portion of the Site. Generally, groundwater on the north and northwest side of the divide flows south/southwest toward Alewife Brook. Groundwater to the south and southeast of the divide flows in a northwesterly direction toward the tunnel. The reversal of flow is caused by the leak in the MBTA tunnel, which acts as a groundwater discharge boundary and creates a depression in the vicinity of the leak. Groundwater adjacent to the suspected area of leakage into the MBTA tunnel indicates the presence of low concentrations of naphthalene, BTEX compounds, and MTBE. W.R. Grace has made this information available to the MBTA and suggested that it would be appropriate for them to fix the leaks in the tunnel.

Groundwater at the Site is categorized as GW-3 since groundwater discharges to surface water and is also categorized as GW-2 since groundwater is located at depths less than 15 ft bgs and is located within 30 ft of occupied structures. Groundwater beneath the Site is not located within a Zone II, an Interim Wellhead Protection Area, a potentially productive aquifer, or the Zone A of a Class A Surface Water body, and is within 500 ft of the nearest public water distribution pipeline. A private irrigation well is located within 500 ft of the

Site at 12 Whittemore Avenue. However, this well was originally installed for irrigation at a greenhouse and has never been used for potable or non-potable uses. Therefore the groundwater is not categorized as GW-1.

5.3 Non-Analytical Evidence of Contamination

An important part of the site characterization program was the excavation of 145 test pits during the period 1985 to 1987. Haley & Aldrich has systematically reviewed the test pit logs created for each of the test pits in order to assess whether the visual evidence of contamination observed is consistent with the known site history in the area and/or the available chemical analytical data in the area. The test pit excavations allowed for critical visual observations of subsurface conditions, which could then be used to target sample analysis and/or additional exploration locations. The test pits were excavated in the areas in which a majority of the historic manufacturing operations occurred, as shown on Figures 3 and 6.

The test pits completed in Building SITE 2, 3, and 5 (SIT2, SIT3, and SIT5 series test pits) were excavated in the areas of the property where numerous fuel oil and chemical storage tanks were located and where a majority of the historic manufacturing buildings were located. Petroleum odors, sheens on the surface of the water entering the test pits, and soils visibly contaminated with oil were observed at the fill-peat interface. Additionally, a distinct undefined odor was also noted in several of the pits. This odor is likely the chemical or mothball odor typically associated with naphthalene contamination. These observations are consistent with the historical use of this area, as described above. As described further in the following section of this report, the data sets in these areas of the Site indicated the presence of naphthalene (up to 150,000 µg/kg) and petroleum compounds (over MCP Method 1 standards for EPH, TPH, and VPH), consistent with the conditions observed in the test pits.

The test pits completed in Building SITE 6 and 7 (SIT6, and SIT7 series test pits) were excavated in the areas of the property where the two process waste (i.e. DAXAD waste) piles were located. A majority of the soil and DAXAD waste sludge which once existed in SITES 6 and 7 had been excavated by the MBTA to construct the Red Line tunnel, prior to the 1985 to 1987 test pit explorations. Thus, the logs for the soil in these areas of the Site do not note much visible evidence of contamination. However, the logs did document mothball odors emanating from the pits and sheens on the surface of the groundwater entering the pits. As described further in the following section, analysis of soil samples collected in the SITE 6 and 7 areas did indicate the presence of moderate level of naphthalene in soil at concentrations ranging from less than 1,000 µg/kg to 43,000 µg/kg. These concentrations are consistent with the olfactory evidence of contamination observed in the test pits. The data and test pits together also provide evidence to support the conclusion that MBTA removed the DAXAD sludge and wastes, including sludge beyond the limits of the MBTA property and easement.

The logs for the test pits excavated in the SITE 4 area describe petroleum, chemical, and mothball odors, sheens on the surface of the water entering the test pits, and soils visibly contaminated with oil at fill-peat interface. Additionally, gray and white streaked materials and/or white rubbery silts were noted in a limited number of test pits in these areas. The SITE 4 test pits were excavated in areas of the property where DAXAD was manufactured (Building 27) and where the settling pond was located. Based on historic use of this area,

these materials are likely related to the use of latex at the Site and/or possibly additional evidence of small amounts of DAXAD waste. The 300 series test pits were excavated in 1987 in the areas not previously evaluated by the Building Site test pits. Several of these pits were excavated in the immediate vicinity of the SITE 4 and SITE 5 area and exhibited the same chemical odors and sheens on the surface of the groundwater as was observed in the SITE 4 test pits. Visible oil contamination in the fill and peat layer was noted in few of the pits. These observations are consistent with historic use of these areas which included the former tank farm (chemical storage area), and the settling pond and wash lagoon associated with the DAXAD plant. As described further in the following section of this report, the data sets in these areas of the Site indicated the presence of elevated levels of naphthalene (up to 150,000 □g/kg) and petroleum compounds (over MCP Method 1 standards for EPH, TPH, and VPH), consistent with the conditions observed in the SITE 4 test pits. This is also the area of the Site from which material was obtained for the biological treatment (land farming) test program conducted in the late 1980s and an in-situ bioremediation RAM was completed in 2000 and 2001.

Based on our review of the logs, Haley & Aldrich has concluded that the observations noted in the test pit logs is consistent with and supports the data set used to characterize the Site and define the nature and extent of contamination. The data set indicated petroleum and naphthalene are consistently the most prevalent chemical contaminants identified in soil and groundwater at the Site. Additionally, evidence of debris and former building products was not observed in the subsurface during the test pits programs.

5.4 Soil

5.4.1 OHM

Releases of oil and/or hazardous material from historic operations have resulted in detectable concentrations of several VOCs, metals (particularly lead and zinc), petroleum hydrocarbons, SVOCs (particularly naphthalene), formaldehyde, and cyanide. Table IV provides a summary of the soil quality data for the OHM compounds detected at the Site. As shown on Tables III and IV, numerous compounds were tested for and not detected at the Site. Compounds not detected include pesticides and PCBs and several VOCs and SVOCs. The most prevalent contaminants and those exhibiting the highest levels of contamination in soil at the Site can be attributed to petroleum hydrocarbons and naphthalene. The predominant areas of naphthalene and petroleum contaminated soils are depicted on Figure 12.

The highest concentration of naphthalene historically detected in soil at the Site was 4,300 mg/kg (based on the data collected for the biological treatment program). This sample was collected from a test pit in the Building SITE 4 area. Numerous other samples collected from SITE 4 also exhibited concentrations of naphthalene exceeding the MCP Method 1 S-1 Standard (100 mg/kg). Naphthalene at a concentration equal to the Method 1 Standards (100 mg/kg) was also detected in one sample in the SITE 2 area (B98-10). Levels of naphthalene ranging from 4 mg/kg to < 100 mg/kg were also detected in samples from the southern portion of Building SITES 2 and 3, and a small area of SITE 6.

The 1988 data report indicates that these contaminants exist within surface soils as well as at depths greater than 15.0 feet below ground surface. However, during

pre-construction activities undertaken after 1988, areas in which surficial contamination had been identified were re-graded and covered with either clean fill and/or paved with asphalt. As a result of this re-grading of the Site, OHM contamination does not presently exist in surface soils (depths from 0 to 6 in.).

Evidence of significant petroleum related contaminants in soil was identified in four main areas of the Site- the southern portions of SITE 2 and 3, SITE 4, and a small portion of SITE 6. Analytical testing during the 1995 petroleum in soil evaluation indicated TPH concentrations (measured using GC-FID methods, then considered state-of-the-practice) in these areas ranged from 16 to 40,700 mg/kg. TPH was detected above laboratory reporting limits in 163 of the 165 samples analyzed during the 1995 evaluation of petroleum in soil. The analytical data collected from the 1998 EPH/VPH exploration and sampling program confirmed the results of the TPH program. The highest concentrations of petroleum compounds identified during the EPH/VPH program were also identified in the SITE 4 area. The EPH concentration for the C11-C22 aromatic carbon range was detected in excess of the EPH UCL of 10,000 mg/kg in one sample from boring B98-3 (4-6 ft bgs). However, as described in Section 3.5, Bioremediation from 2000 to 2001 has successfully reduced the EPH concentrations to below UCLs in this area.

5.4.2 Asbestos

Since May 1998, a total of 906 soil and split soil samples were collected from the Site by W.R. Grace, the ASG, and the COC. Of the 906 samples analyzed, 857 samples (COC-33 samples; Grace-745 sample; ASG-79 samples) were analyzed or reportedly analyzed using the EPA Region 1 protocol combined with PLM (using EPA Method 600/R-93-116) and 49 samples were analyzed using TEM (EPA 600/R-93-116-Chatfield Semi-Quantitative). The data set includes 24 additional sample results provided to Haley & Aldrich by Alewife Neighbors, Inc. (ANI – equivalent to former Alewife Study Group) in a 22 December 2003 letter.

Based on PLM analysis, 699 samples contained no visible asbestos (NVA) material, 85 samples contained asbestos at "trace" levels (less than 1%), and 73 samples were determined to contain asbestos at 1% or greater. Therefore, of the samples analyzed by PLM, 9% contained asbestos at a concentration of 1% or more and 82% contained no visual asbestos.

Of the 49 samples analyzed by TEM, 31 samples contained no asbestos material, 12 samples contained "trace" levels of asbestos, and 6 samples were determined to contain 1% or greater asbestos. Therefore, 64.6% of the samples analyzed using TEM contained no asbestos material and 12.5% of the soil samples contained 1% or more asbestos.

The overwhelming fiber type identified is chrysotile, which is the most common form of asbestos used in building materials and friction products. A majority of the detected asbestos fibers were identified from 0.5 to 5 ft below ground surface, not in the 0.0 to 0.5 ft depth interval. A few samples results indicate fibers maybe present up to 8 ft below ground surface. Haley & Aldrich collected 276 surficial samples from 0 to 0.5 ft bgs of which 268 samples contained no visible asbestos material, 3 samples contained asbestos at "trace" levels (less than 1%), and 5 samples were

determined to contain asbestos at 1% or greater using the Region 1 Protocol and PLM. Therefore, 97.1% of the surficial soil samples analyzed using PLM contained no visible asbestos. Figure 12 depicts the locations in which asbestos was detected in soil at 1% or greater.

In 2001, EPA sampled the top 3 inches of soil at the Site. Samples were submitted by EPA to a laboratory for analysis by PLM (the method of sample preparation is not known). Of the 39 EPA surface samples analyzed by PLM, 29 samples contained no visual asbestos and 10 samples contained asbestos at "trace" levels (less than 1%). No asbestos was identified in any of the samples at a level of 1% or greater.

5.4.3 Conclusion

Figure 12 depicts the areas of the Site in which a majority of petroleum, naphthalene, and/or asbestos is present in soil. Although the Disposal Site limits include a much larger area, the extent of the most contaminated soil is limited to four discreet areas. These areas of the Site represent the highest and widest distribution of naphthalene, petroleum products, and or asbestos in soil based on laboratory analytical data, visual and olfactory evidence of contamination, and historic use.

5.5 Groundwater

5.5.1 OHM

Compounds detected historically more than once in groundwater at the Site include metals, acetone, benzene, ethyl benzene, 1,1-dichloroethane (1,1 DCA), 1,2-dichloroethene (1,2-DCE), methylene chloride, Methyl tert-Butyl Ether (MTBE), 4-Methyl-2-Pentanone (MIBK), toluene, and xylenes. A few additional VOCs were detected once and have not reappeared in recent sampling events. These compounds have not been detected above the MCP Method 1 GW-2 and GW-3 standards applicable to the Site and are not representative of the contaminants present at the Site. A summary of the compounds of concern detected in groundwater for the Site and surrounding properties is provided in Table VII.

Naphthalene has historically been the contaminant of concern in groundwater. The highest concentration of naphthalene historically detected in groundwater at the Site was 3,100 ug/L. Over the course of the long-term monitoring program concentrations of naphthalene were either not detected or have exhibited a decreasing trend at sampling locations over the majority of the Site (Table VII). In 2003, naphthalene was not detected to a laboratory reporting limit of 1 ug/L in seven out of thirteen groundwater samples. In the six samples in which naphthalene was detected, concentrations ranged from 1 to 530 micrograms per liter (ug/L). These levels are significantly lower than the MCP Method 1 GW-2 and GW-3 criterion applicable to the Site (6,000 ug/L).

It appears that naphthalene is present in the groundwater beyond the property in the vicinity of Alewife Brook. Monitoring wells B603-OW and B604-OW from the long-term monitoring program are located downgradient of the Site along Alewife

Brook. Naphthalene concentrations detected in these wells have been decreasing steadily since 1987. Naphthalene was most recently detected at 80 ug/L in February 2003 which is well below the applicable MCP GW-2 and GW3 risk-based standards. Additionally, low levels of BTEX compounds, acetone, 1,1-DCA, 1,2-DCA, and MIBK have inconsistently been detected in these wells. All detections have been well below the MCP Method 1 GW-2 and GW3 risk-based standards applicable to the Site.

Shallow wells (B801-OW, B802-OW, and B803-OW) were installed along Whittemore Avenue and have been routinely sampled as a part of the long-term groundwater monitoring program to assess whether contaminated groundwater was migrating north towards the residential neighborhood. With three exceptions, contaminants detected in the groundwater at the Site have not been detected in these wells during the periodic sampling rounds from 1984 through 2003. Naphthalene was detected in well B802-OW in March 1991, December 1994, and November 1998 at concentrations ranging from 1.8 to 8 □g/L. These levels are much lower than the MCP Method 1 GW-2 and GW-3 criterion applicable to the Site (6,000 ug/L). Naphthalene has not been detected in the previous or subsequent sampling rounds conducted from 1999 through the recently completed round in February 2003. Naphthalene has not been detected during sampling rounds in wells B801-OW and B803-OW. Therefore, Haley & Aldrich concludes that contaminated groundwater from the Site is not impacting the groundwater in the neighborhood to the north of Whittemore Avenue.

Figure 12 depicts the limits of the Disposal Site, for both soil and groundwater. As shown on the figure, the naphthalene contamination in groundwater extends from the northern edge of the MBTA tunnel in a northwesterly direction to Alewife Brook.

5.5.2 Asbestos

Groundwater samples were collected from three wells (B207-OW, B807-OW, and B503-OW) and analyzed for asbestos content during five groundwater sampling events conducted from October 1999 through May 2000. For each sampling round, groundwater samples were analyzed using the EPA Drinking Water Method (EPA-600/4-83-043 (100.1)). Table VIII presents the results of the five groundwater sampling rounds.

Thirteen (13) asbestos structures (all individual fibers) less than 10 □m in length were identified during the five rounds of groundwater sampling. In one sample (B207-OW) one structure (a fiber) was identified at 6 □m in length, the remaining 12 structures were all less than 5 □m in length. The widths of the 13 structures varied from 0.05 to 0.25 □m. Current health risk information indicates fibers greater than (>) 10 μm in length are more likely to impact human health. No structures greater than 10 □m in length were detected in the eight groundwater samples analyzed.

Asbestos fibers found in the groundwater samples are not believed to be representative of groundwater conditions at the Site. Fibers, which normally would not be present or moving with the groundwater, were present in the water samples. Their detection in groundwater is thought to be an artifact of the disturbance of

groundwater and resultant sampling of suspended solids. Therefore, asbestos fibers in saturated soils are not thought to be migrating on-site or off-site in the groundwater and thus not leaking into the MBTA tunnel.

5.6 Surface Water

Collection of surface water samples was included in the evaluation of subsurface and hydrogeological conditions for the Alewife Center Master Plan study, the long-term groundwater monitoring program and its continuation through 2003, and the Phase II CSA for Asbestos. Surface water sampling locations are depicted on Figure 8. Of the surface water bodies sampled, Jerry Pond is the only water body located within the limits of the Disposal Site. A summary of the surface water sampling data is included in Tables IX and X.

5.6.1 OHM

As shown on Table IX, samples have been collected from Jerry's Pond for OHM analysis in 1984, 1985 and 1987 (SW-1, SW-11, SW-12, SW-13, and "Jerry's Pond"). Evidence of contamination from the Site was not historically detected in Jerry Pond. Therefore, continued sampling of Jerry's Pond was not consistently included in the long-term groundwater and surface water monitoring program.

Off-site surface water sampling at Alewife Brook and Parkway Pond has been conducted periodically through 2003. Yates Pond was sampled up until 1992, at which time it was eliminated from the long-term monitoring program. Prior to 1992 compounds of concern at the Site had not been detected in Yates Pond.

As with groundwater, the primary contaminant of concern for surface water is naphthalene. Naphthalene has been detected (2.8 ug/L and 4 ug/L) only twice in the surface water samples collected from Alewife Brook, once in 1991 (SW-9) and once in 2001 (SW-8).

Other compounds detected at low concentrations in the off-site surface water bodies at various times include 1,2-DCE, 1,1,1-TCA, MIBK, MTBE, Trichloroethylene (TCE), tetrachloroethylene (PCE), phthalates, formaldehyde and a few PAHs. None of these compounds has been detected consistently. These compounds are also not attributed to a release at the Site.

5.6.2 Asbestos

The surface water from Jerry's Pond was sampled for asbestos fibers and asbestos structures, identified as chrysotile, were detected in three of the four surface water samples collected and analyzed, in accordance with the EPA Drinking Water Method (EPA-600/4-83-043 (100.1)).

The structures detected in the Jerry's Pond samples are in the range of 0.5 to 5.0 µm in length. A total of 8 asbestos structures, less than 5 µm in length, were detected in the surface water samples from Jerry's Pond. No asbestos structures greater than 5 µm were detected in the four surface water samples. Current health

risk information indicates fibers greater than (>) 10 µm in length are more likely to impact human health.

Asbestos fibers identified in surface water are likely to settle into the sediment at the base of Jerry Pond. The fibers identified in the water will not become airborne. The pond is a hydraulically closed system. Therefore fibers identified in the surface water are not likely to migrate off-site except during extreme flood events.

5.7 Sediment

Five sediment samples from Jerry's Pond were collected and analyzed for OHM in 1985 (2 samples) and 1987 (3 samples). Results of the sampling are summarized in Table XI. Low levels of metals, several PAHs, and petroleum compounds (oil & grease) were detected in the samples at that time. Subsequent sampling rounds in 1990, 1991 detected only naphthalene in Jerry's Pond. The VOCs and naphthalene were not detected in the 1992 sampling round. Based on the 1992 data, it was concluded that Jerry's Pond had not been impacted by the OHM contaminants at the Site.

Asbestos fibers were not detected in the ten (10) sediment samples collected from the banks of Jerry's Pond in October of 1999.

Sediment samples were also collected from Parkway Pond, Yates Pond, and Alewife Brook as a part of the 1988 EDR and the long-term groundwater and surface water monitoring program (1990-1992). Low levels of metals, several PAHs, and petroleum compounds (oil & grease) were detected in the historic samples. Naphthalene was detected in the sediment samples collected from Parkway Pond in 1990 and 1991. Naphthalene was not detected in the sediment sample collected in 1992. VOCs were not detected above laboratory reporting limits in any of the sediment samples from 1985 through 1992. Based on the low levels detected, Haley & Aldrich has concluded that the sediment quality of Parkway Pond, Yates Pond, and Alewife Brook have not been impacted by the contamination from the Disposal Site.

5.8 Air

The results of the 1987 of air sampling are presented in the TRC tables included in Appendix G. The measured ambient concentrations for total suspended particulates (TSP), acetone, benzene, naphthalene, PAHs, and formaldehyde were below the applicable ambient air quality standards for the various compounds tested. The results obtained during this sampling program provide the basis for the air and dust modeling used in the Method 3 Risk Characterization. Additional information on the sampling results is provided in the Risk Characterization (Appendix C).

Ambient background air sampling for asbestos using TEM analysis was completed at the Site in December 1998 and October 1999. Results of the high volume ambient air sampling analyses are summarized in Table XIII. OSHA, NIOSH and AHERA regulations for asbestos in air use fibers greater than 5 µm in length, with an aspect ratio greater than or equal to 3:1, in determining asbestos concentrations.

A total of 20 air samples were collected from perimeter locations during the December 1998 and October 1999 air sampling programs. TEM analysis of 10 high volume samples collected by LFR during the December 1998 sampling program did not detect asbestos fibers (>) 5 □m in the 20 samples. Therefore, the resultant TEM concentration for these samples was less than the detection limit of < 0.0002 f/cc.

Based on the ambient air monitoring data, asbestos fibers identified in the soil are not being released into the air. A majority of the Site soils are covered with pavement and or vegetation, thus fibers are unlikely to become airborne under current conditions.

6. DATA USABILITY ASSESSMENT

A data usability assessment evaluates the extent to which a data set can meet specific site characterization needs and data suitability objectives. As described in the previous sections, the data set assembled for the Site is extensive and includes a large number of samples and a large list of sought compounds. The following sections describe the characteristics of the data sets available, those data that are potentially usable, and our assessment and conclusions regarding the suitability of the data set assembled for the Site in meeting the objectives of rendering this RAO opinion. The two primary uses of data include determining the nature and extent of contamination and assessment of risks.

Soil, sediment, surface water and groundwater data has been used to determine the nature and extent of contamination in the soil and groundwater, and the limits of the Disposal Site. This data, along with our air sampling data, has also been used to assess the total site risk of harm to human health, public safety, welfare, and the environment using a site-specific Method 3 Risk Characterization. As part of that assessment, risk to public welfare has been evaluated by comparing the data to upper concentration limits. Finally, the data have been used to determine if continuing sources of contamination exist, as defined by the MCP.

6.1 Data Quality - OHM

6.1.1 Analytical Methods

In general, the analytical methods used for analysis of soil and groundwater samples at the Site were in accordance with the EPA and/or DEP recommended analytical methods and preservation techniques in place at the time the analyses were completed. The following discussion details those portions of the data set not obtained in accordance with present day recommended practices.

6.1.1.1 Petroleum Hydrocarbon Analysis in Soil

The original Phase II CSA (1988 EDR) and the Supplemental Petroleum in Soil Evaluation (1998) identified elevated levels of petroleum compounds by Oil & Grease analysis (Method 503C/A) and/or elevated TPH (EPA Method 3550/ASTM D3328), which were approved methods at the time of sampling in 1984, 1985, and 1995, respectively. Subsequent to this testing, EPH and/or VPH data for soil was collected in these areas.

EPH/VPH is designed to fractionate hydrocarbon mixtures into aliphatic and aromatic hydrocarbons, and provide data to support DEP's toxicological approach to characterize petroleum releases. The DEP issued draft VPH and EPH methodologies in August 1995, after both the EDR and the Supplemental TPH soil sampling programs.

This RAO is adequately supported using the EPH/VPH data from these selected locations. These data are used in the risk characterization to calculate the average exposure point concentration for petroleum compounds in soil. The TPH data is not included in the risk characterization but was used as a screening tool to determine where to target the EPH and VPH sampling.

6.1.1.2 Volatile Organic Compounds in Soil

Except as required by the VPH sampling and testing conducted, methanol or sample preservation other than storage at cold temperature (EPA Method 5035) was not conducted on soil samples collected and submitted for analysis for VOCs. EPA Method 5035 was developed to minimize loss of VOCs from the field to analysis and prevent under-reporting of VOCs concentrations and consequently underestimating risk. EPA Method 5035 was published in the Federal Register and became effective on 13 June 1997. The DEP adopted the policy in 1998. The majority of Phase II assessment and soil sampling for VOCs was conducted prior to 1988.

A limited number of preserved VOC samples were obtained in 1999, as a part of the EPH/VPH program. VPH data for soil was collected only in the areas which had identified elevated levels of petroleum compounds. Thirty-two samples were submitted for analysis for VPH including the VPH target VOCs, BTEX, MTBE, and naphthalene. These target VOCs are generally indicative of the volatile contaminants previously identified in soil (1988) and groundwater. As a conservative measure the pre-1990 BTEX results were ignored in the risk characterization and the target VPH analytes from the EPH/VPH measurements were used in their place. The pre-1990 BTEX results were retained as an indicator of the extent of BTEX contaminants at the Site. For the remainder of the volatile contaminants detected at the Site, the pre-1990 data results were used to characterize nature and extent of contamination, and to evaluate risk.

6.1.1.3 Groundwater Analytical Methods

Naphthalene is the primary contaminant of concern in groundwater. Compounds detected historically but inconsistently in groundwater at the Site include metals, acetone, benzene, ethyl benzene, 1,1-dichloroethane (1,1 DCA), 1,2-dichloroethene (1,2-DCE), methylene chloride, methy tert-butyl ether (MTBE), 4-methyl-2-pentanone (MIBK), toluene, and xylenes.

The groundwater analytical methods utilized in the early stages of the Site characterization (Alewife Center Master Plan and Long-Term Monitoring Program) for VOCs and petroleum compounds have been revised and improved since 1988. However, groundwater sampling analysis has continued at the Site nearly annually from 1994 through 2003. The methods used for the most recent analyses for VOCs and naphthalene are current and appropriate. Therefore, for purposes of evaluating risk, only the most recent groundwater data was considered. The historic data was used to evaluate the nature and extent of contamination.

6.1.1.4 Laboratory Reporting Limits

The reporting limits achieved by the laboratories for the various analyses completed during the EPH/VPH program and the recent long-term groundwater sampling programs (1998 through 2003) are applicable and appropriate for the site setting (S-2 and S-3; GW-2 and GW-3).

For data obtained in connection with the 1988 EDR, the laboratories frequently did not achieve reporting limits which are below current MCP Method 1 cleanup standards (particularly for SVOCs and VOCs) in soil and groundwater. The Method 3 risk characterization used half the laboratory reporting limit in the site risk calculations (exposure point concentrations) for those samples in which the contamination was detected at least once at the Site (i.e. for all contaminants of concern).

Nine (9) samples from the pre-1990 sampling do not have reporting limits available in the laboratory data reports for formaldehyde, 1,1-DCE, and TCE. For these samples reporting limits similar to other measurements were assumed and used in the risk characterization calculations.

6.1.2 Field Data

Field data include values from screening soil sample headspace for volatile compounds with a photo-ionization detector (PID), as well as visual and olfactory observations. A majority of explorations from 1984 through 1989 were test pits, allowing for important, large scale visual observation of soil and groundwater conditions. Laboratory data, field screening, and visual and olfactory observations of test pits as documented in logs were reviewed together with the associated analytical data as a part of the data quality assessment.

Visual and olfactory evidence of contamination was observed in test pits in several areas of the Site. Evidence included oil staining on test pit walls, sheens and petroleum odors on the surface of waters entering test pits, and "mothball" or "chemical" odors typically associated with naphthalene. The results of the chemical analyses completed in these same areas of the Site confirmed these observations. In these areas, naphthalene (up to 4,300 mg/kg) and petroleum compounds (up to 40,700 mg/kg) were detected. Similarly, in other areas of the Site where visual and olfactory evidence of contamination was not observed, laboratory analytical results indicated substantially less contamination, confirming the field observations.

6.1.3 Field and Laboratory Quality Control

The collection of samples at the Site also included the concurrent collection and analysis of field quality control (QC) samples. The laboratory analytical data reports were provided in appendices of previous documents listed in Appendix A, and in most cases the data reports include a summary of the laboratory QC procedures and the results of the QC analyses. A summary of the approximate number of field and laboratory control samples is as follows:

1984 to 1988 - Data Included in Environmental Data Report

Field and Laboratory QC Samples for Soil and Groundwater

- 19 trip blanks
- 12 field blanks
- 21 field duplicates
- 33 laboratory blanks
- 33 laboratory duplicate samples
- 34 site-specific and laboratory matrix spikes

1995 to 2001 – Evaluations for Petroleum in Soil / Bioremediation

Field and Laboratory QC Samples for Soil

- 15 laboratory blanks
- 4 laboratory duplicate samples
- 25 site-specific and laboratory matrix spikes

1989 to 2003 – Long-Term Groundwater Monitoring Program

Field and Laboratory QC Samples for Groundwater

- 10 trip blanks
- 3 field duplicates
- 25 laboratory blanks
- 13 site-specific and laboratory matrix spikes

The numbers and types of field and laboratory QC samples collected during the course of these investigations and described above are considered to be significant. For purposes of the risk characterization, duplicate sample measurements were averaged together. If both measurements of the pair were not detected, the average was treated as a non-detect value. If either was detected, the average was treated as the detected value for that sample.

6.2 Data Quality Asbestos

In response to concerns raised by community members about the potential presence of asbestos at the Site and potential exposures to such material in the event the Site was redeveloped, three separate asbestos sampling programs were completed at the Grace Site in May and December of 1998 and September of 2003. Asbestos sampling locations were selected based on historic property use, including the presence of former buildings and process piping connecting facility components comprised of ACMs. The sampling programs in May and December of 1998 were developed by W.R. Grace and were reviewed and agreed upon by the DEP, the COC, and the ASG. The 2003 supplemental sampling program followed the same sampling protocols and laboratory analysis methods.

6.2.1 Sample Collection

Subsurface and surficial soil samples were collected at the Site. Surficial soil samples were collected from the 0-0.5 ft depth interval, and subsurface samples were collected from 0.5-4 ft bgs interval. A limited number of samples were also collected and submitted for analysis at the 0 to 4, 4 to 8 ft, and 8 to 12 ft depth intervals. Regardless of the sample type (surface or subsurface), the sample consisted of composites from material collected over thicknesses of as much as 5 feet (i.e. 0-5 ft bgs).

6.2.2 Analytical Methods

EPA Region 1 Protocol for Screening Soil and Sediment Samples for Asbestos Content was used to prepare the soil samples for the determination of the presence and concentration of asbestos. This method for sample collection and sample analysis was agreed upon by W.R. Grace, the DEP, the City of Cambridge, and ASG in advance of the 1998 sampling activities. It is also the method required under the City of Cambridge Asbestos Protection Ordinance. The collected data was used in the risk characterization to assess potential risk associated with large-scale excavations and emergency utility repairs. The reporting limits are considered to be appropriate for the site setting.

Groundwater and surface water samples were collected from wells and analyzed for asbestos content using the EPA Drinking Water Method (EPA-600/4-83-043 (100.1)). Sediment samples were collected, prepared, and analyzed in accordance with the EPA Region 1 Protocol and using PLM.

Air samples collected at the Site were analyzed using PCM (NIOSH Method 7400), in accordance with the AHERA Protocol, for the presence of fibers, and/or TEM (NIOSH Method 7402) for the presence of asbestos fibers (two samples were analyzed using both PCM and TEM) for quality control.

The sampling and analytical methods used for analysis of soil, groundwater, surface water, sediment, and air at the Site consisted of the best available methods at the time of analysis. The data collected was used to assess the nature and extent of contamination at the Site, as well as to evaluate risk associated with current and future uses of the Site.

6.2.3 Field and Laboratory Quality Assurance/Quality Control

The ASG and the COC retained environmental consultants, GeoInsight, Inc. and EnviroSense, Inc., respectively, to collect split soil samples during the field component of the December 1998 asbestos sampling program. Prior to the start of the field work, both groups agreed to request that their laboratories use the same method being used by Grace to analyze the split soil samples for asbestos content (EPA Protocol combined with PLM). Both groups sent their split samples to Severn Trent Laboratories, Inc. (STL). Because the three parties were splitting samples, three duplicate samples were often collected and analyzed (one by each interested party) from one sampling location. Each split sample is included in the data set for the risk characterization as its own individual data point.

All samples collected were visually examined in the sampling device for the presence of asbestos containing material and possible stratification of such material. No evidence of either condition was observed in any of the samples collected. The results of the laboratory analyses completed at the Site confirmed these observations. The sample results display a completely random pattern of information.

Five groundwater sampling events were conducted from October 1999 through May 2000. Multiple rounds of samples were completed to assure the reproducibility of the data results, particularly during a period of time where season changes impact groundwater levels. This data was used to characterize the nature and extent of contamination at the Site, and to evaluate potential migration into the MBTA tunnel.

6.3 MCP Data Quality Enhancement Program (DQEP)

Recently, DEP has implemented a MCP Data Quality Enhancement Program (DQEP) and issued guidance regarding this program. As of August 2003, the Department expects that analyses of all samples used to support MCP actions will address enhanced data quality objectives. To facilitate this, the Department has developed specific analytical methods and offers a "Presumptive Certainty" option for data that are derived using these methods and that meet certain other program requirements.

The data used to characterize the Site was collected from 1984 through 2003. The laboratory analytical data have previously been provided to the DEP in the documents listed in Appendix A. With the exception of the September 2003 asbestos sampling program, all samples were collected prior to August 2003. Currently, the analytical methodology parameters for asbestos are excluded from DQEP policy and the DQEP Compendium of Analytical Methods. However, a discussion of asbestos is also included herein.

During the 20 years that this Site has been under various phases of DEP regulation, response actions completed were conducted in general accordance with DEP procedures and guidelines consistent at the time of investigation. Similarly, samples were analyzed by approved EPA and DEP analytical methodologies and QC methods in effect at the time of analysis.

6.4 Data Representativeness

Representativeness expresses the degree to which site information and data accurately characterizes the types, locations, and concentrations of oil and hazardous materials at a site. Evaluation of representativeness is a qualitative assessment based upon observed conditions and measurements. The assessment of representativeness should also consider observations such as site history (sampling in areas of suspected contamination), visual and olfactory observations, physical features, sample collection procedures, sample preservation, and selected testing methods.

A complete list of compounds tested for in soil, groundwater, surface water, sediment, and air and the analytical method utilized is included in Table III. A total of 133 compounds have been tested for at various frequencies in soil, groundwater, surface water, and groundwater (including asbestos). These compounds include not only the standard components typically included in a site characterization, but also site specific compounds (phenols, formaldehydes, and vinyl acetate, methyl acrylate, isobutyl ether, hexylene glycol,

butadiene, di-n-butyl maleate). These compounds were included as target analytes based on an understanding of their potential prior use at the Site.

Explorations at the Site were developed to assess the nature and extent of contamination based on researched historical operations, chemical use and storage, and known waste handling practices. The most recent OHM explorations (1995 - 2003) were completed in locations in which additional testing was required to more completely characterize the extent of contamination.

The nature and extent of compounds detected in soil and groundwater at the Site, including several VOCs (particularly BTEX compounds), metals (particularly lead and zinc), petroleum hydrocarbons, SVOCs (particularly naphthalene), formaldehyde, and cyanide are consistent with the known history of the property (manufacturing, waste disposal, and chemical storage) and the visual and olfactory evidence of contamination encountered over the past 20 years of site characterization. In addition, asbestos was present in former and current building materials and insulation products. In general, the highest detected levels of contaminants and the most visibly contaminated soils were found in areas which correspond to the historical activities depicted on Figure 3. In areas where manufacturing, waste disposal, or chemical storage was not conducted, the data set and visual observations for the Site indicates non-detect to low levels of contamination. Petroleum compounds and naphthalene are the predominant chemical compounds of concern in both soil and groundwater.

6.4.1 Petroleum Compounds in Soil

A review of the historical use of the property and the data collected at the Site indicate that the petroleum products historically stored at the property were located in the central portion of the Site, in the area where the EPH and VPH data were obtained and are therefore available. The fuel oils stored on Site tended to be primarily the heavier No. 4 and No.6 fuel oils. Tanks containing products that might be considered to have had volatile components include a light oil tank, and a diesel fuel/gasoline tank, shown on Figure 3. The Site coverage provided by the 1998 EPH/VPH evaluation for petroleum compounds in soil targeted areas in which previous elevated TPH concentrations had been identified and included the areas of the Site where the former fuel oil tanks were located. The TPH data was used as a screening tool to evaluate the nature and extent of contamination. It is appropriate and conservative to use the EPH/VPH data to evaluate the risk associated with the petroleum compounds. The EPH/VPH samples were collected in the areas of the Site most significantly impacted by petroleum releases, therefore use of this data conservatively biases the exposure concentrations toward the most contaminated areas of the Site.

Although in a few instances (EPH/VPH) surrogate recoveries and matrix spike results are outside the recommended ranges, the results were determined to be acceptable and are suitable for the intended use. The laboratory data reports for the EPH/VPH sampling program indicate acceptable VPH surrogate recoveries for 26 of the 32 soil samples tested. The six VPH Lab Control Samples (LCS) and six VPH Method Blanks indicated batch QC data that was acceptable for the sample deliverables. The VPH surrogate recoveries could not be measured on four of the remaining six samples, where laboratory dilutions were required to provide accurate

quantification of sample hydrocarbons. On two occasions, the laboratory reported VPH surrogate recoveries that were slightly below method-specified criteria.

The EPH data indicates acceptable EPH fractionation and extraction surrogate recoveries for 24 of the 32 soil samples tested. The three EPH LCS samples and three EPH MB samples indicated method batch QC data that was acceptable for the sample deliverables. The EPH surrogate recoveries could not be measured on three of the remaining eight samples, where laboratory dilutions were required to provide accurate quantification of sample hydrocarbons. On five occasions, the laboratory reported EPH surrogate recoveries that were outside of method-specified criteria.

Given the nature of the samples which contained high levels of degraded hydrocarbons, the limited instances where QC was outside of method recommendations are not anticipated to impact the overall data quality of the sampling and analysis effort. Therefore, the laboratory data is used herein without further qualification.

6.4.2 VOCs in Soil

Generally, the methanol-preserved VPH target VOC results are also consistent in nature to the VOC results for these compounds that were collected before the preservation policy enhancement. However, the average results for the BTEX compounds detected in the pre-1990 analyses (pre-methanol) are consistently lower than those detected during the 1999 EPH/VPH program. Thus, as a conservative measure the pre-1990 BTEX results were ignored in the risk characterization and the VPH BTEX measurements were used in their place. The pre-1990 BTEX results were retained as an indicator of the extent of BTEX contaminants at the Site.

For the other volatile compounds detected at the Site, the pre-1990 data was relied on to evaluate the extent of contamination and to assess risk. Groundwater data collected for over 10 years at the Site has demonstrated that the Site has not been significantly impacted by volatile compounds. Historic site use and chemical use does not suggest that a large number of volatile chemicals (outside of the petroleum related compounds) were used at the Site. Comparison of the BTEX compounds detected pre-1990 and during the 1998 EPH/VPH program does not show significant differences between the maximum values detected. Therefore, for the limited number of additional VOCs detected at the Site, it is our opinion that the use of the pre-1990 data set is appropriate for assessing of existing site conditions.

6.4.3 Groundwater

The methods used for the most recent analyses for groundwater and surface water for VOCs and naphthalene are appropriate. Therefore, although the historical data was used to assess the nature and extend of the contaminants and demonstrate continued improvements in groundwater quality at the Site, only the most recent data was used in the risk characterization.

6.4.4 Asbestos

Asbestos fibers have also been detected, primarily in soil. Many of the former buildings are known to have been covered with asbestos siding. Additionally, the process piping connecting the facility components are suspected to have been covered in asbestos containing materials. While only a few larger pieces of debris have been found on the surface of the Site, the detection of asbestos fibers is consistent with the former existence of buildings and piping at the Site that utilized asbestos containing material.

The collected asbestos data was used in the risk characterization to assess potential risk associated with large-scale excavations and emergency utility repairs. In both situations, the excavation process would generate material that would be mixed together and consolidated in the process of removing it from its current location. The concentration of asbestos in this material (as consolidated during excavation), and its relevance to possible exposure of workers and adjacent residents, is best characterized through the use of composite samples. Accordingly, the sampling protocol and data results are considered appropriate for the data use.

Although a new method is currently under development for analysis of asbestos fibers in soil (the Superfund Method), as described further in Section 6.6, it is our opinion that the composite sampling method and EPA Region 1 Protocol for Screening Soil and Sediment Samples for Asbestos Content is also appropriate for evaluating the potential future exposure at the W.R. Grace Site. Also studies presented by others at the 2004 University of Massachusetts, Annual Conference on Soils, Sediments and Water have shown that the Superfund Method produces airborne asbestos values lower than those derived using the methods used in this study.

6.5 Data Completeness

Completeness is a measure of the amount of valid data obtained for the Site, compared to the amount expected under normal conditions. As described previously in this report, hundreds of soil, groundwater, surface water, and sediment samples have been collected and analyzed for OHM and asbestos at the Site since the early 1980s. Table III provides a summary of the number of samples analyzed for each of the various contaminants (VOCs, PAHs, petroleum compounds etc.).

As requested by DEQE in the 1987 NOR, Haley & Aldrich undertook a quality assurance/quality control data validation process for the data obtain and included in the 1988 EDR. This consisted of development of a set of criteria by which soil and water data could be determined to be valid, approximate, or invalid. A detailed summary of this process is included in Section III of the 1988 EDR. In general, the data validation process in 1988 resulted in the rejection of very few compounds (typically not site compounds of concern, but rather compounds such as phenols, phthalates, methylene chloride, and some metals) within a given sample or a set of samples. Sample data where Site COCs were detected was typically not rejected. Results for soil and groundwater samples collected from 1989 through 2003 for the various evaluations of petroleum in soil and the periodic groundwater monitoring program were also reviewed by Haley & Aldrich for QA/QC parameters and the results were determined to be applicable.

For purposes of the Risk Characterization, rejected data results are considered unreliable and not representative of Site conditions and therefore have not been included. The samples which represent valid data amount to approximately 928 soil samples (752 asbestos, 176 for various OHM), 194 groundwater samples, 62 surface water samples, and 19 sediment samples. This is considered to exceed the amount of sampling and data which would be expected under normal site characterization conditions.

In many cases half the reporting limit for compounds with high detection limits was within or higher than the range of levels detected at the Site. The result is likely to over estimate the presence of certain compounds in soil.

Table 6.1 in the risk characterization (Appendix D) lists the reporting limits assumed for compounds used in the risk characterization.

Haley & Aldrich has reviewed the analytical laboratory data reports for the sampling and analysis conducted at the Site over the past 20 years. The collected data does not meet the August 2003 Presumptive Certainty requirements since all data except for the September 2003 asbestos sampling was collected prior to August 2003. Therefore, our review of the data as presented in this section is intended to satisfy the current DQEP requirements. We have assessed the data herein for selected quality assurance/quality control (QA/QC) parameters and conclude that the results are acceptable for incorporation into this RAO Statement and are suitable for the intended use. However, two possible conclusions made in support of using existing data for this opinion warrant further clarification. These two conclusions are the use of unpreserved VOC data and asbestos in soil data not derived from the Superfund Method. The appropriateness of using this data is discussed further below.

6.6 Data Usability Conclusions

Our evaluation of data available for this opinion and how it was used to support this opinion is described in the previous sections. In general, data were used to determine general nature and extent and to assess risk.

It is our opinion that the RAO can be filed without additional soil data collected using methanol preservation. The availability of soil sample headspace data supports the conclusion that there is not a significant source of VOC contamination in the soil. Insignificant levels of VOCs have been identified in the groundwater over the years, indicating that there is not a source of VOC contamination present. Areas of past storage of petroleum materials and other chemicals are located in what is now a paved parking lot. Methanol preserved data are available for petroleum contaminated samples. A current or future exposure that warrants the added precision that methanol preservation may provide for non-petroleum VOCs has not been identified.

It is our opinion that the risk characterization uses conservative exposure point concentrations for the volatile components at the Site. In addition, conditions have likely improved as a result of ongoing natural attenuation and degradation since the issuance of the 1988 EDR and the 1998 EPH/VPH report.

The collected data was used in the risk characterization to assess potential risk associated with large-scale excavations and emergency utility repairs. In both situations, the excavation process would generate material that would be mixed together and consolidated

in the process of removing it from its current location. The concentration of asbestos in this material (as consolidated during excavation), and its relevance to possible exposure of workers and adjacent residents, is best characterized through the use of composite samples. Visual observations were made of each sample collected for compositing and no indications of concentrated areas of ACM were observed. Accordingly, the sampling protocol and data derived are appropriate for its intended use.

It is acknowledged that the Superfund Method is the preferred DEP method of analysis for samples to be used in a risk characterization under the proposed draft DEP Asbestos in Soil Policy. The purpose of the newer asbestos testing method still being fully developed (the Superfund Method) is to more closely simulate the presence of asbestos that might be released from the soil into the air. Although Superfund Method of analysis was not used at the Site, it is not required to allow the Method 3 risk characterization prepared for the Site to conclude that there is no current risk for asbestos. This same conclusion has been independently reached by EPA and ATSDR without Superfund Method data. Their conclusions did not rely upon soil data collected as a part of Haley & Aldrich's site investigation. The EPA collected their own samples and data.

The approach used in the Phase II CSA risk characterization concluded that there was potential future risk under an uncontrolled, large-scale excavation scenario. An alternative method of analysis (such as the Superfund Method) or revised modeling assumptions would either support the conclusion that there is potential future risk, or, it is possible that the alternative method of analysis would support the conclusion that there is No Significant Risk in the future. If it were concluded that there is no risk under future excavation scenarios, future construction would be allowed under the MCP, with no risk management procedures.

Therefore, we believe that the approach selected, which concludes that there is potential future risk and the implementation of the AUL outlining management procedures to control that risk, is the more appropriate approach for this property.

7. METHOD 3 RISK CHARACATERIZATION

Cambridge Environmental, Inc. has prepared a Method 3 Risk Characterization for oil and hazardous materials, including asbestos at the Site, which is included in Appendix D of this RAO.

In July 2000, DEP prepared a memorandum (31 July 2000), indicating that the 1988 risk characterization was no longer adequate for the Site, given the recent detection of asbestos in soil at the Site. DEP further indicated that data for the Site (asbestos and new data for other contaminants) generated since the completion of the 1988 risk assessment and Phase II CSA (i.e. 1998 report entitled "Environmental Data Report") needs to be incorporated into risk calculations for the Site. In addition to the asbestos data now available for the Site, Haley & Aldrich had completed a soil characterization program for EPH and VPH, and an in-situ Bioremediation program to address elevated EPH levels (Section 1.4). This Method 3 Risk Characterization included in Appendix D consists of a re-evaluation of total site risk, considering the new data for other contaminants at the Site, in accordance with the MCP.

The MCP requires that an assessment be made to determine if any current or foreseeable risk exists to public health, welfare, safety and the environment, as a result of the presence of OHM, including asbestos in the soil at the property. In accordance with the MCP, the risks to human health, safety, public welfare, and the environment have been characterized for soil, groundwater, surface water, and ambient air at the Site and adjacent properties.

Current Site use generally consists of commercial occupancy, paved parking, and access to public transportation. The following receptors were evaluated for current site use:

- residents of all ages adjacent to the Site;
- adult office workers on Site (including exposure as children visiting the site prior to working as office workers on the Site);
- transient persons (MBTA subway users, pedestrians, and trespassers, including both adults and children);
- adult utility workers.

For the foreseeable future, the Site is likely to continue to be used in a manner consistent with its current use as a commercial facility. W.R. Grace currently has no plans for any development on the Site. However, to be conservative and consistent with previous risk characterizations for the Site, the risk characterization considered a hypothetical future use scenario involving large scale excavation of contaminated soil. The scope and size of the scenario evaluated could likely not be constructed at this property in the future due to existing local and state regulations related to zoning, wetlands, and flood plains. Therefore, this scenario likely over estimates risk. Future risks are evaluated for the following future receptors:

- residents of all ages adjacent to the Site;
- adult office workers on Site during construction and for long-term occupancy of buildings on Site (including exposure as children visiting the site prior to working as office workers on the Site);
- transient persons (MBTA commuters, pedestrians, and trespassers, including adults and children);

- adult utility workers;
- adult construction workers on Site (during construction);
- children visiting the site (e.g. to retail stores) after construction.

Visitors and transient users of the Site (children and adults) are considered implicitly because risks would be less than for the adjacent resident, utility worker, or future construction worker whose risk are explicitly evaluated.

Exposure scenarios evaluated quantitatively in the analysis are: inhalation of airborne asbestos and incidental ingestion of asbestos in soil; inhalation of vapors emanating from soil, inhalation and ingestion of contaminants in fugitive dust, as well as dermal contact during recreational and hypothetical construction activities.

Several potential exposures were excluded from evaluation under the risk characterization. Exclusion of these scenarios from evaluation requires that the potential exposures be eliminated through the use of an AUL, per 310 CMR 40.1012(2). The potential exposures excluded are as follows:

- residential use of the Site;
- use of groundwater;
- use of the Site for growing of foods for human or animal consumption;
- site use/activity involving the presence of non-adults on the Site for periods more than would be expected for visits (e.g., schools, playgrounds, day care centers excluded);
- evaluation of potential vapor intrusion into hypothetical future new buildings.

The follow section (Section 8) describes AULs to be implemented at the Site. Restrictions and Obligations and Conditions have been outlined to eliminate the potential exposures associated with these excluded scenarios.

The Risk Characterization concludes the following:

Current Conditions:

- A condition of No Significant Risk to human health exists at the Site for receptors evaluated for potential exposures associated with both asbestos and OHM. For asbestos, this finding is supported by the air quality data assembled for the Site. A similar conclusion was reach by ATSDR in their Public Health Consultation completed for the Site. For OHM, this conclusion is consistent with the previous risk characterizations completed for the Site in 1988, 1989, 1990, and 1994.

- A condition of No Significant Risk to the environment exists at the Site. Under current conditions, the characterization of risks to the environment concluded that exposure of environmental receptors to Site related contaminants is limited.

- A condition of No Significant Risk to public welfare exists at the Site. The characterization of risks to public welfare did not identify conditions that may negatively affect the surrounding community.

- A condition of No Significant Risk to safety exists at the Site. The characterization of risks to safety under current conditions and during emergency utility excavations indicated that no significant risks were identified.

Future Conditions:

- A condition of No Significant Risk to human health exists for future conditions that do not involve construction or movement of contaminated soil.

- For the foreseeable future, the Site is likely to continue to be used in a manner consistent with its current use as a commercial facility. W.R. Grace currently has no plans to develop the Site. However, to be conservative and consistent with previous risk characterizations for the Site, the risk characterization considered a hypothetical future use scenario involving large-scale excavation of contaminated soil (containing asbestos and OHM) that then remains on the surface. Under the hypothetical construction scenario, the incremental cancer risk estimates for adjacent residents, the office workers, and the hypothetical construction worker potentially exposed to soil at the Site exceed DEP's guidelines for achieving a condition of No Significant Risk due to the assumed presence of asbestos in the exposed soil.

  An AUL will be implemented at the Site to maintain a condition of No Significant Risk during such hypothetical future activities. The AUL will require the development of a health and safety plan, a soil management plan, and an airborne asbestos, dust, and odor management and monitoring plan during construction. The AUL will also need to require that the existing "protective cover" at the Site (surface soil, pavement, concrete slabs, pavement and concrete slab sub-base materials, structures, topsoil/loam, and landscaping) be maintained. If asbestos-containing soil is uncovered or disturbed during any intrusive activity the AUL will require that it be covered with a protective cover (i.e. clean soil, pavement, etc) of equal protective function to that which currently exists.

- A condition of No Significant Risk to the environment exists at the Site. The characterization of risks to the environment in the future concludes that exposure of environmental receptors to Site related contaminants is limited.

- The characterization of risks to public welfare under the hypothetical construction scenario concluded that potential odors generated during the excavation of naphthalene contaminated soils could potentially create a nuisance condition. Therefore, the risk characterization concluded that a condition of No Significant Risk to public welfare could not be achieved without mitigating efforts. An AUL will be used to require an odor mitigation plan for future construction activities. Once implemented at the Site, the AUL could be used to maintain a condition of No Significant Risk to public welfare during such hypothetical future activities

- A condition of No Significant Risk to Safety exists at the Site in the future (even during large-scale construction) with one exception. If small scale excavations were to be completed at the Site over a short period of time in the most contaminated areas of the Site, there is the potential for the hypothetical construction worker to be exposed to vapors from volatile contaminants in soils which might exceed the OSHA PEL for an 8 hour day. However, this exposure would be adequately addressed by the AUL per the conditions to be implemented to address the large-scale excavations.

8. ACTIVITY AND USE LIMITATIONS

This Class A-3 RAO Statement is based on the implementation of AULs. Three AULs have been prepared as Notices of Activity and Use Limitation. Copies of the AULs, which include AUL Transmittal Forms (BWSC-113), Notice of AUL Forms (Form 1075), AUL Opinion Forms (BWSC-113A), and AUL Opinions, are presented in Appendix E.

The W.R. Grace Disposal Site consists of 25 acres of land partially bounded by Whittemore Avenue to the north; Harvey Street and Russell Field to the east; Rindge Avenue to the south; and the Alewife Brook Parkway and a residence to the west. Two of the three AULs, mentioned above, have been implemented for 24 of the 25 acres of the Disposal Site. An AUL was previously recorded on 28 October 1999 for the remaining 1 acre of the Disposal Site, which is known as One Alewife Center (Appendix F).

In addition, the area subject to the AULs include four (4) parcels located to the north of Whittemore Avenue, used for parking lots, consisting of 1.6 acres which are not part of the W.R. Grace Disposal Site. The third AUL, mentioned above, was also implemented for the Former Lehigh Metals and Babo's Site (RTN 3-3411) located at 134 Alewife Brook Parkway which consists of two (2) parcels totaling 2.2 acres and is owned by Alewife Land Corporation. The four parking lot parcels to the north of Whittemore Avenue and the Former Lehigh Metals and Babo's parcel are not part of the W.R. Grace & Co. Disposal Site associated with RTN 3-0277, however AULs have been implemented on these properties since they are owned by W.R. Grace & Co. – Conn. and in response to community concerns. Although AULs have been implemented on these additional properties, this Class A-3 RAO Statement does not apply to them and they are not necessary to maintain a condition of No Significant Risk for the W.R. Grace & Co.-Conn. Disposal Site.

The parcels of land subject to the three AULs consist of 27.8 acres in total, comprised of 24 individual parcels of land, owned by W.R. Grace & Co.-Conn. and the Alewife Land Corporation, as in the Table below.

Owner	No. of Parcels	Total Size (acres)	Type
W.R. Grace & Co.-Conn.	20	8.1	Unregistered and Registered
Alewife Land Corporation	4	19.7	Unregistered and Registered

The AULs were recorded separately at the Middlesex South District Registry of Deeds and/or Middlesex South Registry District of the Land Court for each of the land owners described above on 6 March 2006. A certified copy of each AUL, bearing the Registry of Deeds book and page numbers and/or Registry Land Court document numbers, is being submitted to DEP concurrently with this RAO in accordance with 310 CMR 40.1074(4). In accordance with 310 CMR 40.1403(7)(a), copies of the AULs were provided to municipal officials. In addition, a legal notice identifying the recording of the AULs in accordance with 310 CMR 40.1403(7)(b) was published in the Cambridge Chronicle on 9 March 2006. Copies of the letters to municipal officials accompanying the distribution of the AULs and a copy of the published notice are being provided to DEP within 7 days of publication.

Exhibits B-1 and B-2 of the AULs are sketch plans which show the relationship of the Disposal Site to the parcels of land addressed by the AULs and depict the protective cover materials. Figure 13 is a plan showing the AUL areas.

The AUL Opinions, contained within the Notice of AULs, identifies permitted activities and uses, activities and uses inconsistent with the AUL Opinion, and obligations and conditions for the soil portion of the Disposal Site. Although low levels of contaminants have been identified in groundwater and have been included in the Risk Characterization, it is the presence of asbestos and other contaminants in soil which require the implementation of an AUL. Jerry's Pond has been included with in the limits of AUL, although based on sampling activities in the pond; there is no evidence to suggest that the surface water and sediments of Jerry's Pond have been adversely impacted as a result of the historic releases of OHM.

As described in Section 7, the results of the Risk Characterization indicate that based on current and reasonably foreseeable uses, a condition of No Significant Risk of harm to human health, public welfare, safety, and the environment exists at the Disposal Site. For the foreseeable future, the Property is likely to continue to be used in a manner consistent with its current use as a commercial facility. However, the risk assessment considered a hypothetical future use scenario involving excavation of soils in which asbestos and other OHM contaminants of concern were identified.

Under this hypothetical future use scenario, the Risk Characterization concluded that a condition of No Significant Risk to human health would not be achieved because of the potential exposure to asbestos containing soil. Therefore, AULs were implemented at the Disposal Site to maintain a condition of No Significant Risk during such hypothetical future activities. The AULs require the development of a health and safety plan, a soil management plan, and an airborne asbestos, dust, and odor management and monitoring plan during activities that are likely to disturb the soil below the existing "Protective Cover" (surface soil, pavement, concrete slabs, pavement and concrete slab sub-base materials, structures, topsoil/loam, and landscaping). The AULs also require that the existing "protective cover" at the Site be maintained. If asbestos-containing soil is uncovered or disturbed during any intrusive activity, the AULs require that it be covered with a protective cover (i.e. clean soil, pavement, etc) of equal protective function to that which currently exists.

In the event of future disturbance to the soil at the property resulting from intrusive activities, management plans will be developed and utilized to prevent exposures to airborne asbestos and OHM contaminated soil. The plans will direct that all intrusive activities be conducted in a wet environment to prevent potential liberation of asbestos particles, and work be implemented in a manner to control potential airborne asbestos concentrations during soil disturbing activities. Additionally, although a level of No Significant Risk can be achieved for the construction worker exposed to OHM, the workers will be required to follow standard soil management and worker health & safety practices during Intrusive Activities at the Disposal Site.

The characterization of risks to safety finds that if no safety precautions are taken during small-scale hypothetical future excavations in the areas of the Site with the most significant petroleum related contaminants, construction workers may be exposed to certain volatile Site

contaminants in excess of the Occupational Safety and Health Administration's (OSHA's) permissible exposure limits (PELs). The AULs require that a health and safety plan be implemented during construction work to ensure that construction workers are not exposed to volatile compounds at concentrations above the PEL, and therefore a condition of No Significant Risk to safety would be achieved.

The characterization of risks to public welfare under the hypothetical construction scenario concluded that potential odors generated during the excavation of naphthalene contaminated soils could potentially create a nuisance condition. Therefore, the risk characterization concluded that a condition of No Significant Risk to public welfare could not be achieved without mitigating efforts. The AULs require that an airborne asbestos, dust, and odor management and monitoring plan be implemented during possible future construction activities to ensure that on-site and off-site receptors are not exposed to nuisance odor levels due to naphthalene. The AULs ensure a condition of No Significant Risk to public welfare during such hypothetical future activities.

As discussed in Section 7, several potential exposures were excluded from evaluation under the risk characterization. Exclusion of these scenarios from evaluation requires that the potential exposures be eliminated through the use of the AULs. Therefore, in addition to the obligations and conditions described above, the AULs indicate that following are not permitted activities at the Site:

- use of the site as a residence;
- use of the site as a school, nursery, daycare, recreational area, and/or such use at which a child's day-long presence is likely;
- active recreational uses, such as athletic fields or playgrounds, involving more than casual contact with existing ground;
- use of on-site soils for cultivation of fruits or vegetables destined for human consumption.

The AULs allow the use of the existing building for office, industrial, retail, commercial, and research and development and the use of un-built areas for paved parking, paved public walkways, and open space. The AULs limit the use of the property to Permitted Uses. The AULs also requires that the existing surface soil, pavement and concrete slabs, pavement and concrete slab sub-base materials, structures, topsoil/loam, landscaping or the like (considered to be "Protective Cover") be maintained and/or replaced upon completion of soil disturbing activities.

The AULs require an evaluation of the need for a vapor barrier, or sub-slab venting system, for new buildings constructed at the Site in the future.

Finally, the AULs require that a draft of any proposed changes to the AULs or any monitoring plans be developed for public comment.

9. RESPONSE ACTION OUTCOME

9.1 Limits of Disposal Site and RAO

The limits of the Disposal Site have been developed individually for soil and groundwater contamination. The horizontal extent of the Disposal Site for soil had been determined to be the 25-acres of land to the south of Whittemore Avenue owned by W.R. Grace & Co.-Conn. (17.5 acres), Alewife Land Corporation (6.5 acres), and New Boston Limited Partnership (1 acre - One Alewife Center property). While this encompasses more of the property than the data would indicate is necessary, the property limits have been assumed to be the limits of the Disposal Site for the ease of applying the AUL. Although the AUL limits include four parcels to the north of Whittemore Avenue, there is no indication that any operations were conducted by W.R Grace or their predecessor that would warrant including these parcels within the limits of the Disposal Site and therefore they are not included within the limits of the Disposal Site. The limits of the Disposal Site for soil contaminants are depicted on Figures 12 and 13.

Soil quality has been impacted by several VOCs, metals, petroleum hydrocarbons, SVOCs, formaldehyde, and cyanide. Soil quality also has been impacted by asbestos fibers. An insignificant amount of ACM debris has been found in the fill materials. Based on the results of the EPA site investigation for asbestos in 2000, it has been concluded that asbestos fibers are not present in the top 3-inches of surface soil. The primary contaminants of concern are petroleum products, naphthalene, and asbestos. Figure 12 also depicts the areas of the Site in which a majority of petroleum, naphthalene, and/or asbestos is present in soil. Although the horizontal Disposal Site limits include a much larger area, the extent of the most contaminated soil is limited to four small areas.

The vertical limits of the soil impacted by these contaminants are considered to be generally confined to the fill and organic soils present. In a few areas, the natural sands at the peat-sand interface may also be impacted. The vertical limits of the Site therefore extend to approximately 10 to 15 ft below existing ground surface.

Figure 12 also depicts the limits of the Disposal Site for naphthalene in groundwater. Monitoring wells B603-OW and B604-OW from the long-term monitoring program are located downgradient of the property along Alewife Brook. Although naphthalene has been detected in these wells, the concentrations detected have been decreasing steadily since 1987. As shown on the figure, the naphthalene contamination in groundwater extends from the northern edge of the MBTA tunnel in a northwesterly direction to Alewife Brook.

Asbestos fibers found in the groundwater samples are not believed to be representative of groundwater conditions at the Site. Fibers, which normally would not be present or moving with the groundwater, were present in the water samples. Their detection in groundwater is thought to be an artifact of the disturbance of groundwater and resultant sampling of suspended solids. Therefore, asbestos fibers in saturated soils are not thought to be migrating on-site or off-site in the groundwater.

Although it is included within the horizontal limits of the Disposal Site, evidence does not exist to suggest that the surface water and sediments of Jerry's Pond have been adversely impacted as a result of the historic releases of OHM and asbestos from the property. The

pond has been included within the boundaries of the Disposal Site primarily due to the logistical difficulties of documenting its limits to exclude it.

The RAO applies to the limits of the Disposal Site delineated for both soil and groundwater as depicted on Figure 12.

9.2 Uncontrolled Sources

The sources of the petroleum and naphthalene related contamination are attributed to the historic use of the Site for manufacturing and chemical storage. A large volume of naphthalene contaminated material was previously removed from the Site by the MBTA in conjunction with the construction of the Red Line extension. Additionally, approximately 600 cubic yards of petroleum and naphthalene contaminated soils were treated as a part of a field test for a proposed biological treatment program in 1989. A majority of the chemical and fuel oil storage tanks were located near the former buildings (now parking lots and vegetated areas). The known USTs have been removed from the Disposal Site except for the former 10,000 gallon tank near Building 8, which was filled with sand and abandoned in-place. An Enhanced In-situ Bioremediation remedial program was implemented in the area of the Disposal Site with the highest concentrations of EPH. The Bioremediation successfully reduced EPH levels in soil to below UCLs in the vegetated area located immediately to the east of the path from the parking lots to the MBTA station.

The presence of asbestos contamination at the Disposal Site is most likely due to the historic use of asbestos containing construction materials for building siding and thermal insulation on exterior piping. Activities associated with the long historic development and the decommissioning of the former facility in the early 1980s probably released the asbestos fibers to the environment. However, very little ACM debris has been found during the investigation programs.

From 1930 to 1935, small quantities of asbestos may have been used by Dewey & Almy at the Cambridge Site in conjunction with pilot-scale operations for manufacturing a type of brake lining that was molded with asbestos and latex and for production of latex impregnated asbestos sheets. However, both pilot-scale operations occurred for a short duration in just 2 of the 46 buildings which historically occupied the Site. There is no evidence to suggest that asbestos was used in the manufacturing processes conducted at the Site by either Dewey & Almy or W.R. Grace.

Based on the assessment and response actions completed at the Site, and the results of the long-term groundwater sampling program, which show steadily decreasing concentrations of contaminants in groundwater, Haley & Aldrich concludes that no on-going or uncontrolled sources of contamination have been identified at the Site. Therefore, it is our opinion that there are no uncontrolled sources of Oil or Hazardous Material (OHM), as defined by 40.1003(5) of the MCP, remaining at the Site.

9.3 Feasibility of Achieving/Approaching Background

Feasibility of achieving/approaching background in accordance with 310 CMR 40.0860 is evaluated below in conformance with DEP Policy #WSC-04-160, "Conducting Feasibility Evaluations Under the MCP," dated July 16, 2004.

The primary contaminants of concern in soil at the Site are petroleum compounds, naphthalene, and asbestos. Surface soil at the Site is categorized as S-2 since children are assumed to visit the Site on an infrequent basis. Categorization of Site soil was based on low frequency/low intensity use by children. Asbestos in soil at the Site is considered to be a persistent contaminant, as defined in Table 9-2 of DEP Policy #WSC-04-160. Therefore, approaching or achieving background for asbestos is categorically infeasible.

An Enhanced In-situ Bioremediation remedial program was implemented in the area of the Site with the highest concentrations of petroleum compounds (EPH) under a RAM. The RAM successfully reduced EPH levels in soil to below UCLs. As described in the Phase III RAP, to achieve background in the Bioremediation area, excavation and disposal of soil at a secure landfill would be required. Due to the potential presence of asbestos, the cost to approach background would be greater than $1,000,000. This cost includes transportation and disposal, plus the high cost associated with excavation inside of a temporary enclosure due to the potential presence of asbestos in the soil. Considering that a condition of No Significant Risk exists for current conditions and that a condition of No Significant Risk will be achieved for future conditions through the implementation of an Activity and Use Limitation, it was concluded that little benefit would be provided by remediation to approach background at more than ten times (1,000 %) the estimated cost of the Bioremediation RAM. Residual petroleum compounds and naphthalene in soil at the Site, detected at levels above background, are considered to be degradable/nonpersistent contaminants, as defined in Table 9-1 of DEP Policy #WSC-04-160. Therefore, approaching or achieving background for petroleum compounds and naphthalene is categorically infeasible.

Pursuant to Sections 9.3.2.3 and 9.3.2.4 of DEP Policy #WSC-04-160, it is currently categorically infeasible to achieve or approach background for the contaminants of concern in soil remaining at the Site. Accordingly, a site specific evaluation of the feasibility to achieve or approach background was not conducted

A condition of "No Significant Risk" has been demonstrated to exist currently at the Disposal Site and in the future with the recording of an AUL designed to control future exposures to contaminated soil.

9.4 Upper Concentration Limits

The only traditional OHM contaminants that have been detected at concentrations warranting a review of published UCLs are petroleum products and naphthalene. An evaluation of hot spots has been undertaken as part of the risk characterization completed for the Site, and none have been identified for OHM and asbestos.

Existing concentrations of contaminants in soil and groundwater do not exceed current UCLs for the petroleum and naphthalene related contaminants of concern. At one time, the heavier EPH carbon fraction (C11-C22 Aromatics) was present within a localized area on the Site at concentrations exceeding the UCL for EPH in soil. However, a Release Abatement Measure was successfully undertaken to bioremediate the petroleum impacted soils to levels below UCLs (Section 3, 4 and 5).

As of the date of this report, an explicit UCL for asbestos in soil does not exist in the MCP. However, in accordance with 310 CMR 40.0966(8), there is a default UCL value of 1% that

needs to be applied to any contaminant for which there is no explicit UCL. In accordance with 310 CMR 40.0996, it is appropriate to compare the site-wide average of measured concentrations of asbestos to the UCL. The site-wide average concentration of asbestos in subsurface soil, as measured by PLM, is 0.5%, and in surface soil, as measured by TEM is 0.004%, both of which are lower than 1% default UCL.

9.5 Need for Activity and Use Limitations

For the foreseeable future, the Disposal Site is likely to continue to be used in a manner consistent with its current use as a commercial facility. Based on the results of the Method 3 Risk Characterization, a condition of "No Significant Risk" of harm to human health, safety, public welfare, and the environment exists at the Disposal Site for current and foreseeable future conditions.

However, the risk assessment also considered a hypothetical future use scenario involving large scale excavation of soils, similar to that which may be undertaken if the property were ever to be developed, in which asbestos and other OHM contaminants of concern were identified. Under this hypothetical future use scenario, the risk characterization concluded that a condition of No Significant Risk would not be achieved because of the potential exposure to asbestos containing soil. However, AULs have been implemented at the Disposal Site to maintain a condition of No Significant Risk during such hypothetical future activities. The AULs require the development of a health and safety plan, airborne asbestos, dust, and odor management and monitoring plan, and a soil management plan during construction, and would also require that asbestos-containing soil or OHM contaminated soil be covered with clean soil after soil-disturbing activities.

The characterization of risks to safety finds that if no safety precautions are taken during hypothetical future excavation, construction workers may be exposed to asbestos at concentrations in excess of the OSHA's PELs. The AUL requires that a health and safety plan be implemented during construction work to ensure that construction workers are not exposed to asbestos at concentrations above the PEL, and therefore a condition of No Significant Risk to safety would be achieved.

The characterization of risks to public welfare finds that during hypothetical future excavation of naphthalene contaminated soil the resultant odors may potentially result in a nuisance condition, and thus a risk to public welfare. Therefore, the AUL requires that an airborne asbestos, dust, and odor management and monitoring plan be implemented during construction work to ensure that surrounding areas are not impacted by odors and that a condition of No Significant Risk to public welfare would be achieved.

Therefore, as described in Section 8 of this report, AULs have been prepared and recorded at the Middlesex County Registry of Deeds for the parcels of land owned by W.R. Grace and Alewife Land Corporation that comprise the limits of the Disposal Site, with the exception of the 1-acre One Alewife Center property for which an AUL was previously recorded on 28 October 1999. Figure 13 depicts the relationship of the AULs to the Disposal Site limits. The AULs included in Appendix E, in conjunction with the One Alewife Center AUL (included in Appendix F), is considered appropriate for unforeseen potential exposures and to maintain a condition of "No Significant Risk" at the Disposal Site. The AULs manage potential exposures to soil, dust, and airborne fibers assumed to represent potential future risks associated with potential exposure to asbestos or petroleum

and naphthalene in soil. The AULs also manage the odors potentially associated with large-scale excavation. The permitted uses are consistent with the current and reasonably foreseeable uses of the property (i.e., use of existing buildings for office, industrial, retail, commercial, and research and development (R&D)). Furthermore, identification in the AULs of activities and uses inconsistent with the AUL Opinion and the Obligations and Conditions set forth in the AUL Opinion provide a means for maintaining the assumptions of the risk assessment which rely upon elimination of certain exposure pathways to achieve a level of "No Significant Risk" and is a requirement of applicable DEP criteria.

Exposures to airborne asbestos and OHM contaminated soil can be prevented with a management plan developed to be utilized in the event of future disturbance to the soil at the property resulting from intrusive activities. Additionally, although a level of No Significant Risk can be achieved for the construction worker exposed to OHM, the workers would be required to follow standard soil management and worker health & safety practices during intrusive activities at the Disposal Site.

9.6 Category of RAO and Relationship to other RAOs

In accordance with 310 CMR 40.1036(3), a Class A-3 RAO can be achieved for the Disposal Site based on the following criteria:

- A Permanent Solution has been achieved;
- There are no uncontrolled sources of OHM remaining at the Site;
- Response actions at the Site have not results in the reduction of the level of OHM and asbestos in soil in all areas of the Site to below background levels. However, concentrations of OHM and asbestos do not exceed applicable UCLs;
- A condition of "No Significant Risk" exists at the Site under current and foreseeable future conditions as a result of assessment activities and response actions;
- AULs have been implemented to maintain a condition of "No Significant Risk" at the Disposal Site for hypothetical future use.

The RAO applies to both the soil and groundwater Disposal Site limits as depicted on Figure 12 for RTN 3-0277. There are no other RAOs for this Disposal Site.

9.7 Operation, Maintenance, and Monitoring

Although not required by the MCP, a Protective Cover Monitoring Plan ("PCMP") has been developed by the Licensed Site Professional of Record to be sure that the Protective Cover is being maintained. The PCMP describes methods to be used to verify that the cover materials continue to function in a manner which prevents incidental exposure, or direct contact with, subsurface soils, and, if this function is compromised, through erosion or other means, timely repairs have been made to restore this function. On-site workers should be informed of the requirements of the PCMP and the PCMP must be available at the Property at all times. Inspections will likely be conducted monthly for the first year and quarterly thereafter, and the PCMP will require logs of the inspection and any response

actions completed to be filed with the DEP and placed in the current public document repositories.

No other operation, maintenance, and/or monitoring activities, as defined in the MCP, will be required to confirm and/or maintain the conditions of No Significant Risk at the Site for which this Class A-3 RAO Statement is based.

9.8 Conclusions

Completed response actions at the Site satisfy performance standards for Response Action Outcomes under 310 CMR 40.1004. Results of this work indicate that a Class A-3 RAO Statement is appropriate. Based on the site characterization activities, completed response actions, and the conclusions of the Risk Characterization, which show a condition of "No Significant Risk" has been achieved at the Disposal Site under existing conditions, and foreseeable future conditions through the implementation of AULs, a Class A-3 RAO has been determined to be appropriate for the Disposal Site.

The Class A-3 RAO indicates the following:

- The nature and extent of contamination at the Site has been determined using data of sufficient quality to allow the LSP Opinion to be rendered;
- Response actions at the Site have not results in the reduction of the level of OHM and asbestos in soil in all areas of the Site to below background levels. However, response actions have reduced concentrations of OHM at the Site to below UCLs;
- A condition of "No Significant Risk" exists at the Site under current and foreseeable future conditions as a result of assessment activities and response actions;
- Three AULs have been recorded with the Middlesex South District County Registry of Deeds and/or Middlesex South Registry District of the Land Court. Two of the AULs address the Disposal Site and the third AUL is associated with the Lehigh/Babos portion of the W.R. Grace property that is not part of the Disposal Site. The AULs are used to manage potential exposures to soil, dust, and odors assumed to represent potential future risks. The permitted uses are consistent with the current and reasonably foreseeable uses of the Site (i.e., use of existing buildings for office, industrial, retail, commercial, and research and development (R&D)). Furthermore, identification in the AUL of activities and uses inconsistent with the AUL Opinion and the Obligations and Conditions set forth in the AUL Opinion provide a means for maintaining the assumptions of the risk assessment which rely upon elimination of certain exposure pathways to achieve a level of "No Significant Risk" and is a requirement of applicable DEP criteria. With the implementation of the AUL, a condition of "No Significant Risk" has been obtained.
- Additional Response Actions are not necessary; and
- A Permanent Solution has been achieved.

10. LSP OPINION

William W. Beck, Jr. is the LSP of Record for the project. The required LSP Opinion, seal and signature are provided in Block F of the BWSC-104 Response Action Outcome Statement, the original of which is submitted to the MADEP with this document. A copy of form BWSC-104 is included as Appendix A.

This LSP Opinion is rendered having undertaken a review of the work completed by Wesley E. Stimpson, the prior LSP, and having concluded that the work is suitable for use in supporting this RAO Opinion.

To the best of the LSP's knowledge, information and belief, it is the LSP's opinion that the response actions that are the subject of this submittal (i) have been developed and implemented in accordance with the applicable provisions of M.G.L.c.21E and 310 CMR 40.0000, (ii) are appropriate and reasonable to accomplish the purposes of such response actions as set forth in the applicable provisions of M.G.L.c.21E and 310 CMR 40.0000 and (iii) comply with the identified provisions of all orders, permits, and approvals identified in this submittal.

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3. Haley & Aldrich, Inc., 1988. "Environmental Data Report for the W.R. Grace &Co. Property in Cambridge, Massachusetts" April 1988.

4. Haley & Aldrich, Inc., 1998. "Asbestos Soil Sampling Program Results, W.R. Grace & Co.-Conn., Cambridge, Massachusetts" 17 June 1998.

5. Haley & Aldrich, Inc., 1998. "Final Asbestos Sampling Plan, W.R. Grace & Co.-Conn., Cambridge, Massachusetts" 18 November 1998.

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7. Haley & Aldrich, Inc., 1999. "Preliminary Data Report, Asbestos Sampling Program, W.R. Grace & Co.-Conn., Cambridge, Massachusetts" 21 January 1999.

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14. Haley & Aldrich, Inc. 2003. "Enhanced In-Situ Bioremediation Release Abatement Measure (RAM) Completion Report, W.R. Grace & Co. - Conn., 62 Whittemore Ave, Cambridge, Massachusetts, DEP RTN 3-0277," prepared by Haley & Aldrich, Inc., dated 21 April 2003.

15. Haley & Aldrich, Inc., 2004. "Phase II Comprehensive Site Assessment for the Presence of Asbestos, W.R. Grace & Co. - Conn., Cambridge, Massachusetts, DEP RTN 3-0277," prepared by Haley & Aldrich, Inc., dated 6 January 2004.

16. Lisa Bailey, Miriam Weil, and Deborah Murray, Menzie Cura & Associates, 2004. "Review of Risk Assessment Methods to Demonstrate Potential Risk from Exposure to Asbestos in Soil" presented in a Poster Session at the 2004 University of Massachusetts, Annual Conference on Soils, Sediments and Water.

TABLE I
SUMMARY O F HISTORIC BUILDING USE
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

Building No.	Building Use	Years	Potential Contaminants
1	Constructed	1919	Solvents, Napthalene, Formaldehyde, Latex Solvents*
	Solvent room, factory	1929,1930	
	Paste boiling	1961	
	Latex can sealant manufacture	Prior to 1940-1974	
	Maintenance/Shipping & Receiving	1987	
2	Constructed	1919	Oil, solvents, Naphthalene, Formaldehyde, Latex Solvents*
	Office, laboratory, Machine shop	1929	
	Small batch laboratory	1930	
	Offices, storage	1961	
	Latex can sealant manufacture, research and development office	1970	
	Medical room, credit union, machine design, small batch lab	1978,1979	
	Medical room, machine design	1984	
3	Constructed	1919	Solvents, Napthalene, Formaldehyde, Latex Solvents*
	Cooper	1929	
	Filter house	1961	
	Latex can sealant manufacture	1967-1972	
	Latex cap compound sealant manufacture	Stopped mid 1970s	
	Boiler room/Research & Development/Record Shop	1987	
4	Constructed	By 1929	Zinc, Solvents, Naphthalene, Formaldehyde, Latex Solvents*
	Flux Manufacture	1929	
	Zinc Chloride	1961	
	Latex can sealant manufacture	1970	
	Section razed	1980	
5	Constructed	By 1929	Solvents, Napthalene, Formaldehyde, Latex Solvents*
	Raw materials warehouse & receiving	1929	
	Union Office	1941-1984	
	Storage	1976-1984	
	Demolition	1984	
6	Constructed	By 1929	Zinc
	Flux Manufacture	1929	
	Quality control lab	1961	
	Quality control lab	1979	
	Demolition	1980	
7	Constructed	By 1929	Any chemical
	Storehouse & shipping & receiving	1946	
	Addition construction	1946	
	Maintenance, chemical, storage, electrical shop	1961	
	Demolition	1984	
8	Constructed	By 1929	Oil, Solvents
	Accounting Dept.	1929-1960	
	Machine shop, office	1929	
	Machine shop, factory, kitchen	1961	
	Machine shop research lab, research library, patent library	1978,1979	
9	Constructed	By 1929	Solvents
	Manufacturing (shoe adhesives)	1929-1970	
	Section razed	1980	
	Demolition	1984	
10	Constructed	By 1929	(See building use)
	Cafeteria	1929-1944	
	Lockers	1929,1961,1970	
	Men's locker building	1978,1979,1984	
	Demolition	1984	

TABLE I
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W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

Building No.	Building Use	Years	Potential Contaminants
11	Constructed	By 1929	Any chemical, Asbestos
	Manufacturing	1929	
	Warehouse	1961	
	Section razed	1980	
	Warehouse	1983	
	Demolition	1984	
12	Constructed	By 1929	Solvents, Napthalene, Formaldehyde, Latex Solvents*, Asbestos
	Solvent building	1929	
	Manufacture of solvent-based jar sealing compound	Before 1946	
	Manufacture of air-entraining agents for concrete, a silicone masonry sealant, and a dispersant	After 1946	
	Chemical tank chums	1961	
	Construction, chemical manufacturing	1979	
	Demolition	1984	
13	Constructed	By 1929	Oil
	Power house	1929	
	Boiler house	1961,1970	
	Boiler room	1978,1979	
	Section razed	1980	
	Demolition	1984	
14	Constructed	By 1930	Zinc
	Tank house	1961	
	Flux manufacture	1979	
	Demolition	1980	
15	Constructed	By 1930	Solvents, Napthalene, Formaldehyde, Latex Solvents*
	Warehouse, manufacture of latex balloons and latex copolymers	1961	
	Sodasorb packaging	1965-1977	
	Mill room, storage of potasslum and sodium hydroxides in tanks	1979	
	Demolition	1980-1981	
16	Constructed	By 1930	Solvents
	Dispersant manufacture	1961	
	Manufacture of TDA (a dispersant)	Until 1970-1971	
	Demolition	1980	
17	Constructed	By 1937	None
	Storage	1961	
	Equipment storage	1978,1979	
	Demolition	1982	
18	Dwelling	1930	None
	Dwelling razed	1936	
	Construction	1936	
	Office building/laboratory	1936	
	Building extension	1947	
	Office	1961	
	Research and development offices	1978,1979	
	General offices	1984	
19	Constructed	1945	None
	Pumphouse	1945	
	Office	1961	
	Fire pumphouse	1978,1979,1984	
20	Constructed	Between 1930 & 1944	Lime, Calcium lignosulfonate
	Manufacture	1961	
	Sodasorb manufacture	1970	
	Soda-lime manufacture	1979	
	Demolition	1984	

TABLE I
SUMMARY O F HISTORIC BUILDING USE
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

Building No.	Building Use	Years	Potential Contaminants
21	Constructed	Between 1930 & 1944	Solvents, Oil
	Shop	1961	
	Freezer laboratory	1978,1979,1984	
	Demolition	1984	
22	Sach & Door Company	1937	No operation invovling large quantities of chemicals took place in this building.
	Storage and temporary lab	1942	
	Cry-O-Vac shipping & receiving	1950-1956	
	Inspection	1961	
	Latex weather ballon storage	1970	
	Print Shop (basement)	1980	
	General offices (personal)	1984	
23	Sash & Door Company	1937	No operation invovling large quantities of chemicals took place in this building.
	Storage and temporary lab	1942	
	Inspection	1961	
	Balloon assembly/plant office	1970	
	General offices	1984	
24	Constructed	Between 1930 & 1944	No operation invovling large quantities of chemicals took place in this building.
	Laboratory	1961	
	Pilot fiber lab for paper making	1963	
	Research & Development offices	1970	
	Pilot fiber lab for paper making	1978,1979	
	Paper mill, monorote lab, quality control laboratory, polycell laboratory, analytical laboratory	1983	
	Pilot fiber lab for paper making	1984	
25	Constructed	Between 1930 & 1944	Solvents, Naphthalene
	Painting & storage (drum)	1944-1961	
	Drum reconditioning plant	1941-1961	
	Demolition	1980	
26	Constructed	1942	Solvents, Naphthalene, Formaldehyde, Latex Solvents*
	Synthetic ruber manufacture	1942-1961	
	Organic chemical manufature	1979	
	Demolition	1980	
27	Constructed	Between 1930 & 1944	Any chemical
	Chemical building	1961	
	DAXAD manufacture	1970	
	Organic chemical manufature	1978,1979	
	Demolition	1984	
29	Constructed	1944	No operation invovling large quantities of chemicals took place in this building.
	Latex weather ballon manufacture and laboratory	1961	
	Latex weather ballon manufacture	1970	
	Can sealing lab	1960-1975	
	Ballon plant, sodasorb packaging, battery separation laboratory, cafeteria	1978,1979	
	Concrete laboratory, cafeteria	1983	
30	Constructed	1947	Solvents
	Laboratory	1961	
	Solvent storage	1979,1984	
31	Constructed	1944	Solvents, Naphthalene
	Incinerator	1961	
	Demolition	1980	
32	Constructed	1956	Any chemical
	Organic chemical pilot lab	1957	
	Pilot laboratory	1961	
	Research & Development offices	1970,1978,1979	
	Pilot chemical laboratory	1983,1984	
	Demolition	1984	
33	Constructed	Between 1944 & 1961	Any chemical
	General Storage	1961	
	DAXAD storage	1970	
	Organic chemical warehouse, offices	1979	
	Demolition	1983	

TABLE I
SUMMARY O F HISTORIC BUILDING USE
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

Building No.	Building Use	Years	Potential Contaminants
34	Constructed Chemical shed Pilot lab for battery seperation research & development offices Demolished	Between 1944 & 1961 1961 1978,1979,1984 1984	Any chemical, especially heay metals
35	Constructed General storage DAXAD storage Organic chemical warehouse Demolition	Between 1944 & 1961 1961 1970 1979 1983	Any chemical
36	Constructed Sand shed 12,000 gallon naphthalene storage tank Demolition	Between 1944 & 1961 1961 1979 1983	Naphthalene
37	Constructed General storage Storage, maintenance shop Demolition	Between 1944 & 1961 1961 1979 1983	Any chemical
38	Constructed Warehouse DAXAD storage Warehouse Demolition	Between 1944 & 1961 1961 1970 1979 1983	Any chemical
39	Constructed Pumphouse Demolition	Between 1944 & 1961 1961,1979 1984	(See building use)
40	Constructed General Storage Paint storage Demolition	1956 1961 1979 1980	Solvents
41	Constructed Storage Demolition	1948 1979 1984	No chemicals used in this building
42	Constructed Electrical cell house	Between 1944 & 1979 1979,1984	Metals
43	Constructed Sprinkler valve house Demolition	Between 1944 & 1979 1979,1984 1984	No chemicals used in this building
44	Constructed Guardhouse	1959 1979,1984	No chemicals used in this building
45	Constructed Guardhouse	Between 1961 & 1978 1979,1984	No chemicals used in this building
46	Constructed Guardhouse Demolition	Between 1961 & 1978 1978,1979 1984	No chemicals used in this building

TABLE II
SUMMARY OF HISTORIC STORAGE TANKS
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

No. of Tanks	Tank Description	Location	Approximate Removal Date	Potential Contaminats
Underground Storage Tanks				
1	Acetone (10,000)	Former Bldg. 40	1983	Acetone
1	White Oil (10,000 gal)	Former Bldg. 40, adjacent to tank 28	1983	Petroleum products
1	Toluene / Naptha (10,000 gal)	NW Corner Former Bldg. 8	1984 (filled with Sand)	Naphtha, Toluene
1	Methanol (10,000)	Former Bldg. 7	1984	
1	No. 4 / No. 6 Fuel Oil (20,000 gal)	Former Bldg. 43	1999	Petroleum products
2	Fuel Oil (2,800 gal)	South of Former Bldg. 13	1984	Petroleum products
1	Light Oil (1,000 gal)	South of Former Bldg. 13, Parallel to 6 & 7	Mid-1980s	Petroleum products
1	WRDA (Daxad)	Former Bldg. 16	1983	Naphthalene
1	Alcohol / 2-Butanone (6,000 gal)	SE. of Former Bldg. 16	1987	No known loss from tank. Alcohol is not of concern for risk assesment.
3	No. 2 Oil / Calium Lignosulfate (10,000 gal)	Near Former Bldg. 16	1983	No. 2 Fuel Oil, Calcium lignosulfonate
1	Diesel Fuel / gasoline (1,000)	NE Corner Former Bldg. 17	1983	Diesel Fuel Gasoline
Aboveground Storage Tanks				
1	Settling Tank from Bldg. 25 Drum Recon.	North of western end of former Bldg. 7	Mid-1980s	Volatile Organics
1	Naphthalene (18,000 gal)	South-side former Bldg. 36	Mid-1980s	Naphthalene
1	Nitrogen Tank	West of former Bldg. 34	Mid-1980s	Tank contents not of concern for risk assessment.
1	Fuel Oil (54,000 gal)	South of former Bldg. 35, East of former Bldg. 36	Mid-1980s	Petroleum products
1	Soap	North of former Bldg. 31	Mid-1980s	
1	Fatty Acid	North of former Bldg. 31	Mid-1980s	
1	Fuel Oil (10,000 gal)	North of former Bldg. 31	Mid-1980s	Petroleum products
2	Latex	Former Bldg 29	Mid-1980s	
1	Sodium Hydroxide (9,900 gal)	Former Bldg. 27	Mid-1980s	
1	Potassium Hydroxide (9,900 gal)	Former Bldg. 27	Mid-1980s	
2	Sulfuric Acid Tanks (~9,000 gal)	Former Bldg. 27	Mid-1980s	Acidic Groundwater
1	Formaldehyde Tank (12,550 gal)	Former Bldg. 27	Mid-1980s	Formaldehyde
2	Vinyl Acetate Flash Tanks	NW Corner of former Bldg. 26	Mid-1980s	Vinyl Acetate
2	Latex	Former Bldg. 22	Mid-1980s	
1	Fuel Oil (10,000 gal)	East end of former Bldg. 16	Mid-1980s	Petroleum Hydrocarbons
1	Muriatic Acid Tank	Former Bldg. 16	Mid-1980s	Acidic Groundwater
1	Propane	West of former Bldg 15	Mid-1980s	
1	Caustic Tank	Former Bldg. 15	Mid-1980s	Basic Groundwater
2	Fatty Acid (10,000 & 15,000 gal)	East of former Bldg. 12	Mid-1980s	
2	Latex (10,000 gal)	Former Bldg. 11	Mid-1980s	
5	Latex / WRDA	former Bldg. 7	Mid-1980s	
4	Latex (10,000 gal)	former Bldg. 7	Mid-1980s	
1	Zinc Chloride Tank	Former Bldg. 6	Mid-1980s	Zinc
Tank Farm (up to 15)	Styrene, Butadiene, Acetone, Vinyl Acetate, Methyl Acetate, Methanol, Dibutyl Maleate, Isobutyl Ether, Hexylene Glycol (3,000 to 18,000 gallons)	East of Parkway Pond	Mid-1980s	Solvents, Naphthalene

TABLE III
SUMMARY OF CHEMICAL ANALYSES
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

Analysis	Method	No. of Soil Samples	No. of Groundwater Samples	No. of Surface Water Samples	No. of Sediment Samples	No. of Ambient Air Samples
Volatile Organic Compounds						
1988 Environmental Data Report	624 and/or 8240	129	-	-	9	-
1985-2003 Long Term GW Monitoring	8240	-	143	66	9	-
(some analyses also included Butadiene, Methyl Acrylate, Di-n-Butyl Maleate, Vinyl Acetate, Methyl Acetate, Isobiyl Ether, Hexylene Glycol)						
Acid-Base-Neutral Extractables						
1988 Environmental Data Report	8250 and/or 8270	122	-	-	-	-
1985-2003 Long Term GW Monitoring		-	81	24	9	-
Naphthalene						
1990-2003 Long Term GW Monitoring	8240	-	59	38	9	-
Napthalene, 2-Butanone, 4-Methyl-2-Pentanone, Xylenes						
1988 Environmental Data Report	624	5	-	-	-	-
Formaldehyde						
1988 Environmental Data Report	PCAM 125	100	-	-	-	-
1985-2003 Long Term GW Monitoring		-	47	4	-	-
Phenolics					-	-
1988 Environmental Data Report	510C	104				
1985-2003 Long Term GW Monitoring			51	4		
Cyanide						
1988 Environmental Data Report	412D	104	-	-	-	-
1985-2003 Long Term GW Monitoring		-	51	4	-	-
Total Metals						
1988 Environmental Data Report	6010 & 7060 & 7040	115	-	-	9	-
1985-2003 Long Term GW Monitoring		-	52	4	-	-
Pesticides/PCBs						
1988 Environmental Data Report	Method 8082/8081	111	-	-	-	-
Petroleum by Oil & Grease						
1988 Environmental Data Report	503C&A	88	-	-	8	-
Total Petroleum Hydrocarbons						
1995 Supplement Petroleum Evaluation	Modified 8015	165	-	-	-	-
Extractable Petroleum Hydrocarbons						
1999 EPH/VPH Program	MADEP Method	32	-	-	-	-
2001-2002 BioRAM		25	12	-	-	-
EPH Target Analytes (PAHs)						
1999 EPH/VPH Program	MADEP Method	32	-	-	-	
2001-2002 BioRAM		25	-	-	-	-
Volatile Petroleum Hydrocarbons						
1999 EPH/VPH Program	MADEP Method	32	-	-	-	-
VPH Target Analytes (VOCs)						
1999 EPH/VPH Program	MADEP Method	32	-	-	-	-
Asbestos - 1998-2003	Region 1 Protocol - PLM	857	-	-	10	
	TEM	49	-	-	-	21
	PCM	-	-	-	-	20
	EPA Drinking Water (100.1)	-	8	4	-	-
DUST - 1987						
Total suspended particulates (TSP) and Lead	EPA High Vol Ref. method	-	-	-	-	104
formaldehyde	NIOSH 3500	-	-	-	-	106
acetone, benzene, naphthalene, PAHs	Mod. NIOSH 1501/NIOSH 1515	-	-	-	-	109

Notes:
Sample numbers are approximate and include field duplicate sample analysis.
"-" Compound not analysed for in particular media.

TABLE IV
SUMMARY OF OHM SOIL QUALITY DATA - 1984 to 1988
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

SAMPLE DESIGNATION SAMPLING DATE SAMPLE DEPTH (FT.) EXPLORATION TYPE SOIL TYPE	MCP Method 1 S1 Standards	SIT2 TP1 S2 11/13/1986 3 TEST PIT FILL	SIT2 TP3 S1 11/13/1986 3 TEST PIT FILL	SIT2 TP5 S3 11/13/1986 8 TEST PIT PEAT	SIT2 TP7 S2 11/14/1986 6 TEST PIT FILL	SIT2 TP9 S1 11/14/1986 1.5 TEST PIT FILL	SIT2 TP101 S1 11/14/1986 1.5 SIT2 TP9 S1 DUPLICATE	SIT2 TP12 S3 11/14/1986 12 TEST PIT SAND	SIT2 TP13 S1 11/14/1986 2.5-3 TEST PIT FILL	SIT2 TP14 S1 11/14/1986 3.5 TEST PIT FILL
VOCs (ug/kg)										
Acetone	500000	*390 A*	*86 A*	*170 A*	*A 140*	*130 A*	*170 A*	ND(56)	NO(130)	ND(87)
Benzene	40000	ND(3.4)	ND(3)	ND(3.4)	ND(3.3)	ND(3.3)	ND(3.4)	ND(2.2)	ND(5)	ND(3.5)
Bromodichloromethane	20000	ND(3.4)	ND(3)	ND(3.4)	ND(3.3)	ND(3.3)	ND(3.4)	ND(2.2)	ND(5)	ND(3.5)
2-Butanone	500000	ND(17)	ND(15)	ND(17)	ND(17)	ND(16)	ND(17)	ND(11)	ND(25)	ND(17)
Carbon Disulfide	NA	ND(3.4)	ND(3)	ND(3.4)	ND(3.3)	ND(3.3)	ND(3.4)	ND(2.2)	180	ND(3.5)
Carbon Tetrachloride	7000	ND(3.4)	ND(3)	ND(3.4)	ND(3.3)	ND(3.3)	ND(3.4)	ND(2.2)	ND(5)	ND(3.5)
Chlorobenzene	500000	ND(3.4)	ND(3)	ND(3.4)	ND(3.3)	ND(3.3)	ND(3.4)	ND(2.2)	ND(5)	ND(3.5)
Chloroform	200000	ND(3.4)	ND(3)	ND(3.4)	ND(3.3)	ND(3.3)	ND(3.4)	ND(2.2)	ND(5)	ND(3.5)
Chloromethane	NA	ND(8.4)	ND(7.5)	ND(8.5)	ND(8.4)	ND(8.2)	ND(8.6)	ND(5.6)	ND(13)	ND(8.7)
1,1-Dichloroethane	100000	ND(3.4)	ND(3)	ND(3.4)	ND(3.3)	ND(3.3)	ND(3.4)	ND(2.2)	ND(5)	ND(3.5)
1,2-Dichloroethane	10000	ND(3.4)	ND(3)	ND(3.4)	ND(3.3)	ND(3.3)	ND(3.4)	ND(2.2)	ND(5)	ND(3.5)
1,1-Dichloroethylene	2000	ND(3.4)	ND(3)	ND(3.4)	ND(3.3)	ND(3.3)	ND(3.4)	ND(2.2)	ND(5)	ND(3.5)
1,2-Dichloroethylene	NA	-	-	-	-	-	-	-	-	-
Trans-1,2-Dichloroethylene	500000	ND(3.4)	ND(3)	ND(3.4)	ND(3.3)	ND(3.3)	ND(3.4)	ND(2.2)	ND(5)	ND(3.5)
1,2-Dichloropropane	8000	ND(3.4)	ND(3)	ND(3.4)	ND(3.3)	ND(3.3)	ND(3.4)	ND(2.2)	ND(5)	ND(3.5)
Ethylbenzene	500000	ND(3.4)	ND(3)	ND(3.4)	ND(3.3)	ND(3.3)	ND(3.4)	ND(2.2)	ND(5)	ND(3.5)
2-Hexanone	NA	ND(17)	ND(15)	ND(17)	ND(17)	ND(16)	ND(17)	ND(11)	ND(25)	ND(17)
Methylene Chloride	100000	*47 A*	*38 A*	*43 A*	*63 A*	*160 A*	*120 A*	*12 A*	*76 A*	*84 A*
4-methyl-2-Pentanone	500	ND(17)	ND(15)	ND(17)	ND(17)	ND(16)	ND(17)	ND(11)	ND(25)	ND(17)
2,2-Oxybis propane	NA	-	-	-	-	-	-	-	-	-
Styrene	20000	ND(3.4)	ND(3)	ND(3.4)	ND(3.3)	ND(3.3)	ND(3.4)	ND(2.2)	ND(5)	ND(3.5)
Tetrachloroethylene	20000	ND(3.4)	ND(3)	ND(3.4)	ND(3.3)	ND(3.3)	ND(3.4)	ND(2.2)	ND(5)	ND(3.5)
1,1,1-Trichloroethane	100000	ND(3.4)	ND(3)	ND(3.4)	ND(3.3)	ND(3.3)	ND(3.4)	ND(2.2)	NO(5)	ND(3.5)
Toluene	500000	ND(3.4)	ND(3)	ND(3.4)	*TR (2) A*	ND(3.3)	ND(3.4)	ND(2.2)	ND(5)	ND(3.5)
Trichloroethylene	70000	ND(3.4)	ND(3)	ND(3.4)	ND(3.3)	ND(3.3)	ND(3.4)	ND(2.2)	ND(5)	ND(3.5)
Vinyl Acetate	NA	ND(17)	ND(15)	ND(17)	ND(17)	ND(16)	ND(17)	ND(11)	ND(25)	ND(17)
Xylenes, mixture	500000	ND(3.4)	ND(3)	ND(3.4)	ND(3.3)	ND(3.3)	ND(3.4)	ND(2.2)	ND(5)	ND(3.5)

SAMPLE DESIGNATION SAMPLING DATE SAMPLE DEPTH (FT.) EXPLORATION TYPE SOIL TYPE	MCP Method 1 S1 Standards	SIT2 TP1 S2 11/13/1986 3 TEST PIT FILL	SIT2 TP3 S1 11/13/1986 3 TEST PIT FILL	SIT2 TP5 S3 11/13/1986 8 TEST PIT PEAT	SIT2 TP7 S2 11/14/1986 6 TEST PIT FILL	SIT2 TP9 S1 11/14/1986 1.5 TEST PIT FILL	SIT2 TP101 S1 11/14/1986 1.5 SIT2 TP9 S1 DUPLICATE	SIT2 TP12 S3 11/14/1986 12 TEST PIT SAND	SIT2 TP13 S1 11/14/1986 2.5-3 TEST PIT FILL	SIT2 TP14 S1 11/14/1986 3.5 TEST PIT FILL
ABNs (ug/kg)										
Acenaphthene	1000000	ND(460)	ND(560)	ND(1000)	TR (370)	ND(430)	TR(650)	NO(470)	ND(2900)	ND(380)
Acenaphthylene	100000	ND(460)	ND(560)	ND(1000)	ND(370)	ND(430)	ND(650)	ND(470)	ND(2900)	ND(380)
Anthracene	1000000	ND(460)	TR (560)	TR (1000)	TR(370)	TR(430)	TR(650)	ND(470)	TR(2900)	TR(380)
Benzo(a)anthracene	700	TR (460)	TR (560)	TR (1000)	640	TR(430)	2600	ND(470)	ND(2900)	380
Benzo(a)pyrene	700	TR (460)	TR (560)	TR (1000)	490	TR(430)	2800	ND(470)	ND(2900)	TR(380)
Benzo(b,k)fluoranthene	NA	TR (460)	720	TR (1000)	480	TR(430)	430	ND(470)	ND(2900)	480
Benzo(g,h,i)perylene	1000000	TR (460)	TR (560)	TR (1000)	TR(370)	TR(430)	230	ND(470)	ND(2900)	TR(380)
Bis(2-ethylhexyl)phthalate	200000	-	ND(560)	2400	980	ND(430)	ND(650)	-	ND(2900)	ND(380)
Butylbenzylphthalate	NA	ND(460)	ND(560)	ND(1000)	ND(370)	ND(430)	ND(650)	ND(470)	ND(2900)	ND(380)
p-Chloro-m-cresol	NA	ND(460)	ND(560)	ND(1000)	ND(370)	ND(430)	ND(650)	ND(470)	ND(2900)	ND(380)
2-Chlorophenol	100000	ND(460)	ND(560)	ND(1000)	ND(370)	ND(430)	ND(650)	ND(470)	ND(2900)	ND(380)
Chrysene	7000	TR (460)	TR (560)	TR (1000)	510	TR(430)	200	ND(470)	ND(2900)	TR(380)
Dibenzo(a,h)anthracene	700	ND(460)	ND(560)	ND(1000)	TR(370)	TR(430)	680	ND(470)	ND(2900)	TR(380)
1,2-Dichlorobenzene	100000	ND(460)	ND(560)	ND(1000)	ND(370)	ND(430)	ND(650)	ND(470)	ND(2900)	ND(380)
1,4-Dichlorobenzene	40000	ND(460)	ND(560)	ND(1000)	ND(370)	ND(430)	ND(650)	ND(470)	ND(2900)	ND(380)
Diethylphthalate	1000000	ND(460)	ND(560)	ND(1000)	ND(370)	ND(430)	ND(650)	ND(470)	ND(2900)	ND(380)
2,4-Dimethylphenol	400000	ND(460)	ND(560)	ND(1000)	ND(370)	ND(430)	ND(650)	ND(470)	ND(2900)	ND(380)
Dimethylphthalate	1000000	ND(460)	ND(560)	ND(1000)	ND(370)	ND(430)	ND(650)	ND(470)	ND(2900)	ND(380)
Di-n-butyl phthalate	NA	ND(460)	ND(560)	ND(1000)	ND(370)	ND(430)	ND(650)	ND(470)	ND(2900)	ND(380)
Di-n-octyl phthalate	NA	ND(460)	ND(560)	ND(1000)	ND(370)	ND(430)	ND(650)	ND(470)	ND(2900)	ND(380)
2,4-Dinitrophenol	40000	ND(460)	ND(560)	ND(1000)	ND(370)	ND(430)	ND(650)	ND(470)	ND(2900)	ND(380)
2,4-Dinitrotoluene	1000	ND(460)	ND(560)	ND(1000)	ND(370)	ND(430)	ND(650)	ND(470)	ND(2900)	ND(380)
Fluoranthene	1000000	TR (460)	TR (560)	TR (1000)	1100	740	3500	ND(470)	ND(2900)	710
Fluorene	1000000	ND(460)	ND(560)	ND(1000)	TR (370)	ND(430)	TR(650)	ND(470)	ND(2900)	TR(380)
Indeno(1,2,3-cd)pyrene	700	TR (460)	TR (560)	TR (1000)	TR (370)	TR(430)	2300	ND(470)	ND(2900)	TR(380)
Isophorone	NA	ND(460)	ND(560)	ND(1000)	ND(370)	ND(430)	ND(650)	ND(470)	ND(2900)	ND(380)
Naphthalene	100000	ND(460)	ND(560)	TR (1000)	TR(370)	ND(430)	TR(650)	ND(470)	TR(2900)	TR(380)
Nitrobenzene	NA	ND(460)	ND(560)	ND(1000)	ND(370)	ND(430)	ND(650)	ND(470)	ND(2900)	ND(380)
n-Nitrosodi-n-propylamine	NA	ND(460)	ND(560)	ND(1000)	ND(370)	ND(430)	ND(650)	ND(470)	ND(2900)	ND(380)
n-Nitrosodiphenylamine	NA	-	-	-	-	ND(430)	-	-	-	-
Pentachlorophenol	7000	ND(460)	ND(560)	ND(1000)	ND(370)	ND(430)	ND(650)	ND(470)	ND(2900)	TR(380)
Phenanthrene	1000000	TR (460)	TR (560)	TR (1000)	1000	440	2400	ND(470)	TR(2900)	420
Phenol	500000	ND(460)	ND(560)	TR (1000)	ND(370)	ND(430)	TR(650)	ND(470)	ND(2900)	ND(380)
Pyrene	700000	TR (460)	TR (560)	TR (1000)	880	640	3400	ND(470)	ND(2900)	520
1,2,4-Trichlorobenzene	400000	ND(460)	ND(560)	ND(1000)	ND(370)	ND(430)	ND(650)	ND(470)	ND(2900)	ND(380)

SAMPLE DESIGNATION SAMPLING DATE SAMPLE DEPTH (FT.) EXPLORATION TYPE SOIL TYPE	MCP Method 1 S1 Standards	SIT2 TP1 S2 11/13/1986 3 TEST PIT FILL	SIT2 TP3 S1 11/13/1986 3 TEST PIT FILL	SIT2 TP5 S3 11/13/1986 8 TEST PIT PEAT	SIT2 TP7 S2 11/14/1986 6 TEST PIT FILL	SIT2 TP9 S1 11/14/1986 1.5 TEST PIT FILL	SIT2 TP101 S1 11/14/1986 1.5 SIT2 TP9 S1 DUPLICATE	SIT2 TP12 S3 11/14/1986 12 TEST PIT SAND	SIT2 TP13 S1 11/14/1986 2.5-3 TEST PIT FILL	SIT2 TP14 S1 11/14/1986 3.5 TEST PIT FILL
TOTAL METALS (mg/kg)										
Antimony	10	ND(1.2)	ND(1.1)	ND(2.8)	ND(1.2)	ND(1)	ND(0.99)	ND(1.1)	ND(1.8)	3.9
Arsenic	30	2.8	3.7	ND(2)	3.5	3.9	2.6	2.1	ND(1.9)	8.6
Barium	1000	-	-	-	-	-	-	-	-	-
Beryllium	0.7	0.26	0.29	0.89	0.29	0.18	0.17	0.17	ND(0.18)	0.29
Cadmium	30	ND(0.25)	ND(0.21)	1.5	ND(0.24)	0.63	0.58	ND(0.22)	2	25
Chromium	1000	9.8	12	3.9	12	9.3	14	7	170	16
Copper	NA	15	19	16	33	20	17	10	11	45
Iron	NA	-	-	-	-	-	-	-	-	-
Lead	300	44	350	15	110	140	150	4.9	70	570
Mercury	20	0.031	0.46	0.1	0.19	0.26	0.22	ND(0.02)	0.3	2.47
Nickel	300	11	8.6	3.9	12	17	22	6.5	640	16
Selenium	400	ND(0.88)	ND(0.89)	ND(2)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Silver	100	ND(0.25)	ND(0.21)	ND(0.56)	ND(0.24)	ND(0.21)	ND(0.2)	ND(0.22)	ND(0.37)	0.29
Thallium	8	ND(0.88)	ND(0.89)	ND(2)	ND(1.3)	ND(0.96)	ND(0.92)	ND(0.86)	ND(1.9)	ND(1.1)
Zinc	2500	120	580	990	139	1536	1750	46	11975	2800
EP TOXICITY		PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
OIL & GREASE (mg/kg)	NA	364	451	9720	1580	1200	2590	977	18700	923
PETROLEUM HYDROCARBON IDENTIFICATION (mg/kg)										
Quantity	NA	2.7	2.3	89	51	320	130	ND	36	51
Type	NA	ND	ND	FUEL OIL	LUBRICATING OIL	LUBRICATING OIL WITH COAL TAR MIXTURE	LUBRICATING OIL WITH COAL TAR MIXTURE	ND	LUBRICATING OIL	LUBRICATING OIL
WASTE CHARACTERISTICS										
Total Cyanide (mg/kg)	NA	ND(0.2)	ND(0.31)	ND(0.45)	ND(0.27)	0.7	0.7	ND(0.24)	ND(0.63)	ND(0.29)
Total Phenolics (mg/kg)	NA	ND(0.12)	0.2	ND(0.18)	ND(0.12)	ND(0.12)	ND(0.12)	0.2	ND(0.31)	0.4
Formaldehyde (mg/kg)	NA	0.3	0.5	1.3	0.8	1.1	1	ND(0.2)	ND(0.2)	ND(0.2)
Sulfate (mg/kg)	NA	-	-	-	-	-	-	-	-	-
Corrosivity (pH)	NA	-	-	-	-	-	-	-	-	-
Specific Conductance (ushos/cm)	NA	-	-	-	-	-	-	-	-	-
Biological Oxygen Demand (mg/kg)	NA	-	-	-	-	-	-	-	-	-
Total Suspended Solids (mg/kg)	NA	-	-	-	-	-	-	-	-	-
Chloride (mg/kg)	NA	-	-	-	-	-	-	-	-	-

ABBREVIATIONS:

- - : Not analyzed; or invalid data as determined by the validation process.
ND: Compound not detected, detection limit not available.
TR: Compound detected below laboratory reporting limit; detection limit not available.
ND(2.5): Not detected; number in parentheses is equal to the laboratory Reporting Limit
A 54: Concentration is Approximate as determined by validation process.
TR (460): Trace Concentration. Compound detected at concentrations below the reporting limit; number in parentheses is equal to the laboratory reporting limit, detection limit.
PASS: Extracted metals not detected or detected below toxic levels.
VOCs: Volatile Organic Compounds
ABNs: Acid/Base/Neutral Extractables

NOTES:

1. This table includes only those compounds detected on the dates indicated.
2. " * " Indicates trans 1,2-Dichlorothene and cis 1,2-dichloroethene grouped and reported as 1,2-Dichlorothene
3. " * " Indicates possible contribution from ERCO matrix spiking solution.

TABLE IV
SUMMARY OF OHM SOIL QUALITY DATA - 1984 to 1988
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

SAMPLE DESIGNATION	SIT2 TP17 S2	SIT2 TP18 S1	SIT2 TP19 S3	SIT2 TP102 S3	SIT3 TP1 S1	SIT3 TP5 S1	SIT3 TP6 S1	SIT3 TP10 S2	SIT3 TP12 S1	SIT3 TP14 S3
SAMPLING DATE	11/17/1986	11/17/1986	11/17/1986	11/17/1986	11/19/1986	11/19/1986	11/19/1986	11/18/1986	11/17/1986	11/18/1986
SAMPLE DEPTH (FT.)	7	1.5	9	9	1.5	0.5	1.5	37747	1.5-2.5	37810
EXPLORATION TYPE	TEST PIT	TEST PIT	TEST PIT	SIT2 TP19 S3	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT
SOIL TYPE	LOAM	FILL	SAND	DUPLICATE	FILL	FILL	FILL	FILL	FILL	PEAT
VOCs (ug/kg)										
Acetone	ND(1200)	*310 A*	ND(120)	ND(120)	ND(120)	ND(50)	ND(85)	ND(170)	ND(250)	ND(1300)
Benzene	ND(50)	ND(5)	ND(5)	ND(5)	ND(4.6)	ND(3)	ND(2.6)	ND(7)	*10 A*	*72 A*
Bromodichloromethane	ND(50)	ND(5)	ND(5)	ND(5)	ND(4.6)	ND(7.5)	ND(2.6)	ND(7)	ND(5)	ND(50)
2-Butanone	ND(2500)	ND(25)	ND(24)	ND(25)	ND(23)	ND(15)	ND(26)	ND(35)	ND(24)	ND(250)
Carbon Disulfide	ND(50)	ND(5)	ND(5)	ND(5)	ND(4.6)	ND(3)	ND(2.6)	ND(7)	ND(5)	ND(50)
Carbon Tetrachloride	ND(50)	ND(5)	ND(5)	ND(5)	ND(4.6)	ND(7.5)	ND(2.6)	ND(7)	ND(5)	ND(50)
Chlorobenzene	ND(50)	ND(5)	ND(5)	ND(5)	ND(4.6)	ND(3)	ND(2.6)	ND(7)	ND(5)	ND(50)
Chloroform	ND(50)	ND(5)	ND(5)	ND(5)	ND(4.6)	ND(3)	ND(2.6)	ND(7)	ND(5)	ND(50)
Chloromethane	ND(120)	ND(12)	ND(12)	ND(12)	ND(12)	ND(7.5)	ND(6.5)	ND(17)	ND(12)	ND(130)
1,1-Dichloroethane	ND(50)	ND(5)	ND(5)	ND(5)	ND(4.6)	ND(3)	ND(2.6)	ND(7)	ND(5)	ND(50)
1,2-Dichloroethane	ND(50)	ND(5)	ND(5)	ND(5)	ND(4.6)	ND(3)	ND(2.6)	ND(7)	ND(5)	ND(50)
1,1-Dichloroethylene	ND(50)	ND(5)	ND(5)	ND(5)	ND(4.6)	ND(3)	ND(2.6)	ND(7)	ND(5)	ND(50)
1,2-Dichloroethylene	-	-	-	-	-	-	-	-	-	-
Trans-1,2-Dichloroethylene	ND(50)	ND(5)	ND(5)	ND(5)	ND(4.6)	ND(3)	ND(2.6)	ND(7)	ND(5)	ND(50)
1,2-Dichloropropane	ND(50)	ND(5)	ND(5)	ND(5)	ND(4.6)	ND(3)	ND(2.6)	ND(7)	ND(5)	ND(50)
Ethylbenzene	ND(50)	ND(5)	ND(5)	ND(5)	ND(4.6)	ND(3)	ND(2.6)	ND(7)	*8.8 A*	*430 A*
2-Hexanone	*380 A*	ND(25)	ND(24)	ND(25)	ND(23)	ND(15)	ND(26)	ND(35)	ND(25)	ND(250)
Methylene Chloride	ND(500)	*140 A*	*150 A*	*150 A*	*35 A*	*160 A*	*240 A*	*52 A*	*180 A*	*250 A*
4-methyl-2-Pentanone	ND(250)	ND(25)	ND(24)	ND(25)	ND(23)	ND(15)	ND(26)	*TR (35) A*	ND(25)	ND(250)
2,2-Oxybis propane	-	-	-	-	-	-	-	-	-	-
Styrene	ND(50)	ND(5)	ND(5)	ND(5)	ND(4.6)	ND(3)	ND(2.6)	ND(7)	ND(5)	ND(50)
Tetrachloroethylene	ND(50)	ND(5)	*TR(5) A*	*6.2 A*	ND(4.6)	ND(3)	ND(2.6)	ND(7)	ND(5)	ND(50)
1,1,1-Trichloroethane	ND(50)	ND(5)	ND(5)	ND(5)	ND(4.6)	ND(7.5)	ND(2.6)	ND(7)	*5.5 A*	ND(50)
Toluene	*TR(50) A*	*TR(5) A*	*TR(5) A*	*TR(5) A*	ND(4.6)	*8.5 A*	ND(2.6)	*7.6 A*	*16 A*	*94 A*
Trichloroethylene	ND(50)	ND(5)	ND(5)	ND(5)	ND(4.6)	ND(3)	ND(2.6)	ND(7)	ND(5)	ND(50)
Vinyl Acetate	ND(250)	ND(25)	ND(25)	ND(25)	ND(23)	ND(3)	ND(26)	ND(35)	ND(25)	ND(250)
Xylenes, mixture	*270 A*	ND(5)	ND(5)	ND(5)	ND(4.6)	ND(3)	ND(2.6)	ND(7)	*24 A*	*870 A*

SAMPLE DESIGNATION	SIT2 TP17 S2	SIT2 TP18 S1	SIT2 TP19 S3	SIT2 TP102 S3	SIT3 TP1 S1	SIT3 TP5 S1	SIT3 TP6 S1	SIT3 TP10 S2	SIT3 TP12 S1	SIT3 TP14 S3
SAMPLING DATE	11/17/1986	11/17/1986	11/17/1986	11/17/1986	11/19/1986	11/19/1986	11/19/1986	11/18/1986	11/17/1986	11/18/1986
SAMPLE DEPTH (FT.)	7	1.5	9	9	1.5	0.5	1.5	37747	1.5-2.5	37810
EXPLORATION TYPE	TEST PIT	TEST PIT	TEST PIT	SIT2 TP19 S3	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT
SOIL TYPE	LOAM	FILL	SAND	DUPLICATE	FILL	FILL	FILL	FILL	FILL	PEAT
ABNs (ug/kg)										
Acenaphthene	ND(450)	ND(430)	ND(510)	TR(430)	TR(440)	TR(410)	2600	10000	ND(17000)	890
Acenaphthylene	ND(450)	ND(430)	ND(510)	ND(430)	TR(440)	TR(410)	ND(860)	ND(5700)	ND(17000)	ND(450)
Anthracene	ND(450)	ND(430)	ND(510)	TR(430)	TR(440)	TR(410)	3000	14000	ND(17000)	970
Benzo(a)anthracene	ND(450)	ND(430)	TR(510)	560	920	630	8000	33000	TR(17000)	4400
Benzo(a)pyrene	ND(450)	ND(430)	TR(510)	530	930	570	6500	24000	ND(17000)	2600
Benzo(b,k)fluoranthene	ND(450)	ND(430)	TR(510)	700	950	950	11000	45000	TR(17000)	5500
Benzo(g,h,i)perylene	ND(450)	ND(430)	TR(510)	TR(430)	TR(440)	530	3200	20000	ND(17000)	3200
Bis(2-ethylhexyl)phthalate	-	1100	ND(510)	ND(430)	15000	1700	-	-	ND(17000)	-
Butylbenzylphthalate	ND(450)	ND(430)	ND(510)	-	ND(440)	ND(410)	ND(860)	ND(5700)	ND(17000)	ND(450)
p-Chloro-m-cresol	ND(450)	ND(430)	ND(510)	ND(430)	ND(440)	ND(410)	ND(860)	ND(5700)	ND(17000)	ND(450)
2-Chlorophenol	ND(450)	ND(430)	ND(510)	ND(430)	ND(440)	ND(410)	ND(860)	ND(5700)	ND(17000)	ND(450)
Chrysene	ND(450)	ND(430)	TR(510)	470	830	530	6300	26000	TR(17000)	2900
Dibenzo(a,h)anthracene	ND(450)	ND(430)	ND(510)	TR(430)	TR(440)	TR(410)	1000	TR(5700)	ND(17000)	500
1,2-Dichlorobenzene	ND(450)	ND(430)	ND(510)	ND(430)	ND(440)	ND(410)	ND(860)	ND(5700)	ND(17000)	ND(450)
1,4-Dichlorobenzene	ND(450)	ND(430)	ND(510)	ND(430)	ND(440)	ND(410)	ND(860)	ND(5700)	ND(17000)	ND(450)
Diethylphthalate	ND(450)	ND(430)	ND(510)	ND(430)	490	ND(410)	ND(860)	ND(5700)	ND(17000)	ND(450)
2,4-Dimethylphenol	ND(450)	ND(430)	ND(510)	ND(430)	ND(440)	ND(410)	ND(860)	ND(5700)	ND(17000)	ND(450)
Dimethylphthalate	ND(450)	ND(430)	ND(510)	ND(430)	ND(440)	ND(410)	ND(860)	ND(5700)	ND(17000)	ND(450)
Di-n-butyl phthalate	ND(450)	ND(430)	ND(510)	ND(430)	TR(440)	ND(410)	ND(860)	ND(5700)	ND(17000)	ND(450)
Di-n-octyl phthalate	ND(450)	ND(430)	ND(510)	ND(430)	ND(440)	ND(410)	ND(860)	ND(5700)	ND(17000)	ND(450)
2,4-Dinitrophenol	ND(450)	ND(430)	ND(510)	ND(430)	ND(440)	ND(410)	ND(860)	ND(5700)	ND(17000)	ND(450)
2,4-Dinitrotoluene	ND(450)	ND(430)	ND(510)	ND(430)	ND(440)	ND(410)	ND(860)	ND(5700)	ND(17000)	ND(450)
Fluoranthene	ND(450)	ND(430)	TR(510)	1100	1600	1100	16000	74000	TR(17000)	9300
Fluorene	ND(450)	ND(430)	ND(510)	TR(430)	TR(440)	TR(410)	2000	11000	ND(17000)	570
Indeno(1,2,3-cd)pyrene	ND(450)	ND(430)	TR(510)	TR(430)	490	560	3600	19000	ND(17000)	3000
Isophorone	ND(450)	ND(430)	ND(510)	ND(430)	ND(440)	ND(410)	ND(860)	ND(5700)	ND(17000)	ND(450)
Naphthalene	770	590	TR(510)	TR(430)	TR(440)	TR(410)	1800	7300	ND(17000)	1900
Nitrobenzene	ND(450)	ND(430)	ND(510)	ND(430)	ND(440)	ND(410)	ND(860)	ND(5700)	ND(17000)	ND(450)
n-Nitrosodi-n-propylamine	ND(450)	ND(430)	ND(510)	-	ND(440)	ND(410)	ND(860)	ND(5700)	-	ND(450)
n-Nitrosodiphenylamine	-	-	ND(510)	-	-	-	ND(860)	-	-	ND(450)
Pentachlorophenol	TR(450)	ND(430)	ND(510)	ND(430)	ND(440)	ND(410)	ND(860)	ND(5700)	ND(17000)	ND(450)
Phenanthrene	ND(450)	TR(430)	TR(510)	1000	1300	620	18000	69000	TR(17000)	8000
Phenol	ND(450)	ND(430)	ND(510)	ND(430)	ND(440)	ND(410)	ND(860)	ND(5700)	ND(17000)	ND(450)
Pyrene	ND(450)	ND(430)	TR(510)	770	1200	770	13000	49000	TR(17000)	6000
1,2,4-Trichlorobenzene	ND(450)	ND(430)	ND(510)	ND(430)	ND(440)	ND(410)	ND(860)	ND(5700)	ND(17000)	ND(450)

SAMPLE DESIGNATION	SIT2 TP17 S2	SIT2 TP18 S1	SIT2 TP19 S3	SIT2 TP102 S3	SIT3 TP1 S1	SIT3 TP5 S1	SIT3 TP6 S1	SIT3 TP10 S2	SIT3 TP12 S1	SIT3 TP14 S3
SAMPLING DATE	11/17/1986	11/17/1986	11/17/1986	11/17/1986	11/19/1986	11/18/1986	11/19/1986	11/18/1986	11/17/1986	11/18/1986
SAMPLE DEPTH (FT.)	7	1.5	9	9	1.5	0.5	1.5	37747	1.5-2.5	37810
EXPLORATION TYPE	TEST PIT	TEST PIT	TEST PIT	SIT2 TP19 S3	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT
SOIL TYPE	LOAM	FILL	SAND	DUPLICATE	FILL	FILL	FILL	FILL	FILL	PEAT
TOTAL METALS (mg/kg)										
Antimony	ND(1.1)	ND(1.2)	ND(1.1)	ND(1.1)	ND(1.1)	ND(1)	ND(1.1)	ND(1.1)	ND(1.2)	ND(1.5)
Arsenic	ND(0.8)	5.6	2.7	1.7	3.1	4.4	1.8	6.9	4.6	14
Barium	-	-	-	-	-	-	-	-	-	-
Beryllium	0.29	0.76	0.22	0.24	0.45	0.41	0.21	0.34	0.59	0.48
Cadmium	ND(0.21)	ND(0.23)	ND(0.22)	ND(0.23)	0.6	1.2	0.51	3.1	1.1	10
Chromium	9.2	19	7.6	8.1	13	9.5	7.6	12	190	16
Copper	5.3	16	9.5	9.9	16	21	13	120	34	57
Iron	-	-	-	-	-	-	-	-	-	-
Lead	5.3	78	13	14	50	330	69	110	120	150
Mercury	0.074	0.059	0.021	0.054	0.75	0.41	3.8	0.48	0.47	0.26
Nickel	4.7	13	5.1	4.8	7.8	6.6	8	53	19	15
Selenium	ND(0.8)	ND(1.1)	ND(1)	ND(0.67)	ND(1)	ND(1.1)	ND(1.1)	ND(1)	ND(1.2)	ND(1.2)
Silver	ND(0.21)	ND(0.23)	ND(0.22)	ND(0.23)	ND(0.22)	0.23	ND(0.22)	ND(0.22)	ND(0.23)	ND(0.31)
Thallium	ND(0.8)	ND(1.1)	ND(1)	ND(0.67)	ND(1)	ND(1.1)	ND(1.1)	ND(1)	ND(1.2)	ND(1.2)
Zinc	16	42	29	27	330	580	360	650	310	970
EP TOXICITY	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
OIL & GREASE (mg/kg)	757	161	1030	1090	502	1210	496	10500	81700	3640
PETROLEUM HYDROCARBON IDENTIFICATION (mg/kg)										
Quantity	82	4.3	2.4	63	20	8.2	23	820	1257	1000
Type	LUBRICATING OIL WITH GASOLINE/KEROSENE MIXTURE	TRACE GASOLINE	ND	#2 FUEL OIL	FUEL OIL WITH PYROLYSIS PRODUCTS	FUEL OIL WITH PYROLYSIS PRODUCTS	FUEL OIL WITH PYROLYSIS PRODUCTS	FUEL OIL WITH COAL TAR MIXTURE	#2 FUEL OIL	FUEL OIL
WASTE CHARACTERISTICS										
Total Cyanide (mg/kg)	ND(0.28)	ND(0.3)	ND(0.24)	ND(0.33)	ND(0.25)	0.7	ND(0.25)	0.6	ND(0.33)	ND(0.24)
Total Phenolics (mg/kg)	ND(0.15)	0.2	ND(0.12)	ND(0.15)	1.8	0.7	ND(0.11)	0.3	4.1	0.5
Formaldehyde (mg/kg)	3.5	0.4	1.4	1.6	1.6	3.2	1.3	1.1	2.9	1.8
Sulfate (mg/kg)	-	-	-	-	-	-	-	-	-	-
Corrosivity (pH)	-	-	-	-	-	-	-	-	-	-
Specific Conductance (ushos/cm)	-	-	-	-	-	-	-	-	-	-
Biological Oxygen Demand (mg/kg)	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids (mg/kg)	-	-	-	-	-	-	-	-	-	-
Chloride (mg/kg)	-	-	-	-	-	-	-	-	-	-

ABBREVIATIONS:

- : Not analyzed; or invalid data as determined by the validation process.
ND: Compound not detected, detection limit not available.
TR: Compound detected below laboratory reporting limit, detection limit not available.
ND(2.5): Not detected; number in parentheses is equal to the laboratory Reporting Limit
A 54: Concentration is Approximate as determined by validation process.
TR (460): Trace Concentration. Compound detected at concentrations below the reporting limit; number in parentheses is equal to the laboratory reporting limit, detection limit.
PASS: Extracted metals not detected or detected below toxic levels
VOCs: Volatile Organic Compounds
ABNs: Acid/Base/Neutral Extractables

NOTES:

1. This table includes only those compounds detected on the dates indicated.
2. " " indicates trans 1,2-Dichlorothene and cis 1,2-dichloroethene grouped and reported as 1,2-Dichlorothene
3. " " indicates possible contribution from ERCO matrix spiking solution.

TABLE IV
SUMMARY OF OHM SOIL QUALITY DATA - 1984 to 1988
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

SAMPLE DESIGNATION	SIT3 TP15 S2	SIT3 TP101 S2	SIT3 TP16 S2	SIT3 TP19 S2	SIT3 TP102 S2	SIT4 TP1 S2	SIT4 TP3 S3	SIT4 TP6 S2	SIT4 TP7 S3	SIT4 TP8 S2	SIT4 TP11 S2
SAMPLING DATE	11/18/1986	11/18/1986	11/18/1986	11/20/1986	11/20/1986	11/25/1986	11/25/1986	11/25/1986	11/26/1986	11/26/1986	11/26/1986
SAMPLE DEPTH (FT.)	3.5	3.5	7-7.5	5-5.5	5-5.5	37.17	8	3	10	6	4
EXPLORATION TYPE	TEST PIT	SIT3 TP15 S2	TEST PIT	TEST PIT	SIT3 TP19 S2	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT
SOIL TYPE	FILL	DUPLICATE	PEAT	FILL	DUPLICATE	PEAT	SAND	FILL	SILT	PEAT	FILL
VOCs (ug/kg)											
Acetone	*260 A*	ND(230)	*470 A*	*230 A*	ND(300)	*240 A*	ND(85)	*110 A*	*160 A*	ND(50)	ND(1200)
Benzene	*13 A*	ND(9.3)	*160 A*	ND(5.2)	ND(9)	ND(3)	ND(3.4)	ND(3.2)	ND(4.6)	ND(5)	*140 A*
Bromodichloromethane	ND(3.4)	ND(9.3)	ND(10)	ND(5.2)	ND(9)	ND(3)	ND(3.4)	ND(3.2)	ND(4.6)	ND(5)	ND(50)
2-Butanone	*110 A*	ND(46)	*100 A*	*67 A*	ND(45)	*50 A*	ND(17)	ND(16)	ND(60)	ND(25)	ND(1000)
Carbon Disulfide	*4.7 A*	ND(9.3)	ND(10)	ND(5.2)	ND(9)	ND(3)	ND(3.4)	ND(3.2)	ND(4.6)	ND(5)	ND(50)
Carbon Tetrachloride	ND(3.4)	ND(9.3)	ND(10)	ND(5.2)	ND(9)	ND(3)	ND(3.4)	ND(3.2)	ND(4.6)	ND(5)	ND(50)
Chlorobenzene	ND(3.4)	ND(9.3)	ND(10)	ND(5.2)	ND(9)	ND(3)	ND(3.4)	ND(3.2)	ND(4.6)	ND(5)	*70 A*
Chloroform	ND(3.4)	ND(9.3)	ND(10)	ND(5.2)	ND(9)	ND(3)	ND(3.4)	ND(3.2)	ND(4.6)	ND(5)	ND(50)
Chloromethane	ND(8.5)	ND(23)	ND(25)	ND(13)	ND(23)	ND(7.5)	ND(8.5)	ND(8)	ND(11)	ND(13)	ND(120)
1,1-Dichloroethane	ND(3.4)	ND(9.3)	ND(10)	ND(5.2)	ND(9)	ND(3)	ND(3.4)	ND(3.2)	ND(4.6)	ND(5)	ND(50)
1,2-Dichloroethane	ND(3.4)	ND(9.3)	ND(10)	ND(5.2)	ND(9)	ND(3)	ND(3.4)	ND(3.2)	ND(4.6)	ND(5)	ND(50)
1,1-Dichloroethylene	ND(3.4)	ND(9.3)	ND(10)	ND(5.2)	ND(9)	ND(3)	ND(3.4)	ND(3.2)	ND(4.6)	ND(5)	NA
1,2-Dichloroethylene	-	-	-	-	-	-	-	-	-	-	-
Trans-1,2-Dichloroethylene	ND(3.4)	ND(9.3)	ND(10)	ND(5.2)	ND(9)	ND(3)	ND(3.4)	ND(3.2)	ND(4.6)	ND(5)	ND(50)
1,2-Dichloropropane	ND(3.4)	ND(9.3)	ND(10)	ND(5.2)	ND(9)	ND(3)	ND(3.4)	ND(3.2)	ND(4.6)	ND(5)	ND(50)
Ethylbenzene	*100 A*	49	*12 A*	ND(5.2)	ND(9)	ND(3)	ND(3.4)	ND(3.2)	ND(4.6)	ND(5)	*1200 A*
2-Hexanone	ND(17)	ND(46)	ND(50)	ND(26)	ND(45)	ND(15)	ND(17)	ND(16)	ND(23)	ND(25)	ND(250)
Methylene Chloride	*200 A*	ND(23)	*67 A*	*49 A*	*61 A*	*210 A*	*110 A*	*89 A*	ND(50)	*100 A*	ND(400)
4-methyl-2-Pentanone	ND(17)	ND(46)	*110 A*	ND(26)	ND(45)	ND(15)	ND(17)	ND(16)	ND(23)	ND(25)	ND(250)
2,2-Oxybis propane	-	-	-	-	-	-	-	-	-	-	-
Styrene	ND(3.4)	ND(9.3)	ND(10)	ND(5.2)	ND(9)	ND(3)	ND(3.4)	ND(3.2)	ND(4.6)	ND(5)	ND(50)
Tetrachloroethylene	*12 A*	ND(9.3)	ND(10)	ND(5.2)	ND(9)	ND(3)	ND(3.4)	ND(3.2)	ND(4.6)	ND(5)	ND(50)
1,1,1-Trichloroethane	ND(3.4)	ND(9.3)	ND(10)	ND(5.2)	ND(9)	ND(3)	ND(3.4)	ND(4)	ND(4.6)	ND(5)	ND(50)
Toluene	*20 A*	ND(9.3)	*15 A*	*5.8 A*	ND(9)	*TR (3)*	*TR (3.4)*	ND(3.2)	ND(4.6)	*5.9 A*	*130 A*
Trichloroethylene	ND(3.4)	ND(9.3)	ND(10)	ND(5.2)	ND(9)	ND(3)	ND(3.4)	ND(3.2)	ND(4.6)	ND(5)	TR
Vinyl Acetate	ND(17)	ND(46)	ND(50)	ND(26)	ND(45)	ND(15)	ND(17)	ND(16)	ND(23)	ND(25)	ND(250)
Xylenes, mixture	*490 A*	*270 A*	*110 A*	ND(5.2)	ND(9)	ND(3)	ND(3.4)	ND(3.2)	ND(4.6)	ND(5)	ND(50)

SAMPLE DESIGNATION	SIT3 TP15 S2	SIT3 TP101 S2	SIT3 TP16 S2	SIT3 TP19 S2	SIT3 TP102 S2	SIT4 TP1 S2	SIT4 TP3 S3	SIT4 TP6 S2	SIT4 TP7 S3	SIT4 TP8 S2	SIT4 TP11 S2
SAMPLING DATE	11/18/1986	11/18/1986	11/18/1986	11/20/1986	11/20/1986	11/25/1986	11/25/1986	11/25/1986	11/26/1986	11/26/1986	11/26/1986
SAMPLE DEPTH (FT.)	3.5	3.5	7-7.5	5-5.5	5-5.5	37717	8	3	10	6	4
EXPLORATION TYPE	TEST PIT	SIT3 TP15 S2	TEST PIT	TEST PIT	SIT3 TP19 S2	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT
SOIL TYPE	FILL	DUPLICATE	PEAT	FILL	DUPLICATE	PEAT	SAND	FILL	SILT	PEAT	FILL
ABNs (ug/kg)											
Acenaphthene	ND(4100)	TR(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	ND(1300)	ND(980)	ND(3800)	TR(3300)
Acenaphthylene	ND(4100)	ND(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	ND(1300)	ND(980)	ND(3800)	ND(3300)
Anthracene	ND(4100)	ND(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	TR(1300)	ND(980)	ND(3800)	TR(3300)
Benzo(a)anthracene	TR(4100)	TR(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	TR(1300)	ND(980)	ND(3800)	TR(3300)
Benzo(a)pyrene	ND(4100)	TR(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	TR(1300)	TR(980)	ND(3800)	TR(3300)
Benzo(b,k)fluoranthene	TR(4100)	TR(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	TR(1300)	ND(980)	ND(3800)	TR(3300)
Benzo(g,h,i)perylene	ND(4100)	ND(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	TR(1300)	ND(980)	ND(3800)	ND(3300)
Bis(2-ethylhexyl)phthalate	ND(4100)	ND(9200)	ND(820)	ND(1100)	-	-	ND(370)	-	ND(980)	ND(3800)	-
Butylbenzylphthalate	ND(4100)	ND(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	ND(1300)	ND(980)	ND(3800)	ND(3300)
p-Chloro-m-cresol	ND(4100)	ND(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	ND(1300)	ND(980)	ND(3800)	ND(3300)
2-Chlorophenol	ND(4100)	ND(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	ND(1300)	ND(980)	ND(3800)	ND(3300)
Chrysene	TR(4100)	TR(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	TR(1300)	ND(980)	ND(3800)	TR(3300)
Dibenzo(a,h)anthracene	ND(4100)	ND(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	TR(1300)	ND(980)	ND(3800)	ND(3300)
1,2-Dichlorobenzene	ND(4100)	ND(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	ND(1300)	ND(980)	ND(3800)	ND(3300)
1,4-Dichlorobenzene	ND(4100)	ND(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	ND(1300)	ND(980)	ND(3800)	ND(3300)
Diethylphthalate	ND(4100)	ND(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	ND(1300)	ND(980)	ND(3800)	ND(3300)
2,4-Dimethylphenol	ND(4100)	ND(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	ND(1300)	ND(980)	ND(3800)	ND(3300)
Dimethylphthalate	ND(4100)	ND(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	ND(1300)	ND(980)	ND(3800)	ND(3300)
Di-n-butyl phthalate	ND(4100)	ND(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	ND(1300)	ND(980)	ND(3800)	ND(3300)
Di-n-octyl phthalate	ND(4100)	ND(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	ND(1300)	ND(980)	ND(3800)	ND(3300)
2,4-Dinitrophenol	ND(4100)	ND(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	ND(1300)	ND(980)	ND(3800)	ND(3300)
2,4-Dinitrotoluene	ND(4100)	ND(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	ND(1300)	ND(980)	ND(3800)	ND(3300)
Fluoranthene	TR(4100)	TR(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	TR(1300)	ND(980)	ND(3800)	TR(3300)
Fluorene	TR(4100)	TR(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	ND(1300)	ND(980)	ND(3800)	TR(3300)
Indeno(1,2,3-cd)pyrene	ND(4100)	ND(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	TR(1300)	ND(980)	ND(3800)	ND(3300)
Isophorone	ND(4100)	ND(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	ND(1300)	ND(980)	ND(3800)	ND(3300)
Naphthalene	8000	20000	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	TR(1300)	ND(980)	TR(3800)	TR(3300)
Nitrobenzene	ND(4100)	ND(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	ND(1300)	ND(980)	ND(3800)	ND(3300)
n-Nitrosodi-n-propylamine	ND(4100)	ND(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	ND(1300)	ND(980)	ND(3800)	ND(3300)
n-Nitrosodiphenylamine	ND(4100)	ND(9200)	-	-	-	ND(710)	-	-	-	ND(3800)	-
Pentachlorophenol	ND(4100)	ND(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	ND(1300)	TR(980)	ND(3800)	ND(3300)
Phenanthrene	TR(4100)	TR(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	TR(1300)	ND(980)	ND(3800)	TR(3300)
Phenol	ND(4100)	ND(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	ND(1300)	ND(980)	ND(3800)	ND(3300)
Pyrene	TR(4100)	TR(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	TR(1300)	ND(980)	ND(3800)	TR(3300)
1,2,4-Trichlorobenzene	ND(4100)	ND(9200)	ND(820)	ND(1100)	ND(1100)	ND(710)	ND(370)	ND(1300)	ND(980)	ND(3800)	ND(3300)

SAMPLE DESIGNATION	SIT3 TP15 S2	SIT3 TP101 S2	SIT3 TP16 S2	SIT3 TP19 S2	SIT3 TP102 S2	SIT4 TP1 S2	SIT4 TP3 S3	SIT4 TP6 S2	SIT4 TP7 S3	SIT4 TP8 S2	SIT4 TP11 S2
SAMPLING DATE	11/18/1986	11/18/1986	11/18/1986	11/20/1986	11/20/1986	11/25/1986	11/25/1986	11/25/1986	11/26/1986	11/26/1986	11/26/1986
SAMPLE DEPTH (FT.)	3.5	3.5	7-7.5	5-5.5	5-5.5	37717	8	3	10	6	4
EXPLORATION TYPE	TEST PIT	SIT3 TP15 S2	TEST PIT	TEST PIT	SIT3 TP19 S2	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT
SOIL TYPE	FILL	DUPLICATE	PEAT	FILL	DUPLICATE	PEAT	SAND	FILL	SILT	PEAT	FILL
TOTAL METALS (mg/kg)											
Antimony	ND(2.4)	ND(2)	ND(2.5)	ND(2)	ND(2.5)	ND(3.3)	ND(1.1)	ND(1.2)	ND(1.2)	ND(4.6)	ND(1.5)
Arsenic	7.3	6.1	10	8	12	13	2.9	11	14	5.6	9.8
Barium	-	-	-	-	-	-	-	-	-	-	-
Beryllium	0.7	0.54	0.89	0.82	1	0.43	ND(0.11)	0.37	0.48	ND(0.46)	0.48
Cadmium	54	42	0.57	ND(0.4)	ND(0.5)	ND(0.67)	ND(0.23)	0.72	ND(0.24)	ND(0.93)	0.42
Chromium	13	11	14	13	12	21	7.6	15	27	9.7	16
Copper	75	61	130	20	24	24	7.9	65	23	6.9	26
Iron	-	-	-	-	-	-	-	-	-	-	-
Lead	310	310	100	39	16	14	ND(2.3)	390	8.5	ND(9.3)	52
Mercury	0.33	0.29	0.41	0.095	0.079	ND(0.067)	ND(0.018)	0.52	ND(0.026)	ND(0.087)	0.097
Nickel	87	8.4	21	10	6.8	14	7.3	19	24	5.2	14
Selenium	2.9	2.3	ND(2.1)	ND(1.6)	2	ND(3.4)	ND(1.1)	ND(0.8)	ND(1.2)	ND(4.7)	ND(1.5)
Silver	ND(0.48)	ND(0.4)	ND(0.5)	ND(0.4)	ND(0.5)	ND(0.67)	ND(0.23)	ND(0.25)	ND(0.24)	ND(0.93)	ND(0.3)
Thallium	ND(1.5)	ND(1.7)	ND(2.1)	ND(1.6)	ND(1.8)	ND(3.4)	ND(1.1)	ND(0.8)	ND(1.2)	ND(4.7)	ND(1.5)
Zinc	3720	4370	350	24	19	52	18	390	55	3.7	280
EP TOXICITY	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
OIL & GREASE (mg/kg)	4950	14600	7750	6470	6760	2830	ND(100)	1540	150	7880	907
PETROLEUM HYDROCARBON IDENTIFICATION (mg/kg)											
Quantity	1600	2100	210	8.7	5.2	31	ND	21	ND(1)	16	11
Type	FUEL OIL WITH PYROLYSIS PRODUCTS	FUEL OIL	FUEL OIL WITH PYROLYSIS PRODUCTS	ND	ND	FUEL OIL WITH PYROLYSIS PRODUCTS	ND	FUEL OIL WITH PYROLYSIS PRODUCTS	ND	ND	FUEL OIL WITH TRACE COAL TAR
WASTE CHARACTERISTICS											
Total Cyanide (mg/kg)	0.7	ND(0.42)	ND(0.52)	ND(0.3)	ND(0.52)	ND(0.61)	ND(0.31)	0.5	ND(0.32)	ND(1.1)	ND(0.41)
Total Phenolics (mg/kg)	0.5	0.5	0.8	0.9	1	ND(0.23)	ND(0.11)	ND(0.14)	0.3	0.7	1.6
Formaldehyde (mg/kg)	1	1.5	0.5	0.7	ND(0.4)	3	0.5	0.6	2.2	150	23
Sulfate (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Corrosivity (pH)	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance (ushos/cm)	-	-	-	-	-	-	-	-	-	-	-
Biological Oxygen Demand (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Chloride (mg/kg)	-	-	-	-	-	-	-	-	-	-	-

ABBREVIATIONS:

- : Not analyzed, or invalid data as determined by the validation process.

ND: Compound not detected, detection limit not available.

TR: Compound detected below laboratory reporting limit; detection limit not available.

ND(2.5): Not detected; number in parentheses is equal to the laboratory Reporting Limit

A 54: Concentration is Approximate as determined by validation process.

TR (460): Trace Concentration. Compound detected at concentrations below the reporting limit; number in parentheses is equal to the laboratory reporting limit. detection limit.

PASS: Extracted metals not detected or detected below toxic levels.

VOCs: Volatile Organic Compounds

ABNs: Acid/Base/Neutral Extractables

NOTES:

1. This table includes only those compounds detected on the dates indicated.
2. "*" indicates trans 1,2-Dichlorothene and cis 1,2-dichloroethene grouped and reported as 1,2-Dichlorothene
3. "**" indicates possible contribution from ERCO matrix spiking solution.

TABLE IV
SUMMARY OF OHM SOIL QUALITY DATA - 1984 to 1988
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

SAMPLE DESIGNATION	SIT4 TP102 S2	SIT4 TP13 S2	SIT4 TP101 S2	SIT4 TP16 S3	SIT4 TP16 S2	SIT4 TP20 S3	SIT5 TP3 S1	SIT5 TP6 S2	SIT5 TP8 S2	SIT5 TP11 S1	SIT5 TP12 S2
SAMPLING DATE	11/26/1986	11/26/1986	11/26/1986	11/26/1986	11/26/1986	11/26/1986	11/20/1986	11/20/1986	11/20/1986	11/24/1986	11/24/1986
SAMPLE DEPTH (FT.)	4	4	4	10	5	37874	37684	6-6.5	4-4.5	1.5	4.5-5
EXPLORATION TYPE	SIT4 TP11 S2	TEST PIT	SIT4 TP13 S2	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT
SOIL TYPE	DUPLICATE	FILL	DUPLICATE	SAND	PEAT	SAND	FILL	PEAT	FILL	FILL	PEAT
VOCs (ug/kg)											
Acetone	ND(1200)	ND(5000)	ND(500)	*570 A*	ND(4900)	ND(1200)	ND(180)	*280 A*	*250 A*	ND(120)	ND(120)
Benzene	*160 A*	ND(200)	ND(200)	ND(9)	*1400 A*	ND(50)	ND(7.2)	ND(9.6)	*10 A*	ND(5)	ND(5)
Bromodichloromethane	ND(50)	ND(200)	ND(200)	ND(9)	ND(200)	ND(50)	ND(7.2)	ND(9.6)	ND(9)	ND(5)	ND(5)
2-Butanone	ND(2700)	ND(4000)	ND(990)	ND(45)	ND(3000)	ND(2500)	ND(36)	ND(48)	ND(45)	ND(25)	ND(25)
Carbon Disulfide	ND(50)	ND(200)	ND(5000)	ND(9)	ND(200)	ND(50)	ND(7.2)	ND(9.6)	ND(9)	ND(5)	ND(5)
Carbon Tetrachloride	ND(50)	ND(200)	ND(200)	ND(9)	ND(200)	ND(50)	ND(7.2)	ND(9.6)	ND(9)	ND(5)	ND(5)
Chlorobenzene	ND(50)	ND(200)	ND(200)	ND(9)	ND(200)	ND(50)	ND(7.2)	ND(9.6)	ND(9)	ND(5)	ND(5)
Chloroform	ND(50)	ND(200)	ND(200)	ND(9)	ND(200)	ND(50)	ND(7.2)	ND(9.6)	ND(9)	ND(5)	ND(5)
Chloromethane	ND(120)	ND(500)	ND(500)	ND(22)	ND(490)	ND(120)	ND(18)	ND(24)	ND(23)	ND(12)	ND(12)
1,1-Dichloroethane	ND(50)	ND(200)	ND(200)	ND(9)	ND(200)	ND(50)	ND(7.2)	ND(9.6)	ND(9)	ND(5)	ND(5)
1,2-Dichloroethane	ND(50)	ND(200)	ND(200)	ND(9)	ND(200)	ND(50)	ND(7.2)	ND(9.6)	ND(9)	ND(5)	ND(5)
1,1-Dichloroethylene	ND(50)	ND(200)	ND(200)	ND(9)	ND(200)	ND(50)	ND(7.2)	ND(9.6)	ND(9)	*21 A*	*42 A*
1,2-Dichloroethylene	-	-	-	-	-	-	-	-	-	-	-
Trans-1,2-Dichloroethylene	ND(50)	ND(200)	ND(200)	ND(9)	ND(200)	ND(50)	ND(7.2)	ND(9.6)	ND(9)	ND(5)	ND(5)
1,2-Dichloropropane	ND(50)	ND(200)	ND(200)	ND(9)	ND(200)	ND(50)	ND(7.2)	ND(9.6)	ND(9)	ND(5)	ND(5)
Ethylbenzene	*1300 A*	ND(200)	A 970	ND(9)	*21000 A*	ND(50)	ND(7.2)	ND(9.6)	ND(9)	ND(5)	ND(5)
2-Hexanone	ND(250)	ND(200)	ND(990)	ND(45)	ND(980)	ND(250)	ND(36)	ND(48)	ND(45)	ND(25)	ND(25)
Methylene Chloride	ND(750)	ND(1000)	ND(500)	ND(22)	ND(2000)	ND(300)	*170 A*	*60 A*	*200 A*	*68 A*	*34 A*
4-methyl-2-Pentanone	ND(250)	*1200 A*	ND(990)	ND(45)	ND(980)	ND(250)	ND(36)	ND(48)	ND(45)	ND(25)	ND(25)
2,2-Oxybis propane	-	-	-	-	-	-	-	-	-	-	-
Styrene	ND(50)	*25000 A*	ND(200)	ND(9)	*12000 A*	ND(50)	ND(7.2)	ND(9.6)	ND(9)	ND(5)	ND(5)
Tetrachloroethylene	ND(50)	ND(200)	ND(200)	ND(9)	ND(200)	ND(50)	ND(7.2)	ND(9.6)	ND(9)	ND(5)	ND(5)
1,1,1-Trichloroethane	ND(50)	ND(200)	ND(200)	ND(9)	ND(200)	ND(50)	ND(7.2)	ND(9.6)	ND(9)	NA	ND(5)
Toluene	ND(50)	ND(200)	ND(200)	ND(9)	*240 A*	ND(50)	*11 A*	*9.6 A*	*26 A*	*6 A*	*5.5 A*
Trichloroethylene	ND(50)	ND(200)	ND(200)	ND(9)	ND(200)	*1200 A*	ND(7.2)	ND(9.6)	ND(9)	ND(5)	ND(5)
Vinyl Acetate	ND(250)	ND(1000)	ND(990)	ND(45)	ND(980)	ND(250)	ND(36)	ND(48)	ND(45)	ND(25)	ND(25)
Xylenes, mixture	*360 A*	ND(200)	ND(200)	ND(9)	*6400 A*	ND(50)	ND(7.2)	ND(9.6)	ND(9)	ND(5)	ND(5)

SAMPLE DESIGNATION	SIT4 TP102 S2	SIT4 TP13 S2	SIT4 TP101 S2	SIT4 TP16 S3	SIT4 TP18 S2	SIT4 TP20 S3	SIT5 TP3 S1	SIT5 TP6 S2	SIT5 TP8 S2	SIT5 TP11 S1	SIT5 TP12 S2
SAMPLING DATE	11/26/1986	11/26/1986	11/26/1986	11/26/1986	11/26/1986	11/26/1986	11/20/1986	11/20/1986	11/20/1986	11/24/1986	11/24/1986
SAMPLE DEPTH (FT.)	4	4	4	10	5	37874	37684	6-6.5	4-4.5	1.5	4.5-5
EXPLORATION TYPE	SIT4 TP11 S2	TEST PIT	SIT4 TP13 S2	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT
SOIL TYPE	DUPLICATE	FILL	DUPLICATE	SAND	PEAT	SAND	FILL	PEAT	FILL	FILL	PEAT
ABNs (ug/kg)											
Acenaphthene	TR(660)	TR(3400)	TR(5200)	ND(430)	ND(3500)	ND(410)	ND(460)	ND(12000)	ND(12000)	ND(830)	ND(1800)
Acenaphthylene	ND(660)	ND(3400)	ND(5200)	ND(430)	ND(3500)	ND(410)	ND(460)	ND(12000)	ND(12000)	ND(830)	ND(1800)
Anthracene	ND(660)	TR(3400)	TR(5200)	ND(430)	ND(3500)	ND(410)	TR(460)	ND(12000)	ND(12000)	TR(830)	ND(1800)
Benzo(a)anthracene	TR(660)	TR(3400)	TR(5200)	ND(430)	ND(3500)	ND(410)	TR(460)	ND(12000)	ND(12000)	TR(830)	ND(1800)
Benzo(a)pyrene	TR(660)	ND(3400)	TR(5200)	ND(430)	ND(3500)	ND(410)	TR(460)	ND(12000)	ND(12000)	TR(830)	ND(1800)
Benzo(b,k)fluoranthene	TR(660)	TR(3400)	TR(5200)	ND(430)	ND(3500)	ND(410)	TR(460)	ND(12000)	ND(12000)	TR(830)	ND(1800)
Benzo(g,h,i)perylene	TR(660)	ND(3400)	ND(5200)	ND(430)	ND(3500)	ND(410)	TR(460)	ND(12000)	ND(12000)	TR(830)	ND(1800)
Bis(2-ethylhexyl)phthalate	-	-	-	ND(430)	-	ND(410)	-	ND(12000)	ND(12000)	-	-
Butylbenzylphthalate	ND(660)	ND(3400)	ND(5200)	ND(430)	ND(3500)	ND(410)	ND(460)	ND(12000)	ND(12000)	ND(830)	ND(1800)
p-Chloro-m-cresol	ND(660)	ND(3400)	ND(5200)	ND(430)	ND(3500)	ND(410)	ND(460)	ND(12000)	ND(12000)	ND(830)	ND(1800)
2-Chlorophenol	ND(660)	ND(3400)	ND(5200)	ND(430)	ND(3500)	ND(410)	ND(460)	ND(12000)	ND(12000)	ND(830)	ND(1800)
Chrysene	TR(660)	TR(3400)	TR(5200)	ND(430)	ND(3500)	ND(410)	TR(460)	ND(12000)	ND(12000)	TR(830)	ND(1800)
Dibenzo(a,h)anthracene	ND(660)	ND(3400)	ND(5200)	ND(430)	ND(3500)	ND(410)	ND(460)	ND(12000)	ND(12000)	TR(830)	ND(1800)
1,2-Dichlorobenzene	ND(660)	ND(3400)	ND(5200)	ND(430)	ND(3500)	ND(410)	ND(460)	ND(12000)	ND(12000)	ND(830)	ND(1800)
1,4-Dichlorobenzene	ND(660)	ND(3400)	ND(5200)	ND(430)	ND(3500)	ND(410)	ND(460)	ND(12000)	ND(12000)	ND(830)	ND(1800)
Diethylphthalate	ND(660)	ND(3400)	ND(5200)	ND(430)	ND(3500)	ND(410)	ND(460)	ND(12000)	ND(12000)	ND(830)	ND(1800)
2,4-Dimethylphenol	ND(660)	ND(3400)	ND(5200)	ND(430)	ND(3500)	TR(410)	ND(460)	ND(12000)	ND(12000)	ND(830)	ND(1800)
Dimethylphthalate	ND(660)	ND(3400)	ND(5200)	ND(430)	ND(3500)	ND(410)	ND(460)	ND(12000)	ND(12000)	ND(830)	ND(1800)
Di-n-butyl phthalate	ND(660)	ND(3400)	ND(5200)	ND(430)	ND(3500)	ND(410)	ND(460)	ND(12000)	ND(12000)	ND(830)	ND(1800)
Di-n-octyl phthalate	ND(660)	ND(3400)	ND(5200)	ND(430)	ND(3500)	ND(410)	ND(460)	ND(12000)	ND(12000)	ND(830)	ND(1800)
2,4-Dinitrophenol	ND(660)	ND(3400)	ND(5200)	ND(430)	ND(3500)	ND(410)	ND(460)	ND(12000)	ND(12000)	ND(830)	ND(1800)
2,4-Dinitrotoluene	ND(660)	ND(3400)	ND(5200)	ND(430)	ND(3500)	ND(410)	ND(460)	ND(12000)	ND(12000)	ND(830)	ND(1800)
Fluoranthene	TR(660)	4200	TR(5200)	ND(430)	ND(3500)	ND(410)	TR(460)	ND(12000)	ND(12000)	TR(830)	ND(1800)
Fluorene	TR(660)	TR(3400)	TR(5200)	ND(430)	ND(3500)	ND(410)	ND(460)	ND(12000)	ND(12000)	ND(830)	ND(1800)
Indeno(1,2,3-cd)pyrene	TR(660)	ND(3400)	ND(5200)	ND(430)	ND(3500)	ND(410)	TR(460)	ND(12000)	ND(12000)	TR(830)	ND(1800)
Isophorone	ND(660)	ND(3400)	ND(5200)	ND(430)	ND(3500)	ND(410)	ND(460)	ND(12000)	ND(12000)	ND(830)	ND(1800)
Naphthalene	TR(660)	6200	7500	700	150000	720	ND(460)	ND(12000)	ND(12000)	ND(830)	ND(1800)
Nitrobenzene	ND(660)	ND(3400)	ND(5200)	ND(430)	ND(3500)	ND(410)	ND(460)	ND(12000)	ND(12000)	ND(830)	ND(1800)
n-Nitrosodi-n-propylamine	ND(660)	ND(3400)	ND(5200)	ND(430)	ND(3500)	ND(410)	ND(460)	ND(12000)	ND(12000)	ND(830)	ND(1800)
n-Nitrosodiphenylamine	-	ND(3400)	-	-	ND(3500)	-	ND(460)	ND(12000)	ND(12000)	-	-
Pentachlorophenol	ND(660)	ND(3400)	ND(5200)	ND(430)	TR(3500)	ND(410)	ND(460)	ND(12000)	ND(12000)	ND(830)	TR(1800)
Phenanthrene	TR(660)	3900	TR(5200)	ND(430)	ND(3500)	ND(410)	TR(460)	ND(12000)	ND(12000)	TR(830)	ND(1800)
Phenol	ND(660)	4400	TR(5200)	TR(430)	ND(3500)	ND(410)	ND(460)	ND(12000)	ND(12000)	ND(830)	ND(1800)
Pyrene	TR(660)	TR(3400)	TR(5200)	ND(430)	ND(3500)	ND(410)	TR(460)	ND(12000)	ND(12000)	TR(830)	ND(1800)
1,2,4-Trichlorobenzene	ND(660)	ND(3400)	ND(5200)	ND(430)	ND(3500)	ND(410)	ND(460)	ND(12000)	ND(12000)	ND(830)	ND(1800)

SAMPLE DESIGNATION	SIT4 TP102 S2	SIT4 TP13 S2	SIT4 TP101 S2	SIT4 TP16 S3	SIT4 TP18 S2	SIT4 TP20 S3	SIT5 TP3 S1	SIT5 TP6 S2	SIT5 TP8 S2	SIT5 TP11 S1	SIT5 TP12 S2
SAMPLING DATE	11/26/1986	11/26/1986	11/26/1988	11/26/1986	11/26/1986	11/26/1986	11/20/1986	11/20/1986	11/20/1986	11/24/1986	11/24/1986
SAMPLE DEPTH (FT.)	4	4	4	10	5	37874	37884	6-6.5	4-4.5	1.5	4.5-5
EXPLORATION TYPE	SIT4 TP11 S2	TEST PIT	SIT4 TP13 S2	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT
SOIL TYPE	DUPLICATE	FILL	DUPLICATE	SAND	PEAT	SAND	FILL	PEAT	FILL	FILL	PEAT
TOTAL METALS (mg/kg)											
Antimony	ND(2.1)	ND(3.2)	ND(2.6)	ND(1.2)	ND(1.7)	ND(1.2)	ND(1.1)	ND(5.2)	ND(2)	ND(1.3)	ND(3.6)
Arsenic	16	12	8.2	5.6	6.9	15	5	ND(4.3)	9.2	8.2	11
Barium	-	-	-	-	-	-	-	-	-	-	-
Beryllium	0.67	0.45	0.29	ND(0.12)	ND(0.17)	ND(0.12)	0.3	0.6	1.4	0.5	2.8
Cadmium	0.77	ND(0.64)	ND(0.53)	ND(0.23)	ND(0.34)	ND(0.24)	ND(0.22)	1	0.9	0.5	0.8
Chromium	17	8	5.8	5.5	5.2	5.6	10	6.2	11	5.9	13
Copper	41	23	14	5.2	24	4.6	29	19	32	140	38
Iron	-	-	-	-	-	-	-	-	-	-	-
Lead	120	13	6.1	2.5	71	ND(2.4)	87	26	85	2370	48
Mercury	0.2	0.12	ND(0.061)	ND(0.024)	0.18	ND(0.015)	0.3	0.23	0.25	0.1	0.31
Nickel	16	5.4	5.1	4.5	4.4	7.2	8.1	8	8.9	10	11
Selenium	2.9	ND(3)	3.6	ND(0.85)	ND(1.3)	ND(0.81)	ND(0.84)	ND(4.3)	ND(2.1)	ND(1.1)	4
Silver	ND(0.42)	ND(0.64)	ND(0.53)	ND(0.23)	1.7	ND(0.24)	ND(0.22)	ND(1.3)	ND(0.41)	0.3	ND(0.72)
Thallium	ND(2)	ND(3)	ND(2.7)	ND(0.85)	ND(1.3)	ND(0.81)	ND(0.84)	ND(4.3)	ND(2.1)	ND(1.1)	ND(2.5)
Zinc	630	42	20	11	28	12	71	64	570	350	510
EP TOXICITY	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
OIL & GREASE (mg/kg)	3940	11000	7140	325	24100	145	2340	24300	5250	1940	8240
PETROLEUM HYDROCARBON IDENTIFICATION (mg/kg)											
Quantity	11	94	136	3.1	900	1.8	20	18	8.7	112	10
Type	FUEL OIL WITH TRACE COAL TAR	FUEL OIL WITH COAL TAR	FUEL OIL WITH TRACE COAL TAR	ND	GASOLINE WITH COAL TAR WITH FUEL OIL	ND	ND	ND	ND	LUBRICATING OIL	ND
WASTE CHARACTERISTICS											
Total Cyanide (mg/kg)	ND(0.32)	ND(0.96)	ND(0.85)	ND(0.28)	ND(0.82)	ND(0.31)	ND(0.32)	ND(1.23)	ND(0.48)	2.6	ND(0.95)
Total Phenolics (mg/kg)	0.3	7.4	3.1	ND(0.12)	16.8	ND(0.12)	ND(0.12)	0.5	0.5	0.3	ND(0.38)
Formaldehyde (mg/kg)	43	4.2	320	3.8	120	220	2.7	1.5	ND(0.4)	0.6	1.3
Sulfate (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Corrosivity (pH)	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance (ushos/cm)	-	-	-	-	-	-	-	-	-	-	-
Biological Oxygen Demand (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Chloride (mg/kg)	-	-	-	-	-	-	-	-	-	-	-

ABBREVIATIONS:

- : Not analyzed; or invalid data as determined by the validation process.

ND: Compound not detected, detection limit not available.

TR: Compound detected below laboratory reporting limit; detection limit not available.

ND(2.5): Not detected; number in parentheses is equal to the laboratory Reporting Limit

A 54: Concentration is Approximate as determined by validation process.

TR (460): Trace Concentration. Compound detected at concentrations below the reporting limit; number in parentheses is equal to the laboratory reporting limit. detection limit.

PASS: Extracted metals not detected or detected below toxic levels.

VOCs: Volatile Organic Compounds

ABNs: Acid/Base/Neutral Extractables

NOTES:

1. This table includes only those compounds detected on the dates indicated.
2. " * " indicates trans 1,2-Dichlorothene and cis 1,2-dichloroethene grouped and reported as 1,2 Dichlorothene
3. " ** " indicates possible contribution from ERCO matrix spiking solution.

TABLE IV
SUMMARY OF OHM SOIL QUALITY DATA - 1984 to 1988
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

SAMPLE DESIGNATION	SIT5 TP14 S2	SIT5 TP15 S2	SIT5 TP101 S2	SIT5 TP16 S3	SIT5 TP17 S3	SIT5 TP102 S3	SIT5 TP19 S3	SIT6 TP1 S2	SIT6 TP2 S2	SIT6 TP3 S2	SIT6 TP4 S2
SAMPLING DATE	11/24/1986	11/24/1986	11/24/1986	11/24/1986	11/24/1986	11/24/1986	11/24/1986	10/21/1987	10/22/1987	10/22/1987	10/21/1987
SAMPLE DEPTH (FT.)	4-4.5	4-4.5	4-4.5	11	10-10.5	10-10.5	7.5-8	8.5	7.5	8.5	7
EXPLORATION TYPE	TEST PIT	TEST PIT	SIT5 TP15 S2	TEST PIT	TEST PIT	SIT5 TP17 S3	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT
SOIL TYPE	FILL	FILL	DUPLICATE	SAND	SAND	DUPLICATE	SAND	SAND	SAND	SAND	SAND
VOCs (ug/kg)											
Acetone	ND(120)	ND(120)	*150 A*	ND(120)	ND(120)	ND(120)	ND(120)	ND(25000)	ND(25000)	ND(25000)	ND(25000)
Benzene	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(300)	ND(300)	ND(300)	ND(300)
Bromodichloromethane	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(110)	ND(110)	ND(110)	ND(110)
2-Butanone	ND(25)	ND(25)	*40 A*	ND(25)	ND(25)	ND(25)	ND(25)	ND(1500)	ND(1500)	ND(1500)	ND(1500)
Carbon Disulfide	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(1000)	ND(1000)	ND(1000)	ND(1000)
Carbon Tetrachloride	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(140)	ND(140)	ND(140)	ND(140)
Chlorobenzene	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(300)	ND(300)	ND(300)	ND(300)
Chloroform	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(80)	ND(80)	ND(80)	ND(80)
Chloromethane	ND(12)	ND(12)	ND(12)	ND(12)	ND(12)	ND(12)	ND(12)	ND(400)	ND(400)	ND(400)	ND(400)
1,1-Dichloroethane	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(235)	ND(235)	ND(235)	ND(235)
1,2-Dichloroethane	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(140)	ND(140)	ND(140)	ND(140)
1,1-Dichloroethylene	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(140)	ND(140)	ND(140)	ND(140)
1,2-Dichloroethylene	-	-	-	-	-	-	-	ND(80)	ND(80)	ND(80)	ND(80)
Trans-1,2-Dichloroethylene	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(80)	ND(80)	ND(80)	ND(80)
1,2-Dichloropropane	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(300)	ND(300)	ND(300)	ND(300)
Ethylbenzene	*9.2 A*	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(500)	ND(500)	ND(500)	ND(500)
2-Hexanone	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(1000)	ND(1000)	ND(1000)	ND(1000)
Methylene Chloride	ND(12)	*17 A*	*20 A*	*19 A*	*47 A*	*22 A*	*30 A*	ND(140)	ND(140)	ND(140)	ND(140)
4-methyl-2-Pentanone	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(1000)	ND(1000)	ND(1000)	ND(1000)
2,2-Oxybis propane	-	-	-	-	-	-	-	-	-	-	-
Styrene	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(500)	ND(500)	ND(500)	ND(500)
Tetrachloroethylene	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(205)	ND(205)	ND(205)	ND(205)
1,1,1-Trichloroethane	ND(5)	ND(5)	NA	ND(5)	ND(5)	ND(5)	ND(5)	ND(190)	ND(190)	ND(190)	ND(190)
Toluene	ND(5)	ND(5)	*6.1 A*	ND(5)	ND(5)	TR (5)	ND(5)	ND(300)	ND(300)	ND(300)	ND(300)
Trichloroethylene	ND(5)	ND(5)	TR (5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(95)	ND(95)	ND(95)	ND(95)
Vinyl Acetate	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(1500)	ND(1500)	ND(1500)	ND(1500)
Xylenes, mixture	*44 A*	ND(5)	*5.8 A*	ND(5)	ND(5)	ND(5)	ND(5)	ND(500)	ND(500)	ND(500)	ND(500)

SAMPLE DESIGNATION	SIT5 TP14 S2	SIT5 TP15 S2	SIT5 TP101 S2	SIT5 TP16 S3	SIT5 TP17 S3	SIT5 TP102 S3	SIT5 TP19 S3	SIT6 TP1 S2	SIT6 TP2 S2	SIT6 TP3 S2	SIT6 TP4 S2
SAMPLING DATE	11/24/1986	11/24/1986	11/24/1986	11/24/1986	11/24/1986	11/24/1986	11/24/1986	10/21/1987	10/22/1987	10/22/1987	10/21/1987
SAMPLE DEPTH (FT.)	4-4.5	4-4.5	4-4.5	11	10-10.5	10-10.5	7.5-8	8.5	7.5	8.5	7
EXPLORATION TYPE	TEST PIT	TEST PIT	SIT5 TP15 S2	TEST PIT	TEST PIT	SIT5 TP17 S3	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT
SOIL TYPE	FILL	FILL	DUPLICATE	SAND	SAND	DUPLICATE	SAND	SAND	SAND	SAND	SAND
ABNs (ug/kg)											
Acenaphthene	ND(7700)	2300	TR(1500)	ND(410)	-	ND(400)	ND(390)	ND(95)	ND(95)	ND(95)	ND(95)
Acenaphthylene	ND(7700)	ND(1700)	ND(1500)	ND(410)	ND(360)	ND(400)	ND(390)	ND(175)	ND(175)	ND(175)	ND(175)
Anthracene	ND(7700)	5100	TR(1500)	ND(410)	ND(360)	ND(400)	ND(390)	380	ND(95)	107	ND(95)
Benzo(a)anthracene	ND(7700)	13000	TR(1500)	ND(410)	ND(360)	ND(400)	ND(390)	ND(390)	ND(390)	ND(390)	*610 A*
Benzo(a)pyrene	ND(7700)	9000	TR(1500)	ND(410)	ND(360)	ND(400)	ND(390)	ND(125)	ND(125)	ND(125)	ND(125)
Benzo(b,k)fluoranthene	ND(7700)	13000	TR(1500)	ND(410)	ND(360)	ND(400)	ND(390)	ND(125)	ND(125)	126	*210 A*
Benzo(g,h,i)perylene	ND(7700)	6600	TR(1500)	ND(410)	ND(360)	ND(400)	ND(390)	ND(205)	ND(205)	ND(205)	ND(205)
Bis(2-ethylhexyl)phthalate	ND(7700)	-	4200	-	-	-	-	ND(125)	ND(125)	-	1575
Butylbenzylphthalate	ND(7700)	ND(1700)	ND(1500)	ND(410)	ND(360)	ND(400)	ND(390)	ND(125)	ND(125)	ND(125)	ND(125)
p-Chloro-m-cresol	ND(7700)	ND(1700)	ND(1500)	ND(410)	-	ND(400)	ND(390)	ND(150)	ND(150)	ND(150)	ND(150)
2-Chlorophenol	ND(7700)	ND(1700)	ND(1500)	ND(410)	-	ND(400)	ND(390)	ND(165)	ND(165)	ND(165)	ND(165)
Chrysene	ND(7700)	10000	TR(1500)	ND(410)	ND(360)	ND(400)	ND(390)	ND(125)	ND(125)	ND(125)	ND(125)
Dibenzo(a,h)anthracene	ND(7700)	2000	ND(1500)	ND(410)	ND(360)	ND(400)	ND(390)	ND(125)	ND(125)	ND(125)	ND(125)
1,2-Dichlorobenzene	ND(7700)	ND(1700)	ND(1500)	ND(410)	ND(360)	ND(400)	ND(390)	ND(95)	ND(95)	ND(95)	ND(95)
1,4-Dichlorobenzene	ND(7700)	ND(1700)	ND(1500)	ND(410)	-	ND(400)	ND(390)	ND(220)	ND(220)	ND(220)	ND(220)
Diethylphthalate	ND(7700)	ND(1700)	ND(1500)	ND(410)	ND(360)	ND(400)	ND(390)	ND(1100)	ND(1100)	ND(1100)	ND(1100)
2,4-Dimethylphenol	ND(7700)	ND(1700)	ND(1500)	ND(410)	ND(360)	ND(400)	ND(390)	ND(135)	ND(135)	ND(135)	ND(135)
Dimethylphthalate	ND(7700)	ND(1700)	ND(1500)	ND(410)	ND(360)	ND(400)	ND(390)	ND(80)	ND(80)	ND(80)	ND(80)
Di-n-butyl phthalate	ND(7700)	ND(1700)	ND(1500)	ND(410)	ND(360)	ND(400)	ND(390)	1145	3490	4870	4845
Di-n-octyl phthalate	ND(7700)	ND(1700)	ND(1500)	ND(410)	ND(360)	ND(400)	ND(390)	ND(125)	ND(125)	ND(125)	ND(125)
2,4-Dinitrophenol	ND(7700)	ND(1700)	ND(1500)	ND(410)	-	ND(400)	ND(390)	ND(2100)	ND(2100)	ND(2100)	ND(2100)
2,4-Dinitrotoluene	ND(7700)	ND(1700)	ND(1500)	ND(410)	-	ND(400)	ND(390)	ND(285)	ND(285)	ND(285)	ND(285)
Fluoranthene	ND(7700)	27000	2000	ND(410)	ND(360)	ND(400)	ND(390)	ND(110)	ND(110)	ND(110)	ND(110)
Fluorene	ND(7700)	2700	TR(1500)	ND(410)	ND(360)	ND(400)	ND(390)	ND(95)	ND(95)	ND(95)	240
Indeno(1,2,3-cd)pyrene	ND(7700)	6700	TR(1500)	ND(410)	ND(360)	ND(400)	ND(390)	ND(185)	ND(185)	ND(185)	ND(185)
Isophorone	ND(7700)	ND(1700)	ND(1500)	ND(410)	ND(360)	ND(400)	ND(390)	ND(110)	ND(110)	ND(110)	ND(110)
Naphthalene	ND(7700)	1700	ND(1500)	ND(410)	ND(360)	ND(400)	TR(390)	230	ND(80)	680	4900
Nitrobenzene	ND(7700)	ND(1700)	ND(1500)	ND(410)	ND(360)	ND(400)	ND(390)	ND(95)	ND(95)	ND(95)	ND(95)
n-Nitrosodi-n-propylamine	ND(7700)	ND(1700)	ND(1500)	ND(410)	-	ND(400)	ND(390)	ND(130)	ND(130)	ND(130)	ND(130)
n-Nitrosodiphenylamine	-	-	-	-	-	-	-	ND(95)	ND(95)	ND(95)	ND(95)
Pentachlorophenol	ND(7700)	ND(1700)	ND(1500)	ND(410)	-	ND(400)	ND(390)	ND(180)	ND(180)	ND(180)	ND(180)
Phenanthrene	TR(7700)	30000	TR(1500)	ND(410)	ND(360)	ND(400)	ND(390)	A 360	ND(270)	ND(270)	930
Phenol	ND(7700)	ND(1700)	ND(1500)	ND(410)	-	ND(400)	ND(390)	ND(75)	189	ND(75)	ND(75)
Pyrene	ND(7700)	19000	1700	ND(410)	-	ND(400)	ND(390)	ND(95)	ND(95)	ND(95)	1300
1,2,4-Trichlorobenzene	ND(7700)	ND(1700)	ND(1500)	ND(410)	-	ND(400)	ND(390)	ND(95)	ND(95)	ND(95)	ND(95)

SAMPLE DESIGNATION	SIT5 TP14 S2	SIT5 TP15 S2	SIT5 TP101 S2	SIT5 TP16 S3	SIT5 TP17 S3	SIT5 TP102 S3	SIT5 TP19 S3	SIT6 TP1 S2	SIT6 TP2 S2	SIT6 TP3 S2	SIT6 TP4 S2
SAMPLING DATE	11/24/1986	11/24/1986	11/24/1986	11/24/1986	11/24/1986	11/24/1986	11/24/1986	10/21/1987	10/22/1987	10/22/1987	10/21/1987
SAMPLE DEPTH (FT.)	4-4.5	4-4.5	4-4.5	11	10-10.5	10-10.5	7.5-8	8.5	7.5	8.5	7
EXPLORATION TYPE	TEST PIT	TEST PIT	SIT5 TP15 S2	TEST PIT	TEST PIT	SIT5 TP17 S3	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT
SOIL TYPE	FILL	FILL	DUPLICATE	SAND	SAND	DUPLICATE	SAND	SAND	SAND	SAND	SAND
TOTAL METALS (mg/kg)											
Antimony	ND(1.1)	ND(1.9)	ND(1.7)	ND(1)	ND(1.1)	ND(1)	ND(1.1)	ND(10)	ND(10)	ND(10)	ND(10)
Arsenic	8.6	14	20	11	18	18	8.1	2	2.07	2.9	3.89
Barium	-	-	-	-	-	-	-	14.2	14.3	16.2	18.9
Beryllium	0.2	ND(0.19)	ND(0.17)	0.1	ND(0.11)	ND(0.1)	ND(0.11)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)
Cadmium	ND(0.21)	0.8	0.5	ND(0.2)	ND(0.23)	ND(0.2)	ND(0.21)	0.6	1.2	1.2	0.6
Chromium	13	12	12	7.2	7.4	7.5	8.7	7.9	9.3	8	8
Copper	11	31	23	5.8	6.3	6	7.1	4.7	5	7.8	4.9
Iron	-	-	-	-	-	-	-	-	-	-	-
Lead	7.7	260	220	2	4.2	4.3	2.5	1	2.2	8.6	3.1
Mercury	ND(0.022)	0.32	0.4	ND(0.019)	ND(0.022)	ND(0.018)	ND(0.017)	ND(0.114)	ND(0.114)	ND(0.114)	ND(0.114)
Nickel	12	13	9.3	6.1	8.7	9.5	10	6.3	6.2	5.8	5.3
Selenium	ND(0.54)	2.7	1.8	ND(1)	ND(0.92)	ND(1)	ND(1.1)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Silver	ND(0.21)	ND(0.38)	ND(0.35)	ND(0.2)	ND(0.23)	ND(0.2)	ND(0.21)	ND(0.2)	0.4	0.2	ND(0.2)
Thallium	ND(0.54)	ND(1.8)	ND(1.4)	ND(1)	ND(0.92)	ND(1)	ND(1.1)	ND(10)	ND(10)	ND(10)	ND(10)
Zinc	130	410	330	18	18	17	20	11.3	14.9	40.9	42.8
EP TOXICITY	PASS	PASS	PASS	PASS	PASS	PASS	PASS	-	-	-	PASS
OIL & GREASE (mg/kg)	4730	2480	7000	ND(100)	166	ND(100)	116	13900	2525	7210	18300
PETROLEUM HYDROCARBON IDENTIFICATION (mg/kg)											
Quantity	361	62	18	5	2.1	2	1.5	328	570	2051	295
Type	FUEL OIL	FUEL OIL WITH PYROLYSIS	ND	ND	ND	ND	ND	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6
WASTE CHARACTERISTICS											
Total Cyanide (mg/kg)	ND(0.26)	1.3	ND(0.67)	ND(0.29)	ND(0.3)	ND(0.3)	ND(0.29)	13.25	ND(3)	16.2	26.3
Total Phenolics (mg/kg)	ND(0.1)	0.7	3.3	ND(0.12)	ND(0.12)	ND(0.13)	ND(0.12)	ND(1.25)	ND(1.25)	ND(1.25)	28.4
Formaldehyde (mg/kg)	1.7	1.8	1.8	0.6	0.7	0.9	0.7	ND(0.5)	ND(0.5)	ND(0.5)	10.71
Sulfate (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Corrosivity (pH)	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance (ushos/cm)	-	-	-	-	-	-	-	-	-	-	-
Biological Oxygen Demand (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Chloride (mg/kg)	-	-	-	-	-	-	-	-	-	-	-

ABBREVIATIONS:

- - : Not analyzed; or invalid data as determined by the validation process.
ND: Compound not detected, detection limit not available.
TR: Compound detected below laboratory reporting limit; detection limit not available.
ND(2.5): Not detected, number in parentheses is equal to the laboratory Reporting Limit
A 54: Concentration is Approximate as determined by validation process.
TR (460): Trace Concentration. Compound detected at concentrations below the reporting limit; number in parentheses is equal to the laboratory reporting limit. detection limit.
PASS: Extracted metals not detected or detected below toxic levels.
VOCs: Volatile Organic Compounds
ABNs: Acid/Base/Neutral Extractables

NOTES:

1. This table includes only those compounds detected on the dates indicated.
2. " * " indicates trans 1,2-Dichlorothene and cis 1,2-dichloroethene grouped and reported as 1,2-Dichlorothene
3. " ** " indicates possible contribution from ERCO matrix spiking solution.

TABLE IV
SUMMARY OF OHM SOIL QUALITY DATA - 1984 to 1988
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

SAMPLE DESIGNATION	SIT6 TP5 S1	SIT6 TP6 S2	SIT6 TP7 S2	SIT6 TP8 S2	SIT6 TP108 S2	SIT6 TP9 S2	SIT7 TP1 S3	SIT7 TP2 S1	SIT7 TP3 S2	SIT7 TP4 S3	SIT7 TP104 S3
SAMPLING DATE	10/21/1987	10/21/1987	10/21/1987	10/21/1987	10/21/1987	10/21/1987	10/20/1987	10/20/1987	10/20/1987	10/20/1987	10/20/1987
SAMPLE DEPTH (FT.)	7.5	7.5	12	6.5	6.5	10	11	1.5	5.5	11	11
EXPLORATION TYPE	TEST PIT	TEST PIT	TEST PIT	TEST PIT	SIT6 TP8 S2	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	SIT7 TP4 S3
SOIL TYPE	PEAT	FILL	SAND	SAND	DUPLICATE	SAND	SAND	FILL	FILL	SAND	DUPLICATE
VOCs (ug/kg)											
Acetone	ND(25000)	ND(25000)	ND(25000)	ND(25000)	ND(25000)	ND(25000)	ND(25000)	ND(25000)	ND(25000)	ND(25000)	ND(25000)
Benzene	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)
Bromodichloromethane	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)
2-Butanone	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)
Carbon Disulfide	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)
Carbon Tetrachloride	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)
Chlorobenzene	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)
Chloroform	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)
Chloromethane	ND(400)	ND(400)	ND(400)	ND(400)	ND(400)	ND(400)	ND(400)	ND(400)	ND(400)	ND(400)	ND(400)
1,1-Dichloroethane	ND(235)	ND(235)	ND(235)	ND(235)	ND(235)	ND(235)	ND(235)	ND(235)	ND(235)	ND(235)	ND(235)
1,2-Dichloroethane	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)
1,1-Dichloroethylene	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)
1,2-Dichloroethylene	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)
Trans-1,2-Dichloroethylene	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)
1,2-Dichloropropane	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)
Ethylbenzene	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)
2-Hexanone	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)
Methylene Chloride	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)
4-methyl-2-Pentanone	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)
2,2-Oxybis propane	-	-	-	-	-	-	-	-	-	-	-
Styrene	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)
Tetrachloroethylene	ND(205)	ND(205)	ND(205)	ND(205)	ND(205)	ND(205)	ND(205)	ND(205)	ND(205)	ND(205)	ND(205)
1,1,1-Trichloroethane	ND(190)	ND(190)	ND(190)	ND(190)	ND(190)	ND(190)	ND(190)	ND(190)	ND(190)	ND(190)	ND(190)
Toluene	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)
Trichloroethylene	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)
Vinyl Acetate	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)
Xylenes, mixture	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)

SAMPLE DESIGNATION	SIT6 TP5 S1	SIT6 TP8 S2	SIT6 TP7 S2	SIT6 TP8 S2	SIT6 TP108 S2	SIT6 TP9 S2	SIT7 TP1 S3	SIT7 TP2 S1	SIT7 TP3 S2	SIT7 TP4 S3	SIT7 TP104 S3
SAMPLING DATE	10/21/1987	10/21/1987	10/21/1987	10/21/1987	10/21/1987	10/21/1987	10/20/1987	10/20/1987	10/20/1987	10/20/1987	10/20/1987
SAMPLE DEPTH (FT.)	7.5	7.5	12	6.5	6.5	10	11	1.5	6.5	11	11
EXPLORATION TYPE	TEST PIT	TEST PIT	TEST PIT	TEST PIT	SIT6 TP8 S2	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	SIT7 TP4 S3
SOIL TYPE	PEAT	FILL	SAND	SAND	DUPLICATE	SAND	SAND	FILL	FILL	SAND	DUPLICATE
ABNs (ug/kg)											
Acenaphthene	210	370	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	*180 A*	*120 A*	ND(95)	ND(95)
Acenaphthylene	ND(175)	ND(175)	ND(175)	ND(175)	ND(175)	ND(175)	ND(175)	ND(175)	ND(175)	ND(175)	ND(175)
Anthracene	410	660	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	390	220	ND(95)	ND(95)
Benzo(a)anthracene	*700 A*	1400	ND(390)	ND(390)	ND(390)	ND(390)	ND(390)	1100	980	ND(390)	ND(390)
Benzo(a)pyrene	430	1100	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	1300	640	ND(125)	ND(125)
Benzo(b,k)fluoranthene	1300	2400	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	1900	1300	ND(125)	ND(125)
Benzo(g,h,i)perylene	430	520	ND(205)	ND(205)	ND(205)	ND(205)	ND(205)	ND(205)	*490 A*	ND(205)	ND(205)
Bis(2-ethylhexyl)phthalate	-	-	-	-	-	-	-	-	-	-	-
Butylbenzylphthalate	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)
p-Chloro-m-cresol	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)
2-Chlorophenol	ND(165)	ND(165)	ND(165)	ND(165)	ND(165)	ND(165)	ND(165)	ND(165)	ND(165)	ND(165)	ND(165)
Chrysene	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)
Dibenzo(a,h)anthracene	ND(125)	610	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)
1,2-Dichlorobenzene	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(96)	ND(95)	ND(95)	ND(95)
1,4-Dichlorobenzene	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)
Diethylphthalate	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)
2,4-Dimethylphenol	ND(135)	ND(135)	ND(135)	ND(135)	ND(135)	ND(135)	ND(135)	ND(135)	ND(135)	ND(135)	ND(135)
Dimethylphthalate	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)
Di-n-butyl phthalate	1645	1245	3000	2300	2700	3500	-	-	-	-	-
Di-n-octyl phthalate	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)
2,4-Dinitrophenol	ND(2100)	ND(2100)	ND(2100)	ND(2100)	ND(2100)	ND(2100)	ND(2100)	ND(2100)	ND(2100)	ND(2100)	ND(2100)
2,4-Dinitrotoluene	ND(285)	ND(285)	ND(285)	ND(285)	ND(285)	ND(285)	ND(285)	ND(285)	ND(285)	ND(285)	ND(285)
Fluoranthene	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	710	2600	2300	ND(110)	ND(110)
Fluorene	400	600	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	A 200	A 150	ND(95)	ND(95)
Indeno(1,2,3-cd)pyrene	600	640	ND(185)	ND(185)	ND(185)	ND(185)	ND(185)	1100	600	ND(185)	ND(185)
Isophorone	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)
Naphthalene	ND(80)	19300	ND(80)	ND(80)	ND(80)	1200	43000	7500	15000	43000	36000
Nitrobenzene	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)
n-Nitrosodi-n-propylamine	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)
n-Nitrosodiphenylamine	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)
Pentachlorophenol	ND(180)	ND(180)	ND(180)	ND(180)	ND(180)	ND(180)	ND(180)	ND(180)	ND(180)	ND(180)	ND(180)
Phenanthrene	1800	2900	ND(270)	ND(270)	ND(270)	ND(270)	630	2000	1700	ND(270)	ND(270)
Phenol	ND(75)	ND(75)	ND(75)	ND(75)	ND(75)	ND(75)	ND(75)	ND(75)	ND(75)	ND(75)	ND(75)
Pyrene	ND(95)	3000	ND(95)	ND(95)	ND(95)	ND(95)	580	2200	2200	ND(95)	ND(95)
1,2,4-Trichlorobenzene	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)

SAMPLE DESIGNATION	SIT6 TP5 S1	SIT6 TP6 S2	SIT6 TP7 S2	SIT6 TP8 S2	SIT6 TP108 S2	SIT6 TP9 S2	SIT7 TP1 S3	SIT7 TP2 S1	SIT7 TP3 S2	SIT7 TP4 S3	SIT7 TP104 S3
SAMPLING DATE	10/21/1987	10/21/1987	10/21/1987	10/21/1987	10/21/1987	10/21/1987	10/20/1987	10/20/1987	10/20/1987	10/20/1987	10/20/1987
SAMPLE DEPTH (FT.)	7.5	7.5	12	6.5	6.5	10	11	1.5	5.5	11	11
EXPLORATION TYPE	TEST PIT	TEST PIT	TEST PIT	TEST PIT	SIT6 TP8 S2	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	SIT7 TP4 S3
SOIL TYPE	PEAT	FILL	SAND	SAND	DUPLICATE	SAND	SAND	FILL	FILL	SAND	DUPLICATE
TOTAL METALS (mg/kg)											
Antimony	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Arsenic	12.7	7.4	7.81	2.53	2.53	2.33	5.28	ND(0.1)	2.75	5.46	9.02
Barium	77.2	59.4	12.5	7.8	8.2	13.4	14.7	ND(1)	16.7	29.2	40.2
Beryllium	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)
Cadmium	2.5	2.8	0.6	0.6	0.8	0.8	1.2	ND(0.2)	1.6	1.8	2.5
Chromium	11	13.7	8.2	7	7.2	8.5	9.4	ND(0.4)	10.6	17.3	24.7
Copper	77.2	46.1	5.3	2.7	2.9	6.2	6.1	ND(0.4)	9.8	17.9	33.3
Iron	-	-	-	-	-	-	-	-	-	-	-
Lead	278	239	1.6	1.8	1.8	3.8	2.2	ND(1)	13.8	2.9	53.3
Mercury	0.144	1.33	ND(0.114)	ND(0.114)	ND(0.114)	ND(0.114)	ND(0.114)	ND(0.114)	ND(0.114)	ND(0.114)	ND(0.114)
Nickel	56	12.8	7	5.8	5.4	6.8	7.4	ND(1)	7.8	10.7	14.5
Selenium	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Silver	0.8	0.5	0.2	ND(0.2)	ND(0.2)	ND(0.2)	0.2	ND(0.2)	0.2	ND(0.2)	0.2
Thallium	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Zinc	811	691	13.9	11.9	11.7	15.3	9.3	ND(0.2)	35.3	25.2	33.3
EP TOXICITY	-	PASS	-	-	-	-	-	-	PASS	-	-
OIL & GREASE (mg/kg)	26100	4510	-	21600	12600	8060	9275	-	24075	-	ND(10)
PETROLEUM HYDROCARBON IDENTIFICATION (mg/kg)											
Quantity	4726	3773	883	310	567	951	384	720	311	719	697
Type	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6
WASTE CHARACTERISTICS											
Total Cyanide (mg/kg)	82.1	8.17	ND(3)	13.4	12.8	ND(3)	ND(3)	160	2.8	ND(3)	13
Total Phenolics (mg/kg)	ND(1.25)	ND(3)	ND(1.25)	ND(1.25)	ND(1.25)	ND(1.25)	ND(1.25)	ND(1.25)	ND(1.25)	ND(1.25)	ND(1.25)
Formaldehyde (mg/kg)	ND(0.5)	ND(1.25)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Sulfate (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Corrosivity (pH)	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance (ushos/cm)	-	-	-	-	-	-	-	-	-	-	-
Biological Oxygen Demand (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Chloride (mg/kg)	-	-	-	-	-	-	-	-	-	-	-

ABBREVIATIONS:

- : Not analyzed; or invalid data as determined by the validation process.

ND: Compound not detected, detection limit not available.

TR: Compound detected below laboratory reporting limit; detection limit not available.

ND(2.5): Not detected; number in parentheses is equal to the laboratory Reporting Limit

A 54: Concentration is Approximate as determined by validation process.

TR (460): Trace Concentration. Compound detected at concentrations below the reporting limit; number in parentheses is equal to the laboratory reporting limit. detection limit.

PASS: Extracted metals not detected or detected below toxic levels

VOCs: Volatile Organic Compounds

ABNs: Acid/Base/Neutral Extractables

NOTES:

1. This table includes only those compounds detected on the dates indicated.
2. " * " indicates trans 1,2-Dichlorothene and cis 1,2-dichloroethene grouped and reported as 1,2-Dichlorothene
3. " ** " indicates possible contribution from ERCO matrix spiking solution.

TABLE IV
SUMMARY OF OHM SOIL QUALITY DATA - 1984 to 1988
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

SAMPLE DESIGNATION	SIT7 TP5 S2	TP212	TP201,TP202,TP219, TP221	TP203, TP204, TP205, TP220	TP206,TP207, TP222, TP223	TP208,TP209, TP210, TP224	TP211,TP213, TP214	TP215,TP216, TP217, TP218	TP301 S1	TP302 S3	TP388 S3
SAMPLING DATE	10/20/1987	1/23/1985	1/23/1985	1/23/1985	1/23/1985	1/23/1985	1/22/1985	1/22/1985	10/23/1987	10/23/1987	10/23/1987
SAMPLE DEPTH (FT.)	6								6	11	11
EXPLORATION TYPE	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TP 302 S3
SOIL TYPE	SAND		COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE	FILL	SAND	DUPLICATE
VOCs (ug/kg)											
Acetone	ND(25000)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25)	ND(25000)	ND(25000)	ND(25000)
Benzene	ND(300)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(300)	ND(300)	ND(300)
Bromodichloromethane	ND(110)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(110)	ND(110)	ND(110)
2-Butanone	ND(1500)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(1500)	ND(1500)	ND(1500)
Carbon Disulfide	ND(1000)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1000)	ND(1000)	ND(1000)
Carbon Tetrachloride	ND(140)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(140)	ND(140)	ND(140)
Chlorobenzene	ND(300)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(300)	ND(300)	ND(300)
Chloroform	ND(80)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(80)	ND(80)	ND(80)
Chloromethane	ND(400)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(400)	ND(400)	ND(400)
1,1-Dichloroethane	ND(235)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(235)	ND(235)	ND(235)
1,2-Dichloroethane	ND(140)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(140)	ND(140)	ND(140)
1,1-Dichloroethylene	ND(140)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(140)	ND(140)	ND(140)
1,2-Dichloroethylene	ND(80)	-	-	-	-	-	-	-	ND(80)	ND(80)	ND(80)
Trans-1,2-Dichloroethylene	ND(80)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(80)	ND(80)	ND(80)
1,2-Dichloropropane	ND(300)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(300)	ND(300)	ND(300)
Ethylbenzene	ND(500)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(360)	ND(360)	ND(360)
2-Hexanone	ND(1000)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(1000)	ND(1000)	ND(1000)
Methylene Chloride	ND(140)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(140)	ND(140)	ND(140)
4-methyl-2-Pentanone	ND(1000)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(1000)	ND(1000)	ND(1000)
2,2-Oxybis propane	-	-	-	-	-	-	-	-	-	-	-
Styrene	ND(500)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(500)	ND(500)	ND(500)
Tetrachloroethylene	ND(205)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(205)	ND(205)	ND(205)
1,1,1-Trichloroethane	ND(190)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(190)	ND(190)	ND(190)
Toluene	ND(300)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(300)	ND(300)	ND(300)
Trichloroethylene	ND(95)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(95)	ND(95)	ND(95)
Vinyl Acetate	ND(1500)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1500)	ND(1500)	ND(1500)
Xylenes, mixture	ND(500)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(500)	ND(500)	ND(500)

SAMPLE DESIGNATION	SIT7 TP5 S2	TP212	TP201,TP202,TP219, TP221	TP203, TP204, TP205, TP220	TP206,TP207, TP222, TP223	TP208,TP209, TP210, TP224	TP211,TP213, TP214	TP215,TP216, TP217, TP218	TP301 S1	TP302 S3	TP388 S3
SAMPLING DATE	10/20/1987	1/23/1985	1/23/1985	1/23/1985	1/23/1985	1/23/1985	1/22/1985	1/22/1985	10/23/1987	10/23/1987	10/23/1987
SAMPLE DEPTH (FT.)	5								6	11	11
EXPLORATION TYPE	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TP 302 S3
SOIL TYPE	SAND		COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE	FILL	SAND	DUPLICATE
ABNs (ug/kg)											
Acenaphthene	ND(95)	TR(470)	1400	TR(2300)	TR(540)	6200	ND(2000)	TR(480)	ND(95)	ND(95)	ND(95)
Acenaphthylene	ND(175)	ND(470)	TR(530)	ND(2300)	TR(540)	TR(4600)	ND(2000)	ND(480)	ND(175)	ND(175)	ND(175)
Anthracene	ND(95)	TR(470)	ND(530)	TR(2300)	TR(540)	17000	ND(2000)	TR(480)	ND(95)	ND(95)	ND(95)
Benzo(a)anthracene	ND(390)	980	6700	TR(2300)	1200	30000	TR(2000)	1000	ND(390)	ND(390)	ND(390)
Benzo(a)pyrene	ND(125)	850	5200	TR(2300)	930	24000	TR(2000)	860	270	ND(125)	ND(125)
Benzo(b,k)fluoranthene	ND(125)	1300	9000	2600	920	32000	TR(2000)	1300	490	ND(125)	ND(125)
Benzo(g,h,i)perylene	ND(205)	530	2100	TR(2300)	550	15000	TR(2000)	490	ND(205)	ND(205)	ND(205)
Bis(2-ethylhexyl)phthalate	-	ND(470)	4900	TR(2300)	TR(540)	ND(4600)	ND(2000)	TR(480)	ND(125)	ND(125)	ND(125)
Butylbenzylphthalate	ND(125)	ND(470)	ND(530)	ND(2300)	ND(540)	ND(4600)	ND(2000)	ND(480)	ND(125)	ND(125)	ND(125)
p-Chloro-m-cresol	ND(150)	ND(470)	ND(530)	ND(2300)	ND(540)	ND(4600)	ND(2000)	ND(480)	ND(150)	ND(150)	ND(150)
2-Chlorophenol	ND(165)	ND(470)	ND(530)	ND(2300)	ND(540)	ND(4600)	ND(2000)	ND(480)	ND(165)	ND(165)	ND(165)
Chrysene	ND(125)	940	5400	TR(2300)	990	25000	TR(2000)	900	ND(125)	ND(125)	ND(125)
Dibenzo(a,h)anthracene	ND(125)	TR(470)	1400	ND(2300)	TR(540)	4800	ND(2000)	TR(480)	ND(125)	ND(125)	ND(125)
1,2-Dichlorobenzene	ND(95)	ND(470)	ND(530)	ND(2300)	ND(540)	ND(4600)	ND(2000)	ND(480)	ND(95)	ND(95)	ND(95)
1,4-Dichlorobenzene	ND(220)	ND(470)	ND(530)	ND(2300)	ND(540)	ND(4600)	ND(2000)	ND(480)	ND(220)	ND(220)	ND(220)
Diethylphthalate	ND(1100)	ND(470)	ND(530)	ND(2300)	ND(540)	ND(4600)	ND(2000)	ND(480)	ND(1100)	ND(1100)	ND(1100)
2,4-Dimethylphenol	ND(135)	ND(470)	ND(530)	ND(2300)	ND(540)	ND(4600)	ND(2000)	ND(480)	ND(135)	ND(135)	ND(135)
Dimethylphthalate	ND(80)	ND(470)	ND(530)	ND(2300)	ND(540)	ND(4600)	ND(2000)	ND(480)	ND(80)	ND(80)	ND(80)
Di-n-butyl phthalate	-	TR(470)	ND(530)	ND(2300)	ND(540)	ND(4600)	ND(2000)	ND(480)	ND(125)	ND(125)	ND(125)
Di-n-octyl phthalate	ND(125)	TR(470)	TR(530)	ND(2300)	ND(540)	ND(4600)	ND(2000)	TR(480)	ND(125)	ND(125)	ND(125)
2,4-Dinitrophenol	ND(2100)	ND(470)	ND(530)	ND(2300)	ND(540)	ND(4600)	ND(2000)	ND(480)	ND(2100)	ND(2100)	ND(2100)
2,4-Dinitrotoluene	ND(285)	ND(470)	ND(530)	ND(2300)	ND(540)	ND(4600)	ND(2000)	ND(480)	ND(285)	ND(285)	ND(285)
Fluoranthene	ND(110)	1900	10000	2800	1100	54000	2200	1700	930	ND(110)	ND(110)
Fluorene	ND(95)	TR(470)	1400	ND(2300)	TR(540)	7900	ND(2000)	TR(480)	ND(95)	ND(95)	ND(95)
Indeno(1,2,3-cd)pyrene	ND(185)	550	3200	TR(2300)	580	16000	TR(2000)	510	ND(185)	ND(185)	ND(185)
Isophorone	ND(110)	ND(470)	ND(530)	ND(2300)	ND(540)	ND(4600)	ND(2000)	ND(480)	ND(110)	ND(110)	ND(110)
Naphthalene	ND(80)	TR(470)	1300	3300	2500	TR(4600)	TR(2000)	3200	ND(80)	ND(80)	ND(80)
Nitrobenzene	ND(95)	ND(470)	ND(530)	ND(2300)	ND(540)	ND(4600)	ND(2000)	ND(480)	ND(95)	ND(95)	ND(95)
n-Nitrosodi-n-propylamine	ND(130)	ND(470)	ND(530)	ND(2300)	ND(540)	ND(4600)	ND(2000)	ND(480)	ND(130)	ND(130)	ND(130)
n-Nitrosodiphenylamine	ND(95)	ND(470)	ND(530)	ND(2300)	ND(540)	ND(4600)	ND(2000)	ND(480)	ND(95)	ND(95)	ND(95)
Pentachlorophenol	ND(180)	ND(470)	ND(530)	ND(2300)	ND(540)	ND(4600)	ND(2000)	ND(480)	ND(180)	ND(180)	ND(180)
Phenanthrene	ND(270)	1400	9600	TR(2300)	770	61000	TR(2000)	2000	620	ND(270)	ND(270)
Phenol	ND(75)	ND(470)	ND(530)	ND(2300)	ND(540)	ND(4600)	ND(2000)	ND(480)	ND(75)	ND(75)	ND(75)
Pyrene	ND(95)	2100	10000	3500	1700	64000	2200	2100	830	ND(95)	ND(95)
1,2,4-Trichlorobenzene	ND(95)	ND(470)	ND(530)	ND(2300)	ND(540)	ND(4600)	ND(2000)	ND(480)	ND(95)	ND(95)	ND(95)

SAMPLE DESIGNATION	SIT7 TP5 S2	TP212	TP201,TP202,TP219, TP221	TP203, TP204, TP205, TP220	TP206,TP207, TP222, TP223	TP208,TP209, TP210, TP224	TP211,TP213, TP214	TP215,TP216, TP217, TP218	TP301 S1	TP302 S3	TP388 S3
SAMPLING DATE	10/20/1987	1/23/1985	1/23/1985	1/23/1985	1/23/1985	1/23/1985	1/22/1985	1/22/1985	10/23/1987	10/23/1987	10/23/1987
SAMPLE DEPTH (FT.)	5								8	11	11
EXPLORATION TYPE	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TP 302 S3
SOIL TYPE	SAND		COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE	FILL	SAND	DUPLICATE
TOTAL METALS (mg/kg)											
Antimony	ND(10)	ND(1.1)	ND(1.1)	ND(1.1)	ND(1)	ND(1.2)	ND(1.1)	ND(1.2)	ND(10)	ND(10)	ND(10)
Arsenic	6.76	13	13	15	8.9	13	14	15	6.5	5.2	4.4
Barium	11.5	-	-	-	-	-	-	-	21.8	7.6	7.5
Beryllium	ND(0.4)	ND(0.23)	ND(0.22)	ND(0.23)	ND(0.2)	ND(0.25)	0.28	ND(0.23)	ND(0.4)	ND(0.4)	ND(0.4)
Cadmium	1.2	ND(0.23)	26	0.38	ND(0.2)	1.4	0.68	0.38	1.4	1	1
Chromium	9.1	19	21	24	13	18	33	21	7.7	6	5.9
Copper	5.2	28	420	31	26	53	25	28	14.1	5.6	5.3
Iron	-	-	-	-	-	-	-	-	-	-	-
Lead	ND(1)	169	390	220	47	230	110	93	44	3.6	4
Mercury	ND(0.114)	0.091	0.26	0.25	0.2	0.23	0.16	0.16	ND(0.109)	ND(0.109)	ND(0.109)
Nickel	8.2	12	13	12	8.9	12	17	13	6.3	7.4	6.9
Selenium	ND(0.2)	ND(1.1)	ND(1.2)	ND(1.1)	ND(1)	ND(1.2)	ND(1.1)	ND(1.2)	ND(0.2)	ND(0.2)	ND(0.2)
Silver	0.2	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.2)	ND(0.24)	ND(0.23)	ND(0.23)	ND(0.2)	ND(0.2)	ND(0.2)
Thallium	ND(10)	ND(1.1)	ND(1.2)	ND(1.1)	ND(1)	ND(1.2)	ND(1.1)	ND(1.2)	ND(10)	ND(10)	ND(10)
Zinc	8.5	83	3430	250	95	430	211	94	69.4	13.4	12.9
EP TOXICITY	PASS	-	-	-	-	-	-	-	-	-	-
OIL & GREASE (mg/kg)	-	-	-	-	-	-	-	-	-	602	1139
PETROLEUM HYDROCARBON IDENTIFICATION (mg/kg)											
Quantity	207	-	-	-	-	-	-	-	-	598	1048
Type	FUEL OIL #6	-	-	-	-	-	-	-	-	FUEL OIL #6	FUEL OIL #6
WASTE CHARACTERISTICS											
Total Cyanide (mg/kg)	11.9	ND(0.29)	ND(0.3)	ND(0.29)	ND(0.27)	ND(0.31)	0.49	ND(0.3)	ND(3)	ND(3)	11.3
Total Phenolics (mg/kg)	ND(1.25)	ND(0.12)	ND(0.12)	ND(0.12)	ND(0.11)	0.54	ND(0.12)	ND(0.12)	ND(1.25)	ND(1.25)	ND(1.25)
Formaldehyde (mg/kg)	ND(0.5)	4.4	15.6	ND	9	15.1	ND	9.8	ND(0.5)	ND(0.5)	ND(0.5)
Sulfate (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Corrosivity (pH)	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance (ushos/cm)	-	-	-	-	-	-	-	-	-	-	-
Biological Oxygen Demand (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Chloride (mg/kg)	-	-	-	-	-	-	-	-	-	-	-

ABBREVIATIONS:

- : Not analyzed; or invalid data as determined by the validation process.

ND: Compound not detected, detection limit not available.

TR: Compound detected below laboratory reporting limit; detection limit not available.

ND(2.5): Not detected; number in parentheses is equal to the laboratory Reporting Limit

A 54: Concentration is Approximate as determined by validation process.

TR (460): Trace Concentration. Compound detected at concentrations below the reporting limit, number in parentheses is equal to the laboratory reporting limit, detection limit.

PASS: Extracted metals not detected or detected below toxic levels.

VOCs: Volatile Organic Compounds

ABNs: Acid/Base/Neutral Extractables

NOTES:

1. This table includes only those compounds detected on the dates indicated.
2. " " indicates trans 1,2-Dichlorothene and cis 1,2-dichloroethene grouped and reported as 1,2-Dichlorothene
3. " " indicates possible contribution from ERCO matrix spiking solution.

TABLE IV
SUMMARY OF OHM SOIL QUALITY DATA - 1984 to 1988
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

SAMPLE DESIGNATION	TP303 S2	TP305 S1	TP306 S1	TP307 S1	TP385 S1	TP308 S1	TP309 S1	TP310 S1	TP311 S1	TP312 S1	TP313 S2
SAMPLING DATE	10/23/1987	10/23/1987	10/23/1987	10/22/1987	10/22/1987	10/22/1987	10/22/1987	10/22/1987	10/22/1987	10/22/1987	10/20/1987
SAMPLE DEPTH (FT.)	4	8.5	1.5	6.5	6.5	2.5	6	5.5	9	8	13
EXPLORATION TYPE	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TP307 S1	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT
SOIL TYPE	FILL	SAND	FILL	FILL	DUPLICATE	FILL	FILL	FILL	SAND	SAND	SAND
VOCs (ug/kg)											
Acetone	ND(25000)	ND(25000)	ND(25000)	ND(25000)	ND(25000)	ND(25000)	ND(25000)	ND(25000)	ND(25000)	ND(25000)	ND(25000)
Benzene	1300	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)
Bromodichloromethane	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)
2-Butanone	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)
Carbon Disulfide	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)
Carbon Tetrachloride	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)
Chlorobenzene	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)
Chloroform	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)
Chloromethane	ND(400)	ND(400)	ND(400)	ND(400)	ND(400)	ND(400)	ND(400)	ND(400)	ND(400)	ND(400)	ND(400)
1,1-Dichloroethane	ND(235)	ND(235)	ND(235)	ND(235)	ND(235)	ND(235)	ND(235)	ND(235)	ND(235)	ND(235)	ND(235)
1,2-Dichloroethane	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)
1,1-Dichloroethylene	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)
1,2-Dichloroethylene	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)
Trans-1,2-Dichloroethylene	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)
1,2-Dichloropropane	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)
Ethylbenzene	ND(360)	ND(360)	ND(360)	ND(360)	ND(360)	ND(360)	ND(360)	*550 A*	ND(360)	ND(360)	ND(360)
2-Hexanone	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)
Methylene Chloride	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)
4-methyl-2-Pentanone	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)
2,2-Oxybis propane	-	-	-	-	-	-	-	-	-	-	-
Styrene	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)
Tetrachloroethylene	ND(205)	ND(205)	ND(205)	ND(205)	ND(205)	ND(205)	ND(205)	ND(205)	ND(205)	ND(205)	ND(205)
1,1,1-Trichloroethane	ND(190)	ND(190)	ND(190)	ND(190)	ND(190)	ND(190)	ND(190)	ND(190)	ND(190)	ND(190)	ND(190)
Toluene	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)
Trichloroethylene	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)
Vinyl Acetate	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)
Xylenes, mixture	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)

SAMPLE DESIGNATION	TP303 S2	TP305 S1	TP306 S1	TP307 S1	TP385 S1	TP308 S1	TP309 S1	TP310 S1	TP311 S1	TP312 S1	TP313 S2
SAMPLING DATE	10/23/1987	10/23/1987	10/23/1987	10/22/1987	10/22/1987	10/22/1987	10/22/1987	10/22/1987	10/22/1987	10/22/1987	10/20/1987
SAMPLE DEPTH (FT.)	4	8.5	1.5	6.5	6.5	2.5	8	5.5	9	8	13
EXPLORATION TYPE	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TP307 S1	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT
SOIL TYPE	FILL	SAND	FILL	FILL	DUPLICATE	FILL	FILL	FILL	SAND	SAND	SAND
ABNs (ug/kg)											
Acenaphthene	*140 A*	ND(95)	*100 A*	1500	2130	ND(95)	-	-	-	-	ND(95)
Acenaphthylene	ND(175)	ND(175)	ND(175)	ND(175)	ND(175)	ND(176)	-	-	-	-	ND(175)
Anthracene	320	ND(95)	320	1340	4430	ND(95)	-	-	-	-	ND(95)
Benzo(a)anthracene	1200	ND(390)	ND(390)	1480	4670	ND(390)	-	-	-	-	ND(390)
Benzo(a)pyrene	620	ND(125)	660	655	3490	ND(125)	-	-	-	-	ND(125)
Benzo(b,k)fluoranthene	1800	ND(125)	1100	1630	12810	ND(125)	-	-	-	-	ND(125)
Benzo(g,h,i)perylene	550	ND(205)	ND(205)	662	2500	ND(205)	-	-	-	-	ND(205)
Bis(2-ethylhexyl)phthalate	ND(125)	ND(125)	ND(125)	1135	-	-	-	-	-	-	-
Butylbenzylphthalate	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	-	-	-	-	ND(125)
p-Chloro-m-cresol	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)	-	-	-	-	ND(150)
2-Chlorophenol	ND(165)	ND(165)	ND(165)	ND(165)	ND(165)	ND(165)	-	-	-	-	ND(165)
Chrysene	ND(125)	ND(125)	ND(125)	1420	5670	ND(125)	-	-	-	-	ND(125)
Dibenzo(a,h)anthracene	ND(125)	ND(125)	ND(125)	349	ND(125)	ND(125)	-	-	-	-	ND(125)
1,2-Dichlorobenzene	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	-	-	-	-	ND(95)
1,4-Dichlorobenzene	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	-	-	-	-	ND(220)
Diethylphthalate	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	ND(1100)
2,4-Dimethylphenol	ND(135)	ND(135)	ND(135)	ND(135)	ND(135)	ND(135)	-	-	-	-	ND(135)
Dimethylphthalate	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	-	-	-	-	ND(80)
Di-n-butyl phthalate	ND(125)	ND(125)	ND(125)	1625	3130	4860	-	-	-	-	2400
Di-n-octyl phthalate	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	-	-	-	-	ND(125)
2,4-Dinitrophenol	ND(2100)	ND(2100)	ND(2100)	ND(2100)	ND(2100)	ND(2100)	-	-	-	-	ND(2100)
2,4-Dinitrotoluene	ND(285)	ND(285)	ND(285)	ND(285)	ND(285)	ND(285)	-	-	-	-	ND(285)
Fluoranthene	2400	ND(110)	1800	ND(110)	6290	ND(110)	-	-	-	-	ND(110)
Fluorene	A 110	ND(95)	A 140	2180	8460	ND(95)	-	-	-	-	ND(95)
Indeno(1,2,3-cd)pyrene	870	ND(185)	ND(185)	541	2580	ND(185)	-	-	-	-	ND(185)
Isophorone	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	-	-	-	-	ND(110)
Naphthalene	730	ND(80)	ND(80)	4310	6980	174	-	-	-	-	ND(80)
Nitrobenzene	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	-	-	-	-	ND(95)
n-Nitrosodi-n-propylamine	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)	-	-	-	-	ND(130)
n-Nitrosodiphenylamine	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	-	-	-	-	ND(95)
Pentachlorophenol	ND(180)	ND(180)	ND(180)	ND(180)	ND(180)	ND(180)	-	-	-	-	ND(180)
Phenanthrene	1200	ND(270)	ND(270)	5600	24200	ND(270)	-	-	-	-	ND(270)
Phenol	ND(75)	ND(75)	ND(75)	206	188	ND(75)	-	-	-	-	ND(75)
Pyrene	2300	ND(95)	1200	3500	12700	ND(95)	-	-	-	-	ND(95)
1,2,4-Trichlorobenzene	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	-	-	-	-	ND(95)

SAMPLE DESIGNATION	TP303 S2	TP305 S1	TP306 S1	TP307 S1	TP385 S1	TP308 S1	TP309 S1	TP310 S1	TP311 S1	TP312 S1	TP313 S2
SAMPLING DATE	10/23/1987	10/23/1987	10/23/1987	10/22/1987	10/22/1987	10/22/1987	10/22/1987	10/22/1987	10/22/1987	10/22/1987	10/20/1987
SAMPLE DEPTH (FT)	4	8.5	1.5	6.5	6.5	2.5	6	5.5	9	8	13
EXPLORATION TYPE	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TP307 S1	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT
SOIL TYPE	FILL	SAND	FILL	FILL	DUPLICATE	FILL	FILL	FILL	SAND	SAND	SAND
TOTAL METALS (mg/kg)											
Antimony	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	-	-	-	-	ND(10)
Arsenic	6	4.8	5.2	6	6.8	7.4	-	-	-	-	3.94
Barium	611	11	19.1	122	486	26.5	-	-	-	-	16.7
Beryllium	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	0.4	ND(0.4)	-	-	-	-	ND(0.4)
Cadmium	5.6	1	0.6	2.6	3.7	2.6	-	-	-	-	1.6
Chromium	15.5	6.4	3.9	6.2	7.4	15.5	-	-	-	-	10.2
Copper	35.7	9.7	6.7	45.9	52.6	19.1	-	-	-	-	8.5
Iron	-	-	-	-	-	-	-	-	-	-	-
Lead	302	11.4	39.3	351	345	18.3	-	-	-	-	1
Mercury	0.569	ND(0.109)	ND(0.109)	0.229	0.137	ND(0.137)	-	-	-	-	ND(0.114)
Nickel	11.9	6	2.1	9.4	11.1	13.5	-	-	-	-	9.4
Selenium	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	-	-	-	-	ND(0.2)
Silver	ND(0.2)	ND(0.2)	ND(0.2)	0.2	0.2	0.2	-	-	-	-	ND(0.2)
Thallium	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	-	-	-	-	ND(10)
Zinc	1726	29	7.5	379	546	78.7	-	-	-	-	17.1
EP TOXICITY	-	-	-	-	-	-	-	-	-	-	-
OIL & GREASE (mg/kg)	-	ND(10)	676	79350	328	583	4166	4490	2794	748	-
PETROLEUM HYDROCARBON IDENTIFICATION (mg/kg)											
Quantity	1109	604	1759	3377	3807	1246	2378	2816	569	810	312
Type	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6
WASTE CHARACTERISTICS											
Total Cyanide (mg/kg)	ND(3)	4.8	ND(3)	A 3.66	8.76	ND(3)	-	-	-	-	ND(3)
Total Phenolics (mg/kg)	ND(1.25)	ND(1.25)	ND(1.25)	ND(1.25)	ND(1.25)	ND(1.25)	-	-	-	-	ND(1.25)
Formaldehyde (mg/kg)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	-	-	-	-	ND(0.5)
Sulfate (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Corrosivity (pH)	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance (ushos/cm)	-	-	-	-	-	-	-	-	-	-	-
Biological Oxygen Demand (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Chloride (mg/kg)	-	-	-	-	-	-	-	-	-	-	-

ABBREVIATIONS:

- : Not analyzed; or invalid data as determined by the validation process.
ND: Compound not detected, detection limit not available.
TR: Compound detected below laboratory reporting limit, detection limit not available.
ND(2.5): Not detected; number in parentheses is equal to the laboratory Reporting Limit
A 54: Concentration is Approximate as determined by validation process.
TR (460): Trace Concentration. Compound detected at concentrations below the reporting limit; number in parentheses is equal to the laboratory reporting limit detection limit.
PASS: Extracted metals not detected or detected below toxic levels.
VOCs: Volatile Organic Compounds
ABNs: Acid/Base/Neutral Extractables

NOTES:

1. This table includes only those compounds detected on the dates indicated.
2. " * " indicates trans 1,2-Dichlorothene and cis 1,2-dichloroethene grouped and reported as 1,2-Dichlorothene
3. " ** " indicates possible contribution from ERCO matrix spiking solution.

TABLE IV
SUMMARY OF OHM SOIL QUALITY DATA - 1984 to 1988
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

SAMPLE DESIGNATION	TP314 S1	TP315 S1	TP316 S1	TP318 S1	TP319 S1	TP320 S1	TP321 S1	TP322 S1	TP323 S1	TP324 S1	TP325 S1
SAMPLING DATE	9/24/1987	9/24/1987	9/24/1987	12/22/1987	12/22/1987	12/22/1987	12/22/1987	12/22/1987	12/23/1987	12/23/1987	12/23/1987
SAMPLE DEPTH (FT.)	0-6.0	0-6.0	0-6.0	7	4	3.5	4	3	2.5	3	3
EXPLORATION TYPE	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT
SOIL TYPE	MIXTURE	MIXTURE	MIXTURE	SAND	PEAT	FILL	FILL	FILL	FILL	FILL	FILL
VOCs (ug/kg)											
Acetone	ND(25000)	ND(25000)	ND(25000)	-	-	-	-	ND(25000)	ND(25000)	ND(25000)	ND(25000)
Benzene	ND(300)	ND(300)	ND(300)	-	-	-	-	ND(300)	ND(300)	ND(300)	ND(300)
Bromodichloromethane	ND(110)	ND(110)	ND(110)	-	-	-	-	ND(110)	ND(110)	ND(110)	ND(110)
2-Butanone	ND(1500)	ND(1500)	ND(1500)	-	-	-	-	ND(1500)	ND(1500)	ND(1500)	ND(1500)
Carbon Disulfide	ND(1000)	ND(1000)	ND(1000)	-	-	-	-	ND(1000)	ND(1000)	ND(1000)	ND(1000)
Carbon Tetrachloride	ND(140)	ND(140)	ND(140)	-	-	-	-	ND(140)	ND(140)	ND(140)	ND(140)
Chlorobenzene	ND(300)	ND(300)	ND(300)	-	-	-	-	ND(300)	ND(300)	ND(300)	ND(300)
Chloroform	ND(80)	ND(80)	ND(80)	-	-	-	-	ND(80)	ND(80)	ND(80)	ND(80)
Chloromethane	ND(400)	ND(400)	ND(400)	-	-	-	-	ND(400)	ND(400)	ND(400)	ND(400)
1,1-Dichloroethane	ND(235)	ND(235)	ND(235)	-	-	-	-	ND(235)	ND(235)	ND(235)	ND(235)
1,2-Dichloroethane	ND(140)	ND(140)	ND(140)	-	-	-	-	ND(140)	ND(140)	ND(140)	ND(140)
1,1-Dichloroethylene	ND(140)	ND(140)	ND(140)	-	-	-	-	ND(140)	ND(140)	ND(140)	ND(140)
1,2-Dichloroethylene	ND(80)	ND(80)	ND(80)	-	-	-	-	ND(80)	ND(80)	ND(80)	ND(80)
Trans-1,2-Dichloroethylene	ND(80)	ND(80)	ND(80)	-	-	-	-	ND(80)	ND(80)	ND(80)	ND(80)
1,2-Dichloropropane	ND(300)	ND(300)	ND(300)	-	-	-	-	ND(300)	ND(300)	ND(300)	ND(300)
Ethylbenzene	ND(360)	ND(360)	ND(360)	-	-	-	-	ND(500)	ND(500)	ND(500)	ND(500)
2-Hexanone	ND(1000)	ND(1000)	ND(1000)	-	-	-	-	ND(1000)	ND(1000)	ND(1000)	ND(1000)
Methylene Chloride	ND(140)	ND(140)	ND(140)	-	-	-	-	ND(140)	ND(140)	ND(140)	ND(140)
4-methyl-2-Pentanone	ND(1000)	ND(1000)	ND(1000)	-	-	-	-	ND(1000)	ND(1000)	ND(1000)	ND(1000)
2,2-Oxybis propane	-	-	-	-	-	-	-	-	-	-	-
Styrene	ND(500)	ND(500)	ND(500)	-	-	-	-	ND(500)	ND(500)	ND(500)	ND(500)
Tetrachloroethylene	ND(205)	ND(205)	ND(205)	-	-	-	-	ND(205)	ND(205)	ND(205)	ND(205)
1,1,1-Trichloroethane	ND(190)	ND(190)	ND(190)	-	-	-	-	ND(190)	ND(190)	ND(190)	ND(190)
Toluene	ND(300)	ND(300)	ND(300)	-	-	-	-	ND(300)	ND(300)	ND(300)	ND(300)
Trichloroethylene	ND(95)	ND(95)	ND(95)	-	-	-	-	ND(95)	ND(95)	ND(95)	ND(95)
Vinyl Acetate	ND(1500)	ND(1500)	ND(1500)	-	-	-	-	ND(1500)	ND(1500)	ND(1500)	ND(1500)
Xylenes, mixture	ND(500)	ND(500)	ND(500)	-	-	-	-	ND(500)	ND(500)	ND(500)	ND(500)

SAMPLE DESIGNATION	TP314 S1	TP315 S1	TP316 S1	TP318 S1	TP319 S1	TP320 S1	TP321 S1	TP322 S1	TP323 S1	TP324 S1	TP325 S1
SAMPLING DATE	9/24/1987	9/24/1987	9/24/1987	12/22/1987	12/22/1987	12/22/1987	12/22/1987	12/22/1987	12/23/1987	12/23/1987	12/23/1987
SAMPLE DEPTH (FT.)	0-6.0	0-6.0	0-6.0	7	4	3.5	4	3	2.5	3	3
EXPLORATION TYPE	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT
SOIL TYPE	MIXTURE	MIXTURE	MIXTURE	SAND	PEAT	FILL	FILL	FILL	FILL	FILL	FILL
ABNs (ug/kg)											
Acenaphthene	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	500	ND(95)	-	-	-	-
Acenaphthylene	ND(175)	ND(175)	ND(175)	ND(175)	ND(175)	ND(175)	ND(175)	-	-	-	-
Anthracene	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	-	-	-	-
Benzo(a)anthracene	ND(390)	*155 A*	*156 A*	ND(390)	ND(390)	1800	ND(390)	-	-	-	-
Benzo(a)pyrene	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	1000	-	-	-	-
Benzo(b,k)fluoranthene	*372 A*	*444 A*	*437 A*	ND(125)	ND(125)	ND(125)	900	-	-	-	-
Benzo(g,h,i)perylene	ND(205)	*308 A*	422	ND(205)	ND(205)	ND(205)	ND(205)	-	-	-	-
Bis(2-ethylhexyl)phthalate	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	-	-	-	-
Butylbenzylphthalate	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	-	-	-	-
p-Chloro-m-cresol	ND(150)	ND(150)	ND(150)	-	-	-	-	-	-	-	-
2-Chlorophenol	ND(165)	ND(165)	ND(165)	-	-	-	-	-	-	-	-
Chrysene	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	1800	800	-	-	-	-
Dibenzo(a,h)anthracene	*158 A*	*117 A*	*151 A*	ND(125)	ND(125)	ND(125)	ND(125)	-	-	-	-
1,2-Dichlorobenzene	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	-	-	-	-
1,4-Dichlorobenzene	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	-	-	-	-
Diethylphthalate	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-
2,4-Dimethylphenol	ND(135)	ND(135)	ND(135)	-	-	-	-	-	-	-	-
Dimethylphthalate	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	-	-	-	-
Di-n-butyl phthalate	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	-	-	-	-	-
Di-n-octyl phthalate	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	-	-	-	-
2,4-Dinitrophenol	ND(2100)	ND(2100)	ND(2100)	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	ND(285)	ND(285)	ND(285)	ND(285)	ND(285)	ND(285)	ND(285)	-	-	-	-
Fluoranthene	ND(110)	A 129	A 123	ND(110)	ND(110)	3400	1700	-	-	-	-
Fluorene	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	-	-	-	-
Indeno(1,2,3-cd)pyrene	A 363	A 308	376	ND(185)	ND(185)	ND(185)	ND(185)	-	-	-	-
Isophorone	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	-	-	-	-
Naphthalene	ND(80)	ND(80)	ND(80)	ND(80)	2100	4800	ND(80)	-	-	-	-
Nitrobenzene	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	-	-	-	-
n-Nitrosodi-n-propylamine	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)	-	-	-	-
n-Nitrosodiphenylamine	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	-	-	-	-
Pentachlorophenol	ND(180)	ND(180)	ND(180)	-	-	-	-	-	-	-	-
Phenanthrene	ND(270)	ND(270)	ND(270)	ND(270)	ND(270)	2300	ND(270)	-	-	-	-
Phenol	ND(75)	ND(75)	ND(75)	-	-	-	-	-	-	-	-
Pyrene	ND(95)	A 132	A 155	ND(95)	ND(95)	3000	1500	-	-	-	-
1,2,4-Trichlorobenzene	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	-	-	-	-

SAMPLE DESIGNATION	TP314 S1	TP315 S1	TP316 S1	TP318 S1	TP319 S1	TP320 S1	TP321 S1	TP322 S1	TP323 S1	TP324 S1	TP325 S1
SAMPLING DATE	9/24/1987	9/24/1987	9/24/1987	12/22/1987	12/22/1987	12/22/1987	12/22/1987	12/22/1987	12/23/1987	12/23/1987	12/23/1987
SAMPLE DEPTH (FT.)	0-6.0	0-6.0	0-6.0	7	4	3.5	4	3	2.5	3	3
EXPLORATION TYPE	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT	TEST PIT
SOIL TYPE	MIXTURE	MIXTURE	MIXTURE	SAND	PEAT	FILL	FILL	FILL	FILL	FILL	FILL
TOTAL METALS (mg/kg)											
Antimony	ND(0.5)	ND(0.5)	ND(0.5)	-	-	-	-	-	-	-	-
Arsenic	2.1	1.7	1.1	-	-	-	-	-	-	-	-
Barium	9.1	7.9	8.4	-	-	-	-	-	-	-	-
Beryllium	ND(0.4)	ND(0.4)	ND(0.4)	-	-	-	-	-	-	-	-
Cadmium	3.9	0.3	0.4	-	-	-	-	-	-	-	-
Chromium	5.6	4.8	4.5	-	-	-	-	-	-	-	-
Copper	10	3.9	6.9	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-	-	-	-
Lead	13.1	14.2	9.3	-	-	-	-	-	-	-	-
Mercury	0.863	ND(0.089)	ND(0.089)	-	-	-	-	-	-	-	-
Nickel	7.5	3.4	3.7	-	-	-	-	-	-	-	-
Selenium	0.2	ND(0.2)	0.4	-	-	-	-	-	-	-	-
Silver	ND(0.2)	0.7	1.1	-	-	-	-	-	-	-	-
Thallium	ND(10)	ND(10)	ND(10)	-	-	-	-	-	-	-	-
Zinc	14.6	11.3	35.5	-	-	-	-	-	-	-	-
EP TOXICITY	-	-	-	-	-	-	-	-	-	-	-
OIL & GREASE (mg/kg)	ND(10)	479	ND(10)	-	-	-	-	-	-	-	-
PETROLEUM HYDROCARBON IDENTIFICATION (mg/kg)											
Quantity	-	-	-	-	-	-	-	-	-	-	-
Type	-	-	-	-	-	-	-	-	-	-	-
WASTE CHARACTERISTICS											
Total Cyanide (mg/kg)	ND(3)	ND(3)	ND(3)	-	-	-	-	-	-	-	-
Total Phenolics (mg/kg)	ND(1)	ND(1)	ND(1)	-	-	-	-	-	-	-	-
Formaldehyde (mg/kg)	ND(0.5)	ND(0.5)	ND(0.5)	-	-	-	-	-	-	-	-
Sulfate (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Corrosivity (pH)	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance (ushos/cm)	-	-	-	-	-	-	-	-	-	-	-
Biological Oxygen Demand (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Chloride (mg/kg)	-	-	-	-	-	-	-	-	-	-	-

ABBREVIATIONS:

- : Not analyzed, or invalid data as determined by the validation process.
ND: Compound not detected, detection limit not available.
TR: Compound detected below laboratory reporting limit; detection limit not available.
ND(2.5): Not detected; number in parentheses is equal to the laboratory Reporting Limit
A 54: Concentration is Approximate as determined by validation process
TR (460): Trace Concentration. Compound detected at concentrations below the reporting limit; number in parentheses is equal to the laboratory reporting limit, detection limit.
PASS: Extracted metals not detected or detected below toxic levels.
VOCs: Volatile Organic Compounds
ABNs: Acid/Base/Neutral Extractables

NOTES:

1. This table includes only those compounds detected on the dates indicated.
2. " * " indicates trans 1,2-Dichloroethene and cis 1,2-dichloroethene grouped and reported as 1,2-Dichloroethene
3. " *** " indicates possible contribution from ERCO matrix spiking solution.

TABLE IV
SUMMARY OF OHM SOIL QUALITY DATA - 1984 to 1988
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

SAMPLE DESIGNATION	TP326 S1	TP327 S2	TP400 S2	TP328 S1	T1SS1	T1SS2	PILE 1	PILE 2	J1	J2	SS1
SAMPLING DATE	12/23/1987	12/22/1987	12/22/1987	12/22/1987	3/10/1987	3/10/1987	3/11/1987	3/11/1987	3/15/1985	3/15/1985	10/7/1987
SAMPLE DEPTH (FT)	2	5	5	3	7	7	0-7.0	0-7.0	0-0.5	0-0.5	0-0.5
EXPLORATION TYPE	TEST PIT	TEST PIT	TP327 S2	TEST PIT	FILL - TANK	FILL - TANK	FILL - TANK	FILL - TANK	SURFACE	SURFACE	SURFACE
SOIL TYPE	PEAT	FILL/PEAT	DUPLICATE	FILL	EXCAVATION	EXCAVATION	EXCAVATION	EXCAVATION	SOIL	SOIL	SOIL
VOCs (ug/kg)											
Acetone	ND(25000)	ND(25000)	ND(25000)	ND(25000)	ND(1300)	ND(1300)	-	-	-	-	-
Benzene	ND(300)	ND(300)	ND(300)	ND(300)	53	70	-	-	-	-	-
Bromodichloromethane	ND(110)	ND(110)	ND(110)	ND(110)	ND(50)	ND(50)	-	-	-	-	-
2-Butanone	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(2500)	ND(2500)	-	-	-	-	-
Carbon Disulfide	ND(1000)	ND(1000)	ND(1000)	ND(1000)	120	ND(50)	-	-	-	-	-
Carbon Tetrachloride	ND(140)	ND(140)	ND(140)	ND(140)	ND(50)	ND(50)	-	-	-	-	-
Chlorobenzene	ND(300)	ND(300)	ND(300)	ND(300)	ND(50)	ND(50)	-	-	-	-	-
Chloroform	ND(80)	ND(80)	ND(80)	ND(80)	ND(50)	ND(50)	-	-	-	-	-
Chloromethane	ND(400)	ND(400)	ND(400)	ND(400)	ND(130)	ND(130)	-	-	-	-	-
1,1-Dichloroethane	ND(235)	ND(235)	ND(235)	ND(235)	ND(50)	ND(50)	-	-	-	-	-
1,2-Dichloroethane	ND(140)	ND(140)	ND(140)	ND(140)	ND(50)	ND(50)	-	-	-	-	-
1,1-Dichloroethylene	ND(140)	ND(140)	ND(140)	ND(140)	ND(50)	ND(50)	-	-	-	-	-
1,2-Dichloroethylene	ND(80)	ND(80)	ND(80)	ND(80)	-	-	-	-	-	-	-
Trans-1,2-Dichloroethylene	ND(80)	ND(80)	ND(80)	ND(80)	ND(50)	ND(50)	-	-	-	-	-
1,2-Dichloropropane	ND(300)	ND(300)	ND(300)	ND(300)	ND(50)	ND(50)	-	-	-	-	-
Ethylbenzene	ND(500)	ND(500)	ND(500)	ND(500)	ND(50)	ND(50)	-	-	-	-	-
2-Hexanone	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(250)	ND(250)	-	-	-	-	-
Methylene Chloride	ND(140)	ND(140)	ND(140)	ND(140)	ND(250)	ND(250)	-	-	-	-	-
4-methyl-2-Pentanone	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(250)	ND(250)	-	-	-	-	-
2,2-Oxybis propane	-	-	-	-	-	-	-	-	-	-	-
Styrene	ND(500)	ND(500)	ND(500)	ND(500)	ND(50)	ND(50)	-	-	-	-	-
Tetrachloroethylene	ND(205)	ND(205)	ND(205)	ND(205)	ND(50)	ND(50)	-	-	-	-	-
1,1,1-Trichloroethane	ND(190)	ND(190)	ND(190)	ND(190)	ND(50)	ND(50)	-	-	-	-	-
Toluene	ND(300)	ND(300)	ND(300)	ND(300)	1600	790	-	-	-	-	-
Trichloroethylene	ND(95)	ND(95)	ND(95)	ND(95)	ND(50)	ND(50)	-	-	-	-	-
Vinyl Acetate	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(250)	ND(250)	-	-	-	-	-
Xylenes, mixture	ND(500)	ND(500)	ND(500)	ND(500)	ND(50)	ND(50)	-	-	-	-	-

SAMPLE DESIGNATION	TP326 S1	TP327 S2	TP400 S2	TP328 S1	T1SS1	T1SS2	PILE 1	PILE 2	J1	J2	SS1
SAMPLING DATE	12/23/1987	12/22/1987	12/22/1987	12/22/1987	3/10/1987	3/10/1987	3/11/1987	3/11/1987	3/15/1985	3/15/1985	10/7/1987
SAMPLE DEPTH (FT.)	2	5	5	3	7	7	0-7.0	0-7.0	0-0.5	0-0.5	0-0.5
EXPLORATION TYPE	TEST PIT	TEST PIT	TP327 S2	TEST PIT	FILL - TANK	FILL - TANK	FILL - TANK	FILL - TANK	SURFACE	SURFACE	SURFACE
SOIL TYPE	PEAT	FILL/PEAT	DUPLICATE	FILL	EXCAVATION	EXCAVATION	EXCAVATION	EXCAVATION	SOIL	SOIL	SOIL
ABNs (ug/kg)											
Acenaphthene	ND(95)	ND(95)	ND(95)	ND(95)	TR(4400)	ND(2000)	ND(3200)	ND(2600)	ND(3000)	ND(6800)	4350
Acenaphthylene	ND(175)	ND(175)	ND(175)	ND(175)	ND(4400)	ND(2000)	ND(3200)	ND(2600)	ND(3000)	ND(6800)	ND(175)
Anthracene	1600	ND(95)	ND(95)	130 A	ND(4400)	TR(2200)	TR(3200)	TR(2600)	ND(3000)	ND(6800)	7160
Benzo(a)anthracene	3100	ND(390)	ND(390)	840	TR(4400)	TR(2200)	TR(3200)	TR(2600)	ND(3000)	ND(6800)	41000
Benzo(a)pyrene	3000	ND(125)	ND(125)	1500	TR(4400)	TR(2200)	TR(3200)	TR(2600)	ND(3000)	TR(6800)	ND(125)
Benzo(b,k)fluoranthene	5500	ND(125)	ND(125)	1500	TR(4400)	TR(2200)	TR(3200)	TR(2600)	ND(3000)	TR(6800)	182900
Benzo(g,h,i)perylene	1700	ND(205)	ND(205)	1200	TR(4400)	TR(2200)	ND(3200)	TR(2600)	ND(3000)	ND(6800)	82000
Bis(2-ethylhexyl)phthalate	ND(125)	ND(125)	ND(125)	ND(125)	ND(4400)	TR(2200)	TR(3200)	2800	ND(3000)	ND(6800)	5960
Butylbenzylphthalate	ND(125)	ND(125)	ND(125)	ND(125)	ND(4400)	ND(2000)	ND(3200)	ND(2600)	ND(3000)	ND(6800)	ND(125)
p-Chloro-m-cresol	ND(150)	ND(150)	ND(150)	ND(150)	ND(4400)	ND(2000)	ND(3200)	ND(2600)	ND(3000)	ND(6800)	ND(150)
2-Chlorophenol	ND(165)	ND(165)	ND(165)	ND(165)	ND(4400)	ND(2000)	ND(3200)	ND(2600)	ND(3000)	ND(6800)	ND(185)
Chrysene	3100	ND(125)	ND(125)	890	TR(4400)	TR(2200)	TR(3200)	TR(2600)	ND(3000)	TR(6800)	ND(125)
Dibenzo(a,h)anthracene	650	ND(125)	ND(125)	370	ND(4400)	ND(2000)	ND(3200)	ND(2600)	ND(3000)	TR(6800)	25700
1,2-Dichlorobenzene	ND(95)	ND(95)	ND(95)	ND(95)	ND(4400)	ND(2000)	ND(3200)	ND(2600)	ND(3000)	ND(6800)	ND(95)
1,4-Dichlorobenzene	ND(220)	ND(220)	ND(220)	ND(220)	ND(4400)	ND(2000)	ND(3200)	ND(2600)	ND(3000)	ND(6800)	ND(220)
Diethylphthalate	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(4400)	ND(2000)	ND(3200)	ND(2600)	ND(3000)	ND(6800)	ND(1100)
2,4-Dimethylphenol	ND(135)	ND(135)	ND(135)	ND(135)	ND(4400)	ND(2000)	ND(3200)	ND(2600)	ND(3000)	ND(6800)	ND(135)
Dimethylphthalate	ND(80)	ND(80)	ND(80)	ND(80)	ND(4400)	ND(2000)	ND(3200)	ND(2600)	ND(3000)	ND(6800)	ND(80)
Di-n-butyl phthalate	ND(125)	-	-	-	ND(4400)	ND(2000)	ND(3200)	ND(2600)	ND(3000)	ND(6800)	3260
Di-n-octyl phthalate	ND(125)	ND(125)	ND(125)	ND(125)	ND(4400)	ND(2000)	ND(3200)	ND(2600)	ND(3000)	ND(6800)	ND(125)
2,4-Dinitrophenol	ND(2100)	ND(2100)	ND(2100)	ND(2100)	ND(22000)	ND(10000)	ND(3200)	ND(2600)	ND(3000)	ND(6800)	ND(2100)
2,4-Dinitrotoluene	ND(285)	ND(285)	ND(285)	ND(285)	ND(4400)	ND(2000)	ND(3200)	ND(2600)	ND(3000)	ND(6800)	ND(285)
Fluoranthene	5100	ND(110)	ND(110)	840	TR(4400)	TR(2200)	ND(3200)	TR(2600)	TR(3000)	TR(6800)	58300
Fluorene	1400	ND(95)	ND(95)	ND(95)	TR(4400)	ND(2000)	ND(3200)	TR(2600)	ND(3000)	ND(6800)	2960
Indeno(1,2,3-cd)pyrene	2050	ND(185)	ND(185)	1250	TR(4400)	TR(2200)	ND(3200)	TR(2600)	ND(3000)	TR(6800)	97500
Isophorone	ND(110)	ND(110)	ND(110)	ND(110)	ND(4400)	ND(2000)	ND(3200)	ND(2600)	ND(3000)	ND(6800)	ND(110)
Naphthalene	3900	4300	4500	ND(80)	57000	18000	14000	14000	ND(3000)	ND(6800)	1640
Nitrobenzene	ND(95)	ND(95)	ND(95)	ND(95)	ND(4400)	ND(2000)	ND(3200)	ND(2600)	ND(3000)	ND(6800)	ND(95)
n-Nitrosodi-n-propylamine	ND(130)	ND(130)	ND(130)	ND(130)	ND(4400)	ND(2000)	ND(3200)	ND(2600)	ND(3000)	ND(6800)	ND(130)
n-Nitrosodiphenylamine	ND(95)	ND(95)	ND(95)	ND(95)	ND(4400)	ND(2000)	ND(3200)	ND(2600)	ND(3000)	ND(6800)	ND(95)
Pentachlorophenol	ND(180)	ND(180)	ND(180)	ND(180)	ND(22000)	ND(10000)	ND(3200)	ND(2600)	ND(3000)	ND(6800)	ND(180)
Phenanthrene	6350	ND(270)	ND(270)	A 230	TR(4400)	TR(2200)	TR(3200)	TR(2600)	TR(3000)	ND(6800)	35700
Phenol	ND(75)	ND(75)	ND(75)	ND(75)	ND(4400)	ND(2000)	ND(3200)	ND(2600)	ND(3000)	ND(6800)	ND(75)
Pyrene	3650	ND(95)	ND(95)	790	TR(4400)	TR(2200)	TR(3200)	TR(2600)	TR(3000)	TR(6800)	ND(95)
1,2,4-Trichlorobenzene	ND(95)	ND(95)	ND(95)	ND(95)	ND(4400)	ND(2000)	ND(3200)	ND(2600)	ND(3000)	ND(6800)	ND(95)

SAMPLE DESIGNATION	TP326 S1	TP327 S2	TP400 S2	TP328 S1	T1SS1	T1SS2	PILE 1	PILE 2	J1	J2	SS1
SAMPLING DATE	12/23/1987	12/22/1987	12/22/1987	12/22/1987	3/10/1987	3/10/1987	3/11/1987	3/11/1987	3/15/1985	3/15/1985	10/7/1987
SAMPLE DEPTH (FT.)	2	5	5	3	7	7	0-7.0	0-7.0	0-0.5	0-0.5	0-0.5
EXPLORATION TYPE	TEST PIT	TEST PIT	TP327 S2	TEST PIT	FILL - TANK	FILL - TANK	FILL - TANK	FILL - TANK	SURFACE	SURFACE	SURFACE
SOIL TYPE	PEAT	FILL/PEAT	DUPLICATE	FILL	EXCAVATION	EXCAVATION	EXCAVATION	EXCAVATION	SOIL	SOIL	SOIL
TOTAL METALS (mg/kg)											
Antimony	ND(10)	ND(10)	ND(10)	ND(10)	2.1	ND(1.9)	-	-	ND(1.1)	ND(2.1)	ND(10)
Arsenic	1.8	3.9	2	16	8.8	4	-	-	11	22	5.2
Barium	20.8	47.8	56.3	98.7	-	-	-	-	-	-	-
Beryllium	ND(0.4)	ND(0.4)	ND(0.4)	0.8	0.17	0.32	-	-	0.28	0.39	ND(0.4)
Cadmium	0.6	1	1	3.3	1.5	3	-	-	ND(0.23)	ND(0.42)	2
Chromium	5	5.1	6.3	37.6	61	13	-	-	15	21	22.3
Copper	15.4	16.8	17.1	71.3	210	82	-	-	6.9	26	37.2
Iron	-	-	-	-	-	-	-	-	-	-	-
Lead	79.8	78	93.3	302	840	4900	-	-	14	490	302
Mercury	0.15	0.203	0.197	0.195	1.9	0.67	-	-	0.026	0.14	0.54
Nickel	3.2	7.6	8.3	36.6	40	13	-	-	7.8	11	13.8
Selenium	ND(0.2)	ND(0.2)	ND(0.2)	0.2	2	ND(0.87)	-	-	ND(1.1)	ND(1.5)	ND(0.2)
Silver	ND(0.2)	ND(0.2)	ND(0.2)	0.6	1	ND(0.95)	-	-	0.25	ND(0.3)	0.4
Thallium	ND(10)	ND(10)	ND(10)	ND(10)	ND(2)	ND(1.7)	-	-	ND(1.1)	ND(1.5)	ND(10)
Zinc	154	195	169	156	230	370	-	-	27	110	466
EP TOXICITY	PASS	-	-	-	PASS	PASS	-	-	-	-	-
OIL & GREASE (mg/kg)	527	8732	4636	270	6150	5250	11300	7480	-	-	-
PETROLEUM HYDROCARBON IDENTIFICATION (mg/kg)											
Quantity	2118	7950	11000	1700	1.1	1.4	-	-	-	-	-
Type	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	-	-	-	-	-
WASTE CHARACTERISTICS											
Total Cyanide (mg/kg)	A 1.26	8.75	ND(2)	A 1.3	ND(0.39)	ND(0.58)	-	-	-	-	ND(3)
Total Phenolics (mg/kg)	ND(3)	ND(2)	ND(2)	ND(2)	0.202	ND(0.235)	-	-	-	-	ND(1)
Formaldehyde (mg/kg)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	2.1	0.3	-	-	-	-	-
Sulfate (mg/kg)	ND	-	-	-	-	-	-	-	-	-	-
Corrosivity (pH)	ND	-	-	-	-	-	-	-	-	-	-
Specific Conductance (ushos/cm)	ND	-	-	-	-	-	-	-	-	-	-
Biological Oxygen Demand (mg/kg)	ND	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids (mg/kg)	ND	-	-	-	-	-	-	-	-	-	-
Chloride (mg/kg)	ND	-	-	-	-	-	-	-	-	-	-

ABBREVIATIONS:

- - : Not analyzed; or invalid data as determined by the validation process.
ND: Compound not detected, detection limit not available.
TR: Compound detected below laboratory reporting limit; detection limit not available.
ND(2.5): Not detected; number in parentheses is equal to the laboratory Reporting Limit
A 54: Concentration is Approximate as determined by validation process.
TR (460): Trace Concentration. Compound detected at concentrations below the reporting limit; number in parentheses is equal to the laboratory reporting limit. detection limit.
PASS. Extracted metals not detected or detected below toxic levels.
VOCs: Volatile Organic Compounds
ABNs: Acid/Base/Neutral Extractables

NOTES:

1. This table includes only those compounds detected on the dates indicated.
2. "* " Indicates trans 1,2-Dichlorothene and cis 1,2-dichloroethene grouped and reported as 1,2-Dichlorothene
3. "** " Indicates possible contribution from ERCO matrix spiking solution.

TABLE IV
SUMMARY OF OHM SOIL QUALITY DATA - 1984 to 1988
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

SAMPLE DESIGNATION	SS2	SS3	SS101	SS4	SS5	SS6	SS7	SS8	SS9	SS10	SS11
SAMPLING DATE	10/7/1987	10/7/1987	10/7/1987	10/7/1987	10/7/1987	10/7/1987	10/7/1987	10/7/1987	10/7/1987	10/7/1987	10/7/1987
SAMPLE DEPTH (FT.)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
EXPLORATION TYPE	SURFACE	SURFACE	SS3	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE
SOIL TYPE	SOIL	SOIL	DUPLICATE	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
VOCs (ug/kg)											
Acetone	-	-	-	-	-	-	-	-	-	-	-
Benzene	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	-	-	-	-	-	-	-	-	-	-	-
2-Butanone	-	-	-	-	-	-	-	-	-	-	-
Carbon Disulfide	-	-	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	-	-	-	-	-	-	-	-	-	-	-
Chloroform	-	-	-	-	-	-	-	-	-	-	-
Chloromethane	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethylene	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethylene	-	-	-	-	-	-	-	-	-	-	-
Trans-1,2-Dichloroethylene	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	-	-	-	-	-	-	-	-	-	-	-
Methylene Chloride	-	-	-	-	-	-	-	-	-	-	-
4-methyl-2-Pentanone	-	-	-	-	-	-	-	-	-	-	-
2,2-Oxybis propane	-	-	-	-	-	-	-	-	-	-	-
Styrene	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethylene	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	-	-	-	-	-	-	-	-	-	-	-
Toluene	-	-	-	-	-	-	-	-	-	-	-
Trichloroethylene	-	-	-	-	-	-	-	-	-	-	-
Vinyl Acetate	-	-	-	-	-	-	-	-	-	-	-
Xylenes, mixture	-	-	-	-	-	-	-	-	-	-	-

SAMPLE DESIGNATION	SS2	SS3	SS101	SS4	SS5	SS6	SS7	SS8	SS9	SS10	SS11
SAMPLING DATE	10/7/1987	10/7/1987	10/7/1987	10/7/1987	10/7/1987	10/7/1987	10/7/1987	10/7/1987	10/7/1987	10/7/1987	10/7/1987
SAMPLE DEPTH (FT.)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
EXPLORATION TYPE	SURFACE	SURFACE	SS3	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE
SOIL TYPE	SOIL	SOIL	DUPLICATE	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
ABNs (ug/kg)											
Acenaphthene	ND(95)	*142 A*	*119 A*	ND(95)	*101 A*	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)
Acenaphthylene	ND(175)	ND(175)	ND(175)	ND(175)	ND(175)	ND(175)	ND(175)	ND(175)	ND(175)	ND(175)	ND(175)
Anthracene	935	*172 A*	244	ND(95)	311	ND(95)	ND(95)	ND(95)	ND(95)	2690	ND(95)
Benzo(a)anthracene	8470	1360	1580	ND(390)	3580	ND(390)	ND(390)	*189 A*	A 343	1860	ND(390)
Benzo(a)pyrene	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)
Benzo(b,k)fluoranthene	25200	6130	6850	*118 A*	18950	907	*502 A*	ND(125)	1445	3040	ND(125)
Benzo(g,h,i)perylene	ND(205)	4924	4230	*206 A*	11200	796	*393 A*	ND(205)	830	ND(205)	ND(205)
Bis(2-ethylhexyl)phthalate	41250	*220 A*	1220	-	-	-	-	ND(125)	-	-	ND(125)
Butylbenzylphthalate	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	*111 A*	ND(125)	ND(125)	ND(125)
p-Chloro-m-cresol	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)
2-Chlorophenol	ND(165)	ND(165)	ND(165)	ND(165)	ND(165)	ND(165)	ND(165)	ND(165)	ND(165)	ND(165)	ND(165)
Chrysene	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)
Dibenzo(a,h)anthracene	ND(125)	1410	1150	ND(125)	6340	*243 A*	*100 A*	ND(125)	331	ND(125)	ND(125)
1,2-Dichlorobenzene	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)
1,4-Dichlorobenzene	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)
Diethylphthalate	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)
2,4-Dimethylphenol	ND(135)	ND(135)	ND(135)	ND(135)	ND(135)	ND(135)	ND(135)	ND(135)	ND(135)	ND(135)	ND(135)
Dimethylphthalate	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)
Di-n-butyl phthalate	2430	1145	1900	995	1980	2290	1960	1780	980	3210	1680
Di-n-octyl phthalate	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)
2,4-Dinitrophenol	ND(2100)	ND(2100)	ND(2100)	ND(2100)	ND(2100)	ND(2100)	ND(2100)	ND(2100)	ND(2100)	ND(2100)	ND(2100)
2,4-Dinitrotoluene	ND(285)	ND(285)	ND(285)	ND(285)	ND(285)	ND(285)	ND(285)	ND(285)	ND(285)	ND(285)	ND(285)
Fluoranthene	8640	1500	ND(110)	ND(110)	3360	A 194	A 139	ND(110)	344	2490	ND(110)
Fluorene	ND(95)	A 112	A 101	ND(95)	A 118	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)
Indeno(1,2,3-cd)pyrene	1900	4890	4340	160	12000	1010	417	ND(185)	1120	ND(185)	ND(185)
Isophorone	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)
Naphthalene	ND(80)	592	639	ND(80)	A 128	272	ND(80)	160	2820	9530	ND(80)
Nitrobenzene	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)
n-Nitrosodi-n-propylamine	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)
n-Nitrosodiphenylamine	ND(95)	ND(95)	105	123	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)
Pentachlorophenol	ND(180)	ND(180)	ND(180)	ND(180)	ND(180)	ND(180)	ND(180)	ND(180)	ND(180)	ND(180)	ND(180)
Phenanthrene	4120	827	1160	ND(270)	1260	ND(270)	ND(270)	ND(270)	A 175	2320	ND(270)
Phenol	ND(75)	ND(75)	ND(75)	ND(75)	ND(75)	ND(75)	ND(75)	ND(75)	ND(75)	ND(75)	ND(75)
Pyrene	7790	ND(95)	ND(95)	ND(95)	3040	191	A 139	200	341	2310	ND(95)
1,2,4-Trichlorobenzene	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)

SAMPLE DESIGNATION	SS2	SS3	SS101	SS4	SS5	SS6	SS7	SS8	SS9	SS10	SS11
SAMPLING DATE	10/7/1987	10/7/1987	10/7/1987	10/7/1987	10/7/1987	10/7/1987	10/7/1987	10/7/1987	10/7/1987	10/7/1987	10/7/1987
SAMPLE DEPTH (FT.)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
EXPLORATION TYPE	SURFACE	SURFACE	SS3	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE
SOIL TYPE	SOIL	SOIL	DUPLICATE	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
TOTAL METALS (mg/kg)											
Antimony	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Arsenic	9	7	6.5	0.8	6.3	ND(0.2)	2.8	9	9.2	13.8	4
Barium	-	-	-	-	-	-	-	-	-	-	-
Beryllium	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)
Cadmium	6	2.3	1.9	0.8	15.9	0.8	0.8	1.4	1.2	1.8	0.8
Chromium	13.8	10.4	10.8	5.5	14.3	9	5.5	10.4	12.4	17.9	6.9
Copper	33.1	18.6	17.3	9.8	274	9.6	8.8	9	13.6	17	13
Iron	-	-	-	-	-	-	-	-	-	-	-
Lead	411	101	85.4	6.8	460	18.4	19.7	22.9	31.2	32.1	104
Mercury	2.59	0.29	0.29	ND(0.112)	0.64	ND(0.112)	ND(0.112)	ND(0.112)	ND(0.112)	ND(0.112)	ND(0.112)
Nickel	8.8	7.8	8.1	6.1	33.3	7.2	6.4	5.7	10	13.6	7.3
Selenium	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Silver	ND(0.2)	ND(0.2)	0.2	ND(0.2)	ND(0.2)	3.6	ND(0.2)	ND(0.2)	0.4	ND(0.2)	0.2
Thallium	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Zinc	2729	801	577	29.3	2740	30	41.4	37.1	51.1	76.9	33.6
EP TOXICITY	-	-	-	-	-	-	-	-	-	-	-
OIL & GREASE (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
PETROLEUM HYDROCARBON IDENTIFICATION (mg/kg)											
Quantity	-	-	-	-	-	-	-	-	-	-	-
Type	-	-	-	-	-	-	-	-	-	-	-
WASTE CHARACTERISTICS											
Total Cyanide (mg/kg)	ND(3)	ND(3)	ND(3)	ND(3)	ND(3)	ND(3)	ND(3)	ND(3)	ND(3)	ND(3)	ND(3)
Total Phenolics (mg/kg)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
Formaldehyde (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Sulfate (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Corrosivity (pH)	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance (ushos/cm)	-	-	-	-	-	-	-	-	-	-	-
Biological Oxygen Demand (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Chloride (mg/kg)	-	-	-	-	-	-	-	-	-	-	-

ABBREVIATIONS:

- : Not analyzed, or invalid data as determined by the validation process
ND: Compound not detected, detection limit not available.
TR: Compound detected below laboratory reporting limit; detection limit not available.
ND(2.5): Not detected; number in parentheses is equal to the laboratory Reporting Limit
A 54: Concentration is Approximate as determined by validation process.
TR (460): Trace Concentration. Compound detected at concentrations below the reporting limit; number in parentheses is equal to the laboratory reporting limit detection limit.
PASS: Extracted metals not detected or detected below toxic levels.
VOCs: Volatile Organic Compounds
ABNs: Acid/Base/Neutral Extractables

NOTES:

1. This table includes only those compounds detected on the dates indicated.
2. "*" indicates trans-1,2-Dichloroethene and cis 1,2-dichloroethene grouped and reported as 1,2-Dichloroethene
3. "**" indicates possible contribution from ERCO matrix spiking solution.

TABLE IV
SUMMARY OF OHM SOIL QUALITY DATA - 1984 to 1988
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

SAMPLE DESIGNATION	SS12	B1 S10	B5 S15	B6 S12	B101	B102	B103	B104	B108
SAMPLING DATE	10/7/1987	2/2/1984	1/30/1984	1/25/1984	4/19/1984	4/19/1984	4/19/1984	4/19/1984	6/1/1984
SAMPLE DEPTH (FT.)	0-0.5	29.0-31.0	28.5-30.5	34.0-35.5	1.0-9.0	1.5-5.5	0.5-6.5	1.0-9.0	1.0-12.5
EXPLORATION TYPE	SURFACE	BORING	BORING	BORING	COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE
SOIL TYPE	SOIL	SAND	SAND	SAND					
VOCs (ug/kg)									
Acetone	-	680	ND(1)	86	ND(10)	ND(10)	ND(10)	ND(10)	-
Benzene	-	ND(1)	ND(1)	ND(1)	-	-	-	-	-
Bromodichloromethane	-	ND(1)	ND(1)	ND(1)	-	-	-	-	-
2-Butanone	-	19	ND(1)	*8 A*	ND(10)	ND(10)	ND(10)	ND(10)	-
Carbon Disulfide	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	-	ND(1)	ND(1)	ND(1)	-	-	-	-	-
Chlorobenzene	-	ND(1)	ND(1)	ND(1)	-	-	-	-	-
Chloroform	-	ND(1)	ND(1)	ND(1)	-	-	-	-	-
Chloromethane	-	ND(1)	ND(1)	ND(1)	-	-	-	-	-
1,1-Dichloroethane	-	ND(1)	ND(1)	ND(1)	-	-	-	-	-
1,2-Dichloroethane	-	ND(1)	ND(1)	ND(1)	-	-	-	-	-
1,1-Dichloroethylene	-	ND(1)	ND(1)	ND(1)	-	-	-	-	-
1,2-Dichloroethylene	-	-	-	-	-	-	-	-	-
Trans-1,2-Dichloroethylene	-	ND(1)	ND(1)	ND(1)	-	-	-	-	-
1,2-Dichloropropane	-	ND(1)	ND(1)	ND(1)	-	-	-	-	-
Ethylbenzene	-	*2 A*	ND(1)	ND(1)	-	-	-	-	-
2-Hexanone	-	-	-	-	-	-	-	-	-
Methylene Chloride	-	ND(1)	ND(1)	ND(1)	-	-	-	-	-
4-methyl-2-Pentanone	-	19	ND(1)	*3 A*	ND(10)	ND(10)	ND(10)	ND(10)	-
2,2-Oxybis propane	-	-	-	-	-	-	-	-	-
Styrene	-	-	-	-	-	-	-	-	-
Tetrachloroethylene	-	ND(1)	ND(1)	ND(1)	-	-	-	-	-
1,1,1-Trichloroethane	-	ND(1)	ND(1)	ND(1)	-	-	-	-	-
Toluene	-	ND(1)	ND(1)	ND(1)	-	-	-	-	-
Trichloroethylene	-	ND(1)	ND(1)	ND(1)	-	-	-	-	-
Vinyl Acetate	-	-	-	-	-	-	-	-	-
Xylenes, mixture	-	*6 A*	ND(1)	ND(1)	ND(10)	ND(10)	ND(10)	ND(10)	-

SAMPLE DESIGNATION	SS12	B1 S10	B5 S15	B6 S12	B101	B102	B103	B104	B108
SAMPLING DATE	10/7/1987	2/2/1984	1/30/1984	1/25/1984	4/19/1984	4/19/1984	4/19/1984	4/19/1984	6/1/1984
SAMPLE DEPTH (FT.)	0-0.5	29.0-31.0	28.5-30.5	34.0-35.5	1.0-9.0	1.5-5.5	0.5-6.5	1.0-9.0	1.0-12.5
EXPLORATION TYPE	SURFACE	BORING	BORING	BORING	COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE
SOIL TYPE	SOIL	SAND	SAND	SAND					
ABNs (ug/kg)									
Acenaphthene	ND(95)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
Acenaphthylene	ND(175)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
Anthracene	1730	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
Benzo(a)anthracene	2810	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
Benzo(a)pyrene	ND(125)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
Benzo(b,k)fluoranthene	8740	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
Benzo(g,h,i)perylene	ND(205)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
Bis(2-ethylhexyl)phthalate	ND(125)	TR(1100)	TR(1100)	TR(1100)	-	-	-	-	-
Butylbenzylphthalate	ND(125)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
p-Chloro-m-cresol	ND(150)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
2-Chlorophenol	ND(165)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
Chrysene	ND(125)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
Dibenzo(a,h)anthracene	ND(125)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
1,2-Dichlorobenzene	ND(95)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
1,4-Dichlorobenzene	ND(220)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
Diethylphthalate	ND(1100)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
2,4-Dimethylphenol	ND(135)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
Dimethylphthalate	ND(80)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
Di-n-butyl phthalate	1780	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
Di-n-octyl phthalate	ND(125)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
2,4-Dinitrophenol	ND(2100)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
2,4-Dinitrotoluene	ND(285)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
Fluoranthene	2750	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
Fluorene	ND(95)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	ND(185)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
Isophorone	ND(110)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
Naphthalene	ND(80)	TR(1100)	ND(1100)	ND(1100)	TR(480)	ND(1200)	ND(1100)	1200	A 85
Nitrobenzene	ND(95)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
n-Nitrosodi-n-propylamine	ND(130)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
n-Nitrosodiphenylamine	ND(95)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
Pentachlorophenol	ND(180)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
Phenanthrene	1490	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
Phenol	ND(75)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
Pyrene	2780	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-
1,2,4-Trichlorobenzene	ND(95)	ND(1100)	ND(1100)	ND(1100)	-	-	-	-	-

SAMPLE DESIGNATION	SS12	B1 S10	B5 S15	B6 S12	B101	B102	B103	B104	B108
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SAMPLE DEPTH (FT.)	0-0.5	29.0-31.0	28.5-30.5	34.0-35.5	1.0-9.0	1.5-5.5	0.5-6.5	1.0-9.0	1.0-12.5
EXPLORATION TYPE	SURFACE	BORING	BORING	BORING	COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE
SOIL TYPE	SOIL	SAND	SAND	SAND					
TOTAL METALS (mg/kg)									
Antimony	ND(10)	-	-	-	-	-	-	-	-
Arsenic	12	-	-	-	-	-	-	-	-
Barium	-	-	-	-	-	-	-	-	-
Beryllium	0.6	-	-	-	-	-	-	-	-
Cadmium	2.2	-	-	-	-	-	-	-	-
Chromium	14.8	-	-	-	-	-	-	-	-
Copper	62	-	-	-	-	-	-	-	-
Iron	-	-	-	-	-	-	-	-	-
Lead	514	-	-	-	-	-	-	-	-
Mercury	0.114	-	-	-	-	-	-	-	-
Nickel	16.8	-	-	-	-	-	-	-	-
Selenium	0.2	-	-	-	-	-	-	-	-
Silver	ND(0.2)	-	-	-	-	-	-	-	-
Thallium	ND(10)	-	-	-	-	-	-	-	-
Zinc	380	-	-	-	-	-	-	-	-
EP TOXICITY	-	-	-	-	-	-	-	-	-
OIL & GREASE (mg/kg)	-	-	-	-	-	-	-	-	-
PETROLEUM HYDROCARBON IDENTIFICATION (mg/kg)									
Quantity	-	-	-	-	-	-	-	-	-
Type	-	-	-	-	-	-	-	-	-
WASTE CHARACTERISTICS									
Total Cyanide (mg/kg)	ND(3)	-	-	-	-	-	-	-	-
Total Phenolics (mg/kg)	ND(1)	-	-	-	-	-	-	-	-
Formaldehyde (mg/kg)	-	-	-	-	-	-	-	-	-
Sulfate (mg/kg)	-	-	-	-	-	-	-	-	-
Corrosivity (pH)	-	-	-	-	-	-	-	-	-
Specific Conductance (ushos/cm)	-	-	-	-	-	-	-	-	-
Biological Oxygen Demand (mg/kg)	-	-	-	-	-	-	-	-	-
Total Suspended Solids (mg/kg)	-	-	-	-	-	-	-	-	-
Chloride (mg/kg)	-	-	-	-	-	-	-	-	-

ABBREVIATIONS:

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TR: Compound detected below laboratory reporting limit; detection limit not available.
ND(2.5): Not detected; number in parentheses is equal to the laboratory Reporting Limit
A 54: Concentration is Approximate as determined by validation process.
TR (460): Trace Concentration. Compound detected at concentrations below the reporting limit; number in parentheses is equal to the laboratory reporting limit, detection limit.
PASS: Extracted metals not detected or detected below toxic levels.
VOCs: Volatile Organic Compounds
ABNs: Acid/Base/Neutral Extractables

NOTES:

1. This table includes only those compounds detected on the dates indicated
2. " ' " Indicates trans 1,2-Dichlorothene and cis 1,2-dichloroethene grouped and reported as 1,2-Dichlorothene
3. " * " indicates possible contribution from ERCO matrix spiking solution.

TABLE IV
SUMMARY OF OHM SOIL QUALITY DATA - 1984 to 1988
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

SAMPLE DESIGNATION	B401	B402	B403	B405	B406	B407	B409	B410	B411	B412	B903
SAMPLING DATE	9/11/1984	9/11/1984	9/13/1984	9/11/1984	9/12/1984	9/12/1984	9/12/1984	9/13/1984	9/13/1984	9/13/1984	1/8/1988
SAMPLE DEPTH (FT.)	1.0-3.0	0-6.0	0.5-6.5	1.5-5.5	0-6.0	0-2.0	0-6.0	0-10.0	0-4.0	0-6.0	9.0-11.0
EXPLORATION TYPE	BORING	BORING	BORING	BORING	BORING	BORING	BORING	BORING	BORING	BORING	BORING
SOIL TYPE	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL & SAND	FILL	FILL & SAND	SAND
VOCs (ug/kg)											
Acetone	*160 A*	*160 A*	ND(10)	*304.9 A*	ND(10)	*51 A*	ND(10)	ND(10)	ND(10)	*50 A*	ND(25000)
Benzene	ND(10)	ND(10)	ND(10)	ND(10)	*9 A*	ND(10)	ND(10)	ND(10)	TR (10)	ND(10)	ND(300)
Bromodichloromethane	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(110)
2-Butanone	ND(10)	ND(10)	-	-	ND(10)	ND(10)	ND(10)	-	-	-	ND(1500)
Carbon Disulfide	ND(10)	*39 A*	*17 A*	-	*19 A*	*35 A*	ND(10)	*13 A*	TR(10)	-	ND(1000)
Carbon Tetrachloride	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(140)
Chlorobenzene	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(300)
Chloroform	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(80)
Chloromethane	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(400)
1,1-Dichloroethane	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(235)
1,2-Dichloroethane	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(140)
1,1-Dichloroethylene	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(140)
1,2-Dichloroethylene	-	-	-	-	-	-	-	-	-	-	ND(80)
Trans-1,2-Dichloroethylene	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(80)
1,2-Dichloropropane	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	TR(100	ND(10)	ND(10)	ND(10)	ND(10)	ND(300)
Ethylbenzene	ND(10)	ND(10)	ND(10)	ND(10)	110	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(500)
2-Hexanone	ND(10)	ND(10)	-	-	ND(10)	ND(10)	ND(10)	-	-	-	ND(1000)
Methylene Chloride	*11 A*	*30 A*	ND(10)	*13 A*	*19 A*	*11 A*	ND(10)	ND(10)	ND(10)	*13.8 A*	ND(140)
4-methyl-2-Pentanone	-	-	ND(10)	-	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(1000)
2,2-Oxybis propane	-	-	-	-	-	-	-	-	-	-	-
Styrene	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(500)
Tetrachloroethylene	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(205)
1,1,1-Trichloroethane	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(190)
Toluene	ND(10)	*68 A*	ND(10)	ND(10)	ND(10)	ND(10)	*22 A*	ND(10)	ND(10)	ND(10)	ND(300)
Trichloroethylene	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(95)
Vinyl Acetate	ND(10)	*21 A*	ND(10)	-	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(1500)
Xylenes, mixture	ND(10)	ND(10)	ND(10)	ND(10)	92	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(500)

SAMPLE DESIGNATION	B401	B402	B403	B405	B406	B407	B409	B410	B411	B412	B903
SAMPLING DATE	9/11/1984	9/11/1984	9/13/1984	9/11/1984	9/12/1984	9/12/1984	9/12/1984	9/13/1984	9/13/1984	9/13/1984	1/8/1988
SAMPLE DEPTH (FT.)	1.0-3.0	0-6.0	0.5-6.5	1.5-5.5	0-6.0	0-2.0	0-6.0	0-10.0	0-4.0	0-6.0	9.0-11.0
EXPLORATION TYPE	BORING	BORING	BORING	BORING	BORING	BORING	BORING	BORING	BORING	BORING	BORING
SOIL TYPE	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL & SAND	FILL	FILL & SAND	SAND
ABNs (ug/kg)											
Acenaphthene	TR(5800)	ND(5600)	ND(460)	TR(4500)	ND(6200)	ND(6400)	ND(510)	TR(560)	ND(550)	ND(560)	-
Acenaphthylene	TR(5800)	TR(5600)	ND(460)	TR(4500)	ND(6200)	ND(6400)	ND(510)	ND(560)	ND(550)	ND(560)	-
Anthracene	6000	TR(5600)	ND(460)	9700	ND(6200)	ND(6400)	ND(510)	TR(560)	ND(550)	TR(560)	-
Benzo(a)anthracene	7500	TR(5600)	TR(460)	8700	TR(6200)	TR(6400)	ND(510)	TR(560)	ND(550)	TR(560)	-
Benzo(a)pyrene	TR(5800)	TR(5600)	TR(460)	6700	TR(6200)	ND(6400)	ND(510)	TR(560)	ND(550)	TR(560)	-
Benzo(b,k)fluoranthene	10000	TR(5600)	TR(460)	11000	TR(6200)	TR(6400)	TR(510)	TR(560)	TR(550)	590	-
Benzo(g,h,i)perylene	TR(5800)	TR(5600)	TR(460)	TR(4500)	TR(6200)	ND(6400)	ND(510)	ND(560)	ND(550)	TR(560)	-
Bis(2-ethylhexyl)phthalate	TR(5800)	ND(5600)	ND(460)	ND(4500)	ND(6200)	ND(6400)	ND(510)	TR(560)	ND(550)	ND(560)	-
Butylbenzylphthalate	ND(5800)	ND(5600)	ND(460)	ND(4500)	ND(6200)	ND(6400)	ND(510)	ND(560)	ND(550)	ND(560)	-
p-Chloro-m-cresol	ND(5800)	ND(5600)	ND(460)	ND(4500)	ND(6200)	ND(6400)	ND(510)	ND(560)	ND(550)	ND(560)	-
2-Chlorophenol	ND(5800)	ND(5600)	ND(460)	ND(4500)	ND(6200)	ND(6400)	ND(510)	ND(560)	ND(550)	ND(560)	-
Chrysene	7200	TR(5600)	TR(460)	7800	TR(6200)	TR(6400)	ND(510)	TR(560)	ND(550)	TR(560)	-
Dibenzo(a,h)anthracene	TR(5800)	TR(5600)	ND(460)	TR(4500)	ND(6200)	ND(6400)	ND(510)	ND(560)	ND(550)	TR(560)	-
1,2-Dichlorobenzene	ND(5800)	ND(5600)	ND(460)	ND(4500)	ND(6200)	ND(6400)	ND(510)	ND(560)	ND(550)	ND(560)	-
1,4-Dichlorobenzene	ND(5800)	ND(5600)	ND(460)	ND(4500)	ND(6200)	ND(6400)	ND(510)	ND(560)	ND(550)	ND(560)	-
Diethylphthalate	ND(5800)	ND(5600)	ND(460)	ND(4500)	ND(6200)	ND(6400)	ND(510)	ND(560)	ND(550)	ND(560)	-
2,4-Dimethylphenol	ND(5800)	ND(5600)	ND(460)	ND(4500)	ND(6200)	ND(6400)	ND(510)	ND(560)	ND(550)	ND(560)	-
Dimethylphthalate	ND(5800)	ND(5600)	ND(460)	ND(4500)	ND(6200)	ND(6400)	ND(510)	ND(560)	ND(550)	ND(560)	-
Di-n-butyl phthalate	ND(5800)	ND(5600)	ND(460)	ND(4500)	ND(6200)	24000	ND(510)	ND(560)	ND(550)	ND(560)	-
Di-n-octyl phthalate	ND(5800)	ND(5600)	ND(460)	ND(4500)	ND(6200)	ND(6400)	ND(510)	TR(560)	ND(550)	ND(560)	-
2,4-Dinitrophenol	ND(5800)	ND(5600)	ND(460)	ND(4500)	ND(6200)	ND(6400)	ND(510)	ND(560)	ND(550)	ND(560)	-
2,4-Dinitrotoluene	ND(5800)	ND(5600)	ND(460)	ND(4500)	ND(6200)	ND(6400)	ND(510)	ND(560)	ND(550)	ND(560)	-
Fluoranthene	24000	TR(5600)	TR(460)	25800	TR(6200)	TR(6400)	TR(510)	TR(560)	ND(550)	TR(560)	-
Fluorene	TR(5800)	ND(5600)	ND(460)	8700	ND(6200)	ND(6400)	ND(510)	TR(560)	ND(550)	ND(560)	-
Indeno(1,2,3-cd)pyrene	TR(5800)	TR(5600)	TR(460)	TR(4500)	TR(6200)	ND(6400)	ND(510)	ND(560)	ND(550)	TR(560)	-
Isophorone	ND(5800)	ND(5600)	ND(460)	ND(4500)	ND(6200)	ND(6400)	ND(510)	ND(560)	ND(550)	ND(560)	-
Naphthalene	TR(5800)	ND(5600)	ND(460)	TR(4500)	ND(6200)	20000	ND(510)	9100	ND(550)	ND(560)	-
Nitrobenzene	ND(5800)	ND(5600)	ND(460)	ND(4500)	ND(6200)	ND(6400)	ND(510)	ND(560)	ND(550)	ND(560)	-
n-Nitrosodi-n-propylamine	ND(5800)	ND(5600)	ND(460)	ND(4500)	ND(6200)	ND(6400)	ND(510)	ND(560)	ND(550)	ND(560)	-
n-Nitrosodiphenylamine	ND(5800)	ND(5600)	ND(460)	ND(4500)	ND(6200)	ND(6400)	ND(510)	ND(560)	ND(550)	ND(560)	-
Pentachlorophenol	ND(5800)	ND(5600)	ND(460)	ND(4500)	ND(6200)	ND(6400)	ND(510)	ND(560)	ND(550)	ND(560)	-
Phenanthrene	23000	TR(5600)	TR(460)	35800	TR(6200)	TR(6400)	TR(510)	TR(560)	ND(550)	TR(560)	-
Phenol	ND(5800)	ND(5600)	ND(460)	ND(4500)	ND(6200)	ND(6400)	ND(510)	ND(560)	ND(550)	ND(560)	-
Pyrene	19000	TR(5600)	TR(460)	17300	TR(6200)	TR(6400)	TR(510)	TR(560)	ND(550)	TR(560)	-
1,2,4-Trichlorobenzene	ND(5800)	ND(5600)	ND(460)	ND(4500)	ND(6200)	ND(6400)	ND(510)	ND(560)	ND(550)	ND(560)	-

SAMPLE DESIGNATION	B401	B402	B403	B405	B406	B407	B409	B410	B411	B412	B903
SAMPLING DATE	9/11/1984	9/11/1984	9/13/1984	9/11/1984	9/12/1984	9/12/1984	9/12/1984	9/13/1984	9/13/1984	9/13/1984	1/8/1988
SAMPLE DEPTH (FT.)	1.0-3.0	0-6.0	0.5-6.5	1.5-5.5	0-6.0	0-2.0	0-6.0	0-10.0	0-4.0	0-6.0	9.0-11.0
EXPLORATION TYPE	BORING	BORING	BORING	BORING	BORING	BORING	BORING	BORING	BORING	BORING	BORING
SOIL TYPE	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL & SAND	FILL	FILL & SAND	SAND
TOTAL METALS (mg/kg)											
Antimony	ND(1)	ND(1)	ND(1.2)	ND(1.2)	ND(1.1)	ND(1.4)	ND(1.3)	ND(1.1)	ND(1.1)	ND(1)	-
Arsenic	11	15	20	15	9.8	11	9	13	11	7.1	-
Barium	-	-	-	-	-	-	-	-	-	-	-
Beryllium	ND(0.21)	0.48	0.41	ND(0.24)	ND(0.23)	ND(0.28)	ND(0.25)	ND(0.22)	ND(0.2)	ND(0.2)	-
Cadmium	1.5	ND(0.25)	0.39	2.2	ND(0.23)	ND(0.28)	ND(0.25)	ND(0.22)	ND(0.2)	ND(0.2)	-
Chromium	21	17	33	17	16	20	13	15	12	14	-
Copper	32	93	29	71	14	15	9.9	17	12	24	-
Iron	-	-	-	-	-	-	-	-	-	-	-
Lead	260	330	570	250	150	22	3.3	54	18	130	-
Mercury	0.093	0.4	0.16	0.31	0.023	0.034	ND(0.013)	0.067	0.06	0.2	-
Nickel	14	16	16	11	8.5	13	9.1	8.6	7.5	9	-
Selenium	ND(1.1)	1.3	ND(1.2)	ND(1.2)	ND(1.1)	ND(1.4)	ND(1.3)	ND(1.1)	ND(1.1)	ND(1)	-
Silver	ND(0.21)	ND(0.24)	ND(0.24)	ND(0.24)	0.98	1.2	1.3	1.1	ND(0.23)	ND(0.2)	-
Thallium	ND(1.1)	ND(1.2)	ND(1.2)	ND(1.2)	ND(1.1)	ND(1.4)	ND(1.3)	ND(1.1)	ND(1.1)	ND(1)	-
Zinc	440	140	570	760	72	59	22	49	34	91	-
EP TOXICITY	-	-	-	-	-	-	-	-	-	-	-
OIL & GREASE (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
PETROLEUM HYDROCARBON IDENTIFICATION (mg/kg)											
Quantity	-	-	-	-	-	-	-	-	-	-	-
Type	-	-	-	-	-	-	-	-	-	-	-
WASTE CHARACTERISTICS											
Total Cyanide (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Total Phenolics (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Formaldehyde (mg/kg)	ND(1)	ND(1)	ND(3.1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	-
Sulfate (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Corrosivity (pH)	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance (ushos/cm)	-	-	-	-	-	-	-	-	-	-	-
Biological Oxygen Demand (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids (mg/kg)	-	-	-	-	-	-	-	-	-	-	-
Chloride (mg/kg)	-	-	-	-	-	-	-	-	-	-	-

ABBREVIATIONS:

- - : Not analyzed, or invalid data as determined by the validation process.
ND: Compound not detected, detection limit not available.
TR: Compound detected below laboratory reporting limit; detection limit not available.
ND(2.5): Not detected; number in parentheses is equal to the laboratory Reporting Limit
A 54: Concentration is Approximate as determined by validation process.
TR (460): Trace Concentration. Compound detected at concentrations below the reporting limit; number in parentheses is equal to the laboratory reporting limit, detection limit.
PASS: Extracted metals not detected or detected below toxic levels.
VOCs: Volatile Organic Compounds
ABNs: Acid/Base/Neutral Extractables

NOTES:

1. This table includes only those compounds detected on the dates indicated.
2. " * " indicates trans 1,2-Dichlorothene and cis 1,2-dichloroethene grouped and reported as 1,2-Dichlorothene
3. " ** " Indicates possible contribution from ERCO matrix spiking solution.

TABLE V
SUMMARY OF EPH AND VPH DATA - 1999 to 2001
W.R.GRACE & CO. - CONN
CAMBRIDGE, MASSACHUSETTS
RTN 3-0277

SAMPLE DESIGNATION	MCP	B98-1 S3	B98-2 S3	B98-3 S2	B98-3 S3	B98-4 S3	B98-5 S2	B98-6 S4	B98-7 S2	B98-8 S2	B98-9 S2	B98-9 S3	B98-10 S3	B98-10 S4	B98-11 S3	B98-12 S3	B98-13 S5
SAMPLING DATE	Method 1	04-Jan-99	04-Jan-99	05-Jan-99	04-Jan-99	04-Jan-99	04-Jan-99	04-Jan-99	13-Jan-99	13-Jan-99	05-Jan-99	05-Jan-99	05-Jan-99	05-Jan-99	05-Jan-99	05-Jan-99	05-Jan-99
SAMPLE DEPTH	S1 Standards	4-8	4-6	2-4	4-6	4-6	2-4	6-8	4-8	4-8	2-4	4-6	4-6	6-8	4-6	4-6	8-12
SAMPLE TYPE		SAND	FILL/ORGANIC DEPOSITS	FILL	FILL	FILL	FILL	ORGANIC DEPOSITS	GRANULAR FILL/ORGANIC DEPOSITS	URBAN FILL/ORGANIC DEPOSITS	FILL	FILL/ORGANIC DEPOSITS	ORGANIC DEPOSITS/MARINE DEPOSITS	MARINE DEPOSITS	MARINE DEPOSITS	MARINE DEPOSITS	MARINE DEPOSITS
EPH (mg/kg)																	
C9-C18 Aliphatics	1000	ND	ND	320	*ND*	ND	ND	ND	ND	ND	ND	550	990	70	120	ND	ND
C19-C36 Aliphatics	2500	ND	95	2,400	*3,000*	89	110	270	250	380	68	160	45	140	190	ND	ND
C11-C22 Aromatics	800	48	73	ND	*16,000*	150	150	320	370	**1,000**	35	200	230	97	130	ND	ND
Target Analytes (mg/kg)																	
Acenaphthene	1000	ND	ND	ND	*ND*	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	100	ND	ND	ND	*ND*	ND	ND	ND	0.98	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	1000	ND	ND	ND	*ND*	ND	ND	ND	0.86	1.4	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	0.7	ND	ND	ND	*ND*	ND	0.58	1.7	**5.2**	2.2	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	0.7	ND	ND	ND	*ND*	ND	**0.79**	0.82	**6.8**	**1.6**	ND	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	0.7	ND	ND	ND	*ND*	ND	**1.1**	ND	**5.8**	**0.89**	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	1000	ND	ND	ND	*ND*	ND	0.6	6	9.1	ND	ND	4.4	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	7	ND	ND	ND	*ND*	ND	ND	ND	4.3	0.81	ND	ND	ND	ND	ND	ND	ND
Chrysene	7	ND	ND	ND	*ND*	ND	0.63	ND	5.1	1.9	ND	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	0.7	ND	ND	ND	*ND*	ND	ND	**0.94**	**0.98**	1.3	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	1000	ND	ND	ND	*ND*	0.85	1.9	ND	0.98	1.2	ND	ND	ND	ND	ND	ND	ND
Fluorene	1000	ND	ND	ND	*ND*	ND	ND	ND	**0.74**	ND	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	0.7	ND	ND	ND	*ND*	ND	ND	**1.9**	**5.3**	**5.5**	ND	**1.2**	ND	ND	ND	ND	ND
2-Methylnaphthalene	500	ND	ND	ND	*ND*	ND	ND	ND	ND	ND	ND	6.8	32	2.9	4.4	ND	ND
Naphthalene	100	ND	0.65	**5,300**	*2,200*	0.92	ND	ND	ND	1.1	ND	4.6	34	2.8	1.8	ND	ND
Phenanthrene	1000	ND	ND	ND	*ND*	ND	ND	ND	8.2	3.5	ND	ND	ND	ND	ND	ND	ND
Pyrene	700	ND	ND	ND	*ND*	0.6	1.2	ND	8.3	2.1	ND	ND	ND	ND	ND	ND	ND
VPH (mg/kg)																	
C5-C8 Aliphatics	100	ND	ND	ND	*ND*	ND	2	ND	ND	ND	6.3	**580**	**2,900**	**390**	23	ND	1.3
C9-C12 Aliphatics	1000	ND	ND	ND	*ND*	ND	ND	ND	ND	ND	2	420	960	190	74	ND	ND
C9-C10 Aromatics	100	ND	ND	ND	*ND*	ND	ND	ND	ND	ND	2.9	**420**	**1,900**	**380**	**180**	1.3	2.5
Target Analytes (mg/kg)																	
Benzene	40	ND	ND	ND	*ND*	ND	ND	ND	ND	ND	ND	ND	4.8	0.65	ND	ND	ND
Ethylbenzene	500	ND	ND	ND	*ND*	ND	ND	ND	ND	ND	0.19	24	95	17	0.61	ND	ND
Methyl tert-butyl Ether	100	ND	ND	ND	*ND*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	100	1.5	ND	**4,300**	*3,800*	1.8	ND	ND	ND	ND	ND	12	**100**	18	4.6	ND	ND
Toluene	500	ND	ND	ND	*ND*	ND	ND	ND	ND	ND	ND	6.4	170	15	0.32	0.32	ND
Xylenes, mixture	500	ND	ND	ND	*ND*	ND	ND	ND	ND	ND	0.37	71.8	**520**	88	2.6	0.17	0.35

NOTES AND ABBREVIATIONS:

1. EPH: Extractable Petroleum Hydrocarbons
2. VPH: Volatile Petroleum Hydrocarbons
3. ND (5) : compound or carbon range not detected above laboratory detection limit. number in parentheses is equal to one-half the detection limit.
4. Sample *B98-S3* shown in *Italics* has been removed from the data set. Bioremediation was conducted in this area to reduce the concentration of petroleum hydrocarbons in this area. The 2001 series EPH data is now representative of the conditions in this area of the Site.
5. An apparent over-recovery of the EPH aromatic fraction surrogate o-terphenyl occurred in sample B2001-3 S2B. This was due to the complete co-elution of the surrogate peak with a discreet peak associated with the sample. Results of the EPH carbon range C11-C22 analysis are valid.
6. -- Analysis not conducted.

TABLE V
SUMMARY OF EPH AND VPH DATA - 1999 to 200
W.R.GRACE & CO. - CONN
CAMBRIDGE, MASSACHUSETTS
RTN 3-0277

SAMPLE DESIGNATION	B98-14 S4	B98-15 S3	B98-16 S3	B98-17 S6	B98-18 S2	B98-19 S3	B98-20 S2	B98-23 S3	B98-23 S4	B98-23 S5	B98-23 S6	B98-23 S7	B98-26 S2	B98-57 S3	B98-62 S3	B98-65 S3
SAMPLING DATE	12-Jan-99	12-Jan-99	12-Jan-99	12-Jan-99	13-Jan-99	13-Jan-99	13-Jan-99	13-Jan-99	13-Jan-99	13-Jan-99	13-Jan-99	13-Jan-99	04-Jan-99	05-Jan-98	05-Jan-99	05-Jan-99
SAMPLE DEPTH	6-8	4-6	4-6	10-12	4-8	8-12	4-8	5-7	7-9	9-11	11-13	13-15	1-3	3-5	3-5	3-5
SAMPLE TYPE	MARINE DEPOSITS	FILL/ORGANIC DEPOSITS	FILL	FILL/MARINE DEPOSITS	ORGANIC DEPOSITS/MARINE DEPOSITS	MARINE DEPOSITS	MARINE DEPOSITS	GRANULAR FILL/ORGANIC DEPOSITS	ORGANIC DEPOSITS	DEPOSITS/ MARINE DEPOSITS	MARINE DEPOSITS	MARINE DEPOSITS	FILL	FILL	MARINE DEPOSITS	FILL/MARINE DEPOSITS
EPH (mg/kg)																
C9-C18 Aliphatics	ND	ND	ND	ND	ND	ND	94	ND	ND	ND	ND	ND	ND	550	260	570
C19-C36 Aliphatics	ND	78	100	66	ND	ND	880	430	230	ND	ND	ND	ND	330	57	40
C11-C22 Aromatics	ND	140	73	56	ND	ND	370	1,600	200	ND	ND	ND	41	480	75	130
Target Analytes (mg/kg)																
Acenaphthene	ND	ND	ND	ND	ND	ND	0.76	14	ND	ND	ND	ND	0.58	1.3	ND	ND
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	ND	ND	ND	ND	ND	ND	0.97	28	0.93	ND	ND	ND	ND	3.5	0.71	ND
Benzo(a)anthracene	ND	ND	0.74	ND	ND	ND	3	45	1.4	ND	ND	ND	ND	4	0.89	ND
Benzo(a)pyrene	ND	ND	0.77	ND	ND	ND	2.2	37	1.2	ND	ND	ND	ND	4	0.61	ND
Benzo(b)fluoranthene	ND	ND	ND	1.1	ND	ND	2.5	35	1.1	ND	ND	ND	ND	3.6	0.59	ND
Benzo(g,h,i)perylene	ND	ND	ND	0.89	ND	ND	1.5	19	1.7	ND	ND	ND	ND	2.5	ND	ND
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	ND	1.7	26	0.88	ND	ND	ND	ND	2.7	ND	ND
Chrysene	ND	ND	0.9	ND	ND	ND	3.1	47	1.4	ND	ND	ND	ND	5.1	0.79	ND
Dibenzo(a,h)anthracene	ND	ND	1.6	ND	ND	ND	ND	ND	3.2	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	ND	ND	1.9	ND	ND	ND	4.8	98	3.6	ND	ND	0.62	0.87	10	1.6	ND
Fluorene	ND	ND	ND	ND	ND	ND	1.3	22	0.87	ND	ND	ND	ND	3.1	ND	ND
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	ND	ND	1.6	17	ND	ND	ND	ND	ND	2.2	ND	ND
2-Methylnaphthalene	ND	ND	ND	ND	ND	0.79	2.1	ND	ND	ND	ND	ND	ND	1.9	3.6	19
Naphthalene	ND	ND	3.4	ND	ND	0.77	2.7	ND	0.89	ND	ND	ND	ND	27	2.2	17
Phenanthrene	ND	ND	1.8	ND	ND	ND	6	98	3.8	ND	ND	0.72	0.54	12	1.7	ND
Pyrene	ND	ND	1.6	ND	ND	ND	4	79	2.5	ND	ND	ND	0.75	9.1	1.2	ND
VPH (mg/kg)																
C5-C8 Aliphatics	1.2	3.6	1.3	30	6.5	35	150	4.7	ND	ND	ND	ND	ND	ND	95	1,200
C9-C12 Aliphatics	ND	ND	ND	ND	ND	26	100	ND	ND	ND	ND	ND	ND	17	130	280
C9-C10 Aromatics	ND	ND	ND	ND	ND	27	71	4	ND	ND	ND	ND	ND	25	390	730
Target Analytes (mg/kg)																
Benzene	ND	ND	ND	ND	ND	ND	0.23	ND	ND	ND	ND	ND	ND	ND	ND	4.4
Ethylbenzene	ND	ND	ND	ND	ND	1	5.2	ND	ND	ND	ND	ND	ND	ND	4.8	41
Methyl tert-butyl Ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	1.5	ND	ND	ND	1.1	4.5	3.3	ND	ND	ND	ND	ND	32	6.2	34
Toluene	ND	ND	ND	ND	ND	0.38	15	ND	ND	ND	ND	ND	ND	ND	0.99	5.9
Xylenes, mixture	ND	ND	ND	ND	ND	5.4	40	ND	ND	ND	ND	ND	ND	ND	10.8	190

NOTES AND ABBREVIATIONS:

1. EPH: Extractable Petroleum Hydrocarbons
2. VPH: Volatile Petroleum Hydrocarbons
3. ND (5) : compound or carbon range not detected above l
4. Sample B983-S3 shown in *Italics* has been removed fr
   of petroleum hydrocarbons in this area. The 2001 series
5. An apparent over-recovery of the EPH aromatic fraction a
   co-elution of the surrogate peak with a discreet peak asso
6. -- Analysis not conducted.

TABLE V
SUMMARY OF EPH AND VPH DATA - 1999 to 200
W.R.GRACE & CO. - CONN
CAMBRIDGE, MASSACHUSETTS
RTN 3-0277

SAMPLE DESIGNATION	B2001-1A S2A	B2001-1A S2B	B2001-2 S2A	B2001-2 S2B	B2001-3 S2A	B2001-3 S2B	B2001-3 S3A	B2001-4 S2A	B2001-4 S2B	B2001-4 S3A	B2001-5 S2A	B2001-5 S2B	B2001-5 S3A	B2001-6 S2A
SAMPLING DATE	15-Aug-01	15-Aug-01	15-Aug-01	15-Aug-01	15-Aug-01	15-Aug-01	15-Aug-01	15-Aug-01	15-Aug-01	15-Aug-01	15-Aug-01	15-Aug-01	15-Aug-01	15-Aug-01
SAMPLE DEPTH	4-6	6-8	4-6	6-8	4-6	6-8	8-10	4-6	6-8	8-10	4-6	6-7.5	8-10	4-6
SAMPLE TYPE	COHESIVE FILL	COHESIVE FILL	FILL	FILL	FILL	FILL/ORGANIC DEPOSITS	ORGANIC DEPOSITS	FILL	FILL/ORGANIC DEPOSITS	ORGANIC DEPOSITS/ESTUARINE DEPOSITS	FILL/ORGANIC DEPOSITS	ORGANIC DEPOSITS	ESTUARINE DEPOSITS	FILL
EPH (mg/kg)														
C9-C16 Aliphatics	ND (6.15)	ND (6.15)	ND (5.45)	ND (5.7)	ND (17.85)	772	ND (10)	ND (5.9)	ND (13.8)	ND (6.3)	ND (278)	ND (96)	ND (6.3)	ND (22.7)
C19-C36 Aliphatics	33.3	24.2	14.8	ND (5.7)	252	3800	ND (10)	26.4	74.8	ND (6.3)	ND (278)	ND (96)	ND (6.3)	ND (22.7)
C11-C22 Aromatics	69.4	76.6	16.5	ND (5.7)	486	11600	69.5	49.8	90.1	ND (6.3)	ND (278)	ND (96)	15.1	ND (22.7)
Target Analytes (mg/kg)														
Acenaphthene	ND (0.3085)	ND (0.3085)	ND (0.2715)	ND (0.284)	ND (0.89)	49.7	ND (0.5)	ND (0.294)	ND (0.695)	ND (0.3165)	ND (13.9)	ND (4.81)	ND (0.3165)	ND (1.135)
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	ND (0.3085)	1.26	ND (0.2715)	ND (0.284)	ND (0.89)	ND (15)	ND (0.5)	ND (0.294)	ND (0.695)	ND (0.3165)	ND (13.9)	ND (4.81)	ND (0.3165)	ND (1.135)
Benzo(a)pyrene	ND (0.3085)	1.43	ND (0.2715)	ND (0.284)	ND (0.89)	ND (15)	ND (0.5)	ND (0.294)	ND (0.695)	ND (0.3165)	ND (13.9)	ND (4.81)	ND (0.3165)	ND (1.135)
Benzo(b)fluoranthene	0.942	1.49	ND (0.2715)	ND (0.284)	ND (0.89)	ND (15)	ND (0.5)	ND (0.294)	ND (0.695)	ND (0.3165)	ND (13.9)	ND (4.81)	ND (0.3165)	ND (1.135)
Benzo(g,h,i)perylene	ND (0.3085)	0.684	ND (0.2715)	ND (0.284)	ND (0.89)	ND (15)	ND (0.5)	ND (0.294)	ND (0.695)	ND (0.3165)	ND (13.9)	ND (4.81)	ND (0.3165)	ND (1.135)
Benzo(k)fluoranthene	ND (0.3085)	1.64	ND (0.2715)	ND (0.284)	ND (0.89)	ND (15)	ND (0.5)	ND (0.294)	ND (0.695)	ND (0.3165)	ND (13.9)	ND (4.81)	ND (0.3165)	ND (1.135)
Chrysene	ND (0.3085)	1.34	ND (0.2715)	ND (0.284)	ND (0.89)	ND (15)	ND (0.5)	ND (0.294)	ND (0.695)	ND (0.3165)	ND (13.9)	ND (4.81)	ND (0.3165)	ND (1.135)
Dibenzo(a,h)anthracene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	1.11	2.52	ND (0.2715)	ND (0.284)	ND (0.89)	ND (15)	ND (0.5)	ND (0.294)	ND (0.695)	ND (0.3165)	ND (13.9)	ND (4.81)	ND (0.3165)	ND (1.135)
Fluorene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	1.22	0.90	ND (0.2715)	ND (0.284)	18.3	1640	14	ND (0.294)	3.92	1.1	1286	179	ND (0.3165)	ND (1.135)
Phenanthrene	ND (0.3085)	1.25	ND (0.2715)	ND (0.284)	ND (0.89)	ND (15)	ND (0.5)	ND (0.284)	ND (0.695)	ND (0.3165)	ND (13.9)	ND (4.81)	ND (0.3165)	ND (1.135)
Pyrene	0.887	2.12	ND (0.2715)	ND (0.284)	ND (0.89)	ND (15)	ND (0.5)	ND (0.294)	ND (0.695)	ND (0.3165)	ND (13.9)	ND (4.81)	ND (0.3165)	ND (1.135)
VPH (mg/kg)														
C5-C8 Aliphatics	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C9-C12 Aliphatics	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C9-C10 Aromatics	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Target Analytes (mg/kg)														
Benzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl tert-butyl Ether	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes, mixture	--	--	--	--	--	--	--	--	--	--	--	--	--	--

NOTES AND ABBREVIATIONS:

1. EPH: Extractable Petroleum Hydrocarbons
2. VPH: Volatile Petroleum Hydrocarbons
3. ND (5) : compound or carbon range not detected above t
4. Sample *B983-S3* shown in *Italics* has been removed fr of petroleum hydrocarbons in this area. The 2001 series
5. An apparent over-recovery of the EPH aromatic fraction s co-elution of the surrogate peak with a discreet peak asso
6. --: Analysis not conducted

TABLE V
SUMMARY OF EPH AND VPH DATA - 1999 to 200
W.R.GRACE & CO. - CONN
CAMBRIDGE, MASSACHUSETTS
RTN 3-0277

SAMPLE DESIGNATION	B2001-6 S2B	B2001-7 S3	B2001-8 S3	B2001-9A-1 S2	B2001-10 S2	B2001-11	B2001-12	B2001-13	B2002-1	B2002-2	B2002-3
SAMPLING DATE	15-Aug-01	25-Sep-01	25-Sep-01	25-Sep-01	25-Sep-01	28-Dec-01	28-Dec-01	28-Dec-01	13-Mar-02	13-Mar-02	13-Mar-02
SAMPLE DEPTH	6-8	6-8	6-8	4-6	4-6	6-8	6-8	6-8	6-8	6-8	6-8
SAMPLE TYPE	ALLUVIAL DEPOSITS/ORGANIC DEPOSITS	FILL	FILL	FILL	FILL						
EPH (mg/kg)											
C9-C18 Aliphatics	66.1	24.5	93.2	ND (232.5)	ND (65)	ND (367.5)	85.4	ND (31.25)	ND (268)	ND (96)	424
C19-C36 Aliphatics	2410	522	781	838	ND (65)	1610	306	ND (31.25)	1820	271	1670
C11-C22 Aromatics	535	384	1120	521	ND (65)	3070	2060	315	4450	631	3280
Target Analytes (mg/kg)											
Acenaphthene	ND (0.3085)	ND (0.3165)	ND (0.915)	ND (11.6)	ND (3.245)	ND (18.4)	ND (2.085)	ND (1.56)	49.2	ND (4.81)	22.6
Acenaphthylene	--	--	--	--	--	--	--	--	--	--	--
Anthracene	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	0.663	ND (0.3165)	ND (0.915)	ND (11.6)	ND (3.245)	ND (18.4)	ND (2.085)	ND (1.56)	ND (13.4)	ND (4.81)	ND (3.29)
Benzo(a)pyrene	ND (0.3085)	ND (0.3165)	ND (0.915)	ND (11.6)	ND (3.245)	ND (18.4)	ND (2.085)	ND (1.56)	ND (13.4)	ND (4.81)	ND (3.29)
Benzo(b)fluoranthene	ND (0.3085)	ND (0.3165)	ND (0.915)	ND (11.6)	ND (3.245)	ND (18.4)	ND (2.085)	ND (1.56)	ND (13.4)	ND (4.81)	ND (3.29)
Benzo(g,h,i)perylene	ND (0.3085)	ND (0.3165)	ND (0.915)	ND (11.6)	ND (3.245)	ND (18.4)	ND (2.085)	ND (1.56)	ND (13.4)	ND (4.81)	ND (3.29)
Benzo(k)fluoranthene	ND (0.3085)	ND (0.3165)	ND (0.915)	ND (11.6)	ND (3.245)	ND (18.4)	ND (2.085)	ND (1.56)	ND (13.4)	ND (4.81)	ND (3.29)
Chrysene	0.952	ND (0.3165)	ND (0.915)	ND (11.6)	ND (3.245)	ND (18.4)	ND (2.085)	ND (1.56)	ND (13.4)	ND (4.81)	ND (3.29)
Dibenzo(a,h)anthracene	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	2.69	ND (0.3165)	ND (0.915)	ND (11.6)	ND (3.245)	ND (18.4)	ND (2.085)	ND (1.56)	ND (13.4)	ND (4.81)	ND (3.29)
Fluorene	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	13.8	39.8	86.4	1440	381	437	181	147	745	126	323
Phenanthrene	2.66	ND (0.3165)	ND (0.915)	ND (11.6)	ND (3.245)	ND (18.4)	ND (2.085)	ND (1.56)	ND (13.4)	ND (4.81)	ND (3.29)
Pyrene	1.93	ND (0.3165)	ND (0.915)	ND (11.6)	ND (3.245)	ND (18.4)	ND (2.085)	ND (1.56)	ND (13.4)	ND (4.81)	ND (3.29)
VPH (mg/kg)											
C5-C8 Aliphatics	--	--	--	--	--	--	--	--	--	--	--
C9-C12 Aliphatics	--	--	--	--	--	--	--	--	--	--	--
C9-C10 Aromatics	--	--	--	--	--	--	--	--	--	--	--
Target Analytes (mg/kg)											
Benzene	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	--	--	--	--	--	--	--	--	--	--	--
Methyl tert-butyl Ether	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--	--	--	--	--	--
Toluene	--	--	--	--	--	--	--	--	--	--	--
Xylenes, mixture	--	--	--	--	--	--	--	--	--	--	--

NOTES AND ABBREVIATIONS:

1. EPH: Extractable Petroleum Hydrocarbons
2. VPH: Volatile Petroleum Hydrocarbons
3. ND (5) : compound or carbon range not detected above t
4. Sample ***B983-S3*** shown in *Italics* has been removed fr
   of petroleum hydrocarbons in this area. The 2001 series
5. An apparent over-recovery of the EPH aromatic fraction s
   co-elution of the surrogate peak with a discreet peak asso
6. -- Analysis not conducted.

TABLE VI
SUMMARY OF ASBESTOS SOIL ANALYSIS - POLARIZED LIGHT MICROSCOPY
W.R. GRACE & CO. - CONN.
CAMBRIDGE, MASSACHUSETTS
RTN 3-0277

BORING NUMBER	SAMPLE NUMBER	SAMPLE DATE	SAMPLE DEPTH (feet bgs)	PERCENT ASBESTOS
AB-1	S1	May-98	0.0-2.0	2
	S2	May-98	2.0-4.0	TRACE
	S3	May-98	4.0-6.0	--
	S4	May-98	6.0-8.0	--
AB-2	S1	May-98	0.0-2.0	3
	S2	May-98	2.0-4.0	--
	S3	May-98	4.0-6.0	--
	S4	May-98	6.0-8.0	--
AB-3	S1	May-98	0.0-2.0	7
	S2	May-98	2.0-4.0	10
	S3	May-98	4.0-6.0	TRACE
	S4	May-98	6.0-8.0	--
AB-3A	S1	Sep-03	0.5-5.0	TRACE
AB-3A	S2	Sep-03	0.5-5.0	TRACE
AB-3A	S3	Sep-03	0.5-5.0	TRACE
AB-3A	S4	Sep-03	0.5-5.0	1
AB-3A	S5	Sep-03	0.5-5.0	TRACE
AB-3B	S1	Sep-03	0.5-5.0	TRACE
AB-3B	S2	Sep-03	0.5-5.0	1**
AB-3B	S3	Sep-03	0.5-5.0	TRACE
AB-3B	S4	Sep-03	0.5-5.0	TRACE
AB-3B	S5	Sep-03	0.5-5.0	TRACE
AB-3C	S1	Sep-03	0.5-5.0	NVA
AB-3C	S2	Sep-03	0.5-5.0	TRACE
AB-3C	S3	Sep-03	0.5-5.0	TRACE
AB-3C	S4	Sep-03	0.5-5.0	TRACE
AB-3C	S5	Sep-03	0.5-5.0	TRACE
AB-3D	S1	Sep-03	0.5-5.0	NVA
AB-3D	S2	Sep-03	0.5-5.0	NVA
AB-3D	S3	Sep-03	0.5-5.0	TRACE
AB-3D	S4	Sep-03	0.5-5.0	TRACE
AB-3D	S5		0.5-5.0	NVA
AB-4	S1	May-98	0.0-2.0	--
	S2	May-98	2.0-4.0	--
	S3	May-98	4.0-6.0	TRACE
	S4	May-98	6.0-8.0	--
AB-5	S1	May-98	0.0-2.0	TRACE
	S2	May-98	2.0-4.0	2
	S3	May-98	4.0-6.0	TRACE
	S4	May-98	6.0-8.0	TRACE
AB-6	S1	May-98	0.0-2.0	5
	S2	May-98	2.0-4.0	TRACE
	S3	May-98	4.0-6.0	--
	S4	May-98	6.0-8.0	--
AB-7	S1	May-98	0.0-2.0	TRACE
	S2	May-98	2.0-4.0	5
	S3	May-98	4.0-6.0	TRACE
	S4	May-98	6.0-8.0	TRACE
AB-8	S1,	May-98	0.0-2.0	12
	S2	May-98	2.0-4.0	8
	S3	May-98	4.0-6.0	TRACE
	S4	May-98	6.0-8.0	--
AB-8A	S1	Sep-03	0.5-5.0	3
AB-8A	S2	Sep-03	0.5-5.0	3
AB-8A	S3	Sep-03	0.5-5.0	2
AB-8A	S4	Sep-03	0.5-5.0	2
AB-8A	S5	Sep-03	0.5-5.0	2

TABLE VI
SUMMARY OF ASBESTOS SOIL ANALYSIS - POLARIZED LIGHT MICROSCOPY
W.R. GRACE & CO. - CONN.
CAMBRIDGE, MASSACHUSETTS
RTN 3-0277

BORING NUMBER	SAMPLE NUMBER	SAMPLE DATE	SAMPLE DEPTH (feet bgs)	PERCENT ASBESTOS
AB-8B	S1	Sep-03	0.5-5.0	3
AB-8B	S2	Sep-03	0.5-5.0	TRACE
AB-8B	S3	Sep-03	0.5-5.0	TRACE
AB-8B	S4	Sep-03	0.5-5.0	TRACE
AB-8B	S5	Sep-03	0.5-5.0	TRACE
AB-8C	S1	Sep-03	0.5-5.0	1
AB-8C	S2	Sep-03	0.5-5.0	TRACE
AB-8C	S3	Sep-03	0.5-5.0	TRACE
AB-8C	S4	Sep-03	0.5-5.0	TRACE
AB-8C	S5	Sep-03	0.5-5.0	1
AB-8D	S1	Sep-03	0.5-5.0	1
AB-8D	S2	Sep-03	0.5-5.0	2
AB-8D	S3	Sep-03	0.5-5.0	4
AB-8D	S4	Sep-03	0.5-5.0	3
AB-8D	S5	Sep-03	0.5-5.0	1
AB-9	S1	May-98	0.0-2.0	--
	S2	May-98	2.0-4.0	--
	S3	May-98	4.0-6.0	--
	S4	May-98	6.0-8.0	--
AB-10	S1	May-98	0.0-2.0	--
	S2	May-98	2.0-4.0	--
	S3	May-98	4.0-6.0	--
	S4	May-98	6.0-8.0	--
AB-11	S1	May-98	0.0-2.0	TRACE
	S2	May-98	2.0-4.0	TRACE
	S3	May-98	4.0-6.0	TRACE
	S4	May-98	6.0-8.0	--
AB-12	S1	May-98	0.0-2.0	--
	S2	May-98	2.0-4.0	--
	S3	May-98	4.0-6.0	--
	S4	May-98	6.0-8.0	--
AB-13	S1	May-98	0.0-2.0	--
	S2	May-98	2.0-4.0	--
	S3	May-98	4.0-6.0	--
	S4	May-98	6.0-8.0	--
AB-14	S1	May-98	0.0-2.0	5
	S2	May-98	2.0-4.0	3
	S3	May-98	4.0-6.0	--
	S4	May-98	6.0-8.0	--
AB2-1	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-2	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-3	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-4	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA

TABLE VI
SUMMARY OF ASBESTOS SOIL ANALYSIS - POLARIZED LIGHT MICROSCOPY
W.R. GRACE & CO. - CONN.
CAMBRIDGE, MASSACHUSETTS
RTN 3-0277

BORING NUMBER	SAMPLE NUMBER	SAMPLE DATE	SAMPLE DEPTH (feet bgs)	PERCENT ASBESTOS
AB2-4A	S1	Sep-03	0.5-5.0	TRACE
AB2-4A	S2	Sep-03	0.5-5.0	1
AB2-4A	S3	Sep-03	0.5-5.0	TRACE
AB2-4A	S4	Sep-03	0.5-5.0	TRACE
AB2-4A	S5	Sep-03	0.5-5.0	TRACE
AB2-4B	S1	Sep-03	0.5-5.0	1
AB2-4B	S2	Sep-03	0.5-5.0	TRACE
AB2-4B	S3	Sep-03	0.5-5.0	1
AB2-4B	S4	Sep-03	0.5-5.0	TRACE
AB2-4B	S5	Sep-03	0.5-5.0	TRACE
AB2-4C	S1	Sep-03	0.5-5.0	TRACE
AB2-4C	S2	Sep-03	0.5-5.0	TRACE
AB2-4C	S3	Sep-03	0.5-5.0	TRACE
AB2-4C	S4	Sep-03	0.5-5.0	TRACE
AB2-4C	S5	Sep-03	0.5-5.0	TRACE
AB2-4D	S1	Sep-03	0.5-5.0	TRACE
AB2-4D	S2	Sep-03	0.5-5.0	TRACE
AB2-4D	S3	Sep-03	0.5-5.0	TRACE
AB2-4D	S4	Sep-03	0.5-5.0	TRACE
AB2-4D	S5	Sep-03	0.5-5.0	TRACE
AB2-5	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	NVA
AB2-6	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-7	S2	Dec-98	0.5-4.0	NVA
AB2-8	S2	Dec-98	0.5-4.0	NVA
AB2-9	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-10	S2	Dec-98	0.5-4.0	NVA
AB2-11	S2	Dec-98	0.5-4.0	NVA
AB2-12	S2	Dec-98	0.5-4.0	NVA
AB2-13	S2	Dec-98	0.5-4.0	2
AB2-14	S2	Dec-98	0.5-4.0	TRACE
AB2-15	S2	Dec-98	0.5-4.0	NVA
AB2-15A	S1	Sep-03	0.5-5.0	TRACE
AB2-15A	S2	Sep-03	0.5-5.0	TRACE
AB2-15A	S3	Sep-03	0.5-5.0	NVA
AB2-15A	S4	Sep-03	0.5-5.0	NVA
AB2-15A	S5	Sep-03	0.5-5.0	NVA
AB2-15B	S1	Sep-03	0.5-5.0	TRACE
AB2-15B	S2	Sep-03	0.5-5.0	TRACE
AB2-15B	S3	Sep-03	0.5-5.0	NVA
AB2-15B	S4	Sep-03	0.5-5.0	NVA
AB2-15B	S5	Sep-03	0.5-5.0	TRACE
AB2-15C	S1	Sep-03	0.5-5.0	NVA
AB2-15C	S2	Sep-03	0.5-5.0	NVA
AB2-15C	S3	Sep-03	0.5-5.0	NVA
AB2-15C	S4	Sep-03	0.5-5.0	TRACE
AB2-15C	S5	Sep-03	0.5-5.0	TRACE

TABLE VI
SUMMARY OF ASBESTOS SOIL ANALYSIS - POLARIZED LIGHT MICROSCOPY
W.R. GRACE & CO. - CONN.
CAMBRIDGE, MASSACHUSETTS
RTN 3-0277

BORING NUMBER	SAMPLE NUMBER	SAMPLE DATE	SAMPLE DEPTH (feet bgs)	PERCENT ASBESTOS
AB2-15D	S1	Sep-03	0.5-5.0	NVA
AB2-15D	S2	Sep-03	0.5-5.0	NVA
AB2-15D	S3	Sep-03	0.5-5.0	TRACE
AB2-15D	S4	Sep-03	0.5-5.0	NVA
AB2-15D	S5	Sep-03	0.5-5.0	TRACE
AB2-16	S2	Dec-98	0.5-4.0	NVA
AB2-17	S2	Dec-98	0.5-4.0	NVA
AB2-18	S2	Dec-98	0.5-4.0	NVA
AB2-19	S2	Dec-98	0.5-4.0	NVA
AB2-20	S2	Dec-98	0.5-4.0	NVA
AB2-21	S2	Dec-98	0.5-4.0	NVA
AB2-22	S2	Dec-98	0.5-4.0	NVA
AB2-23	S2	Dec-98	0.5-4.0	NVA
AB2-24	S2	Dec-98	0.5-4.0	NVA
AB2-25	S2	Dec-98	0.5-4.0	NVA
AB2-26	S2	Dec-98	0.5-4.0	NVA
AB2-27	S2	Dec-98	0.5-4.0	NVA
AB2-28	S2	Dec-98	0.5-4.0	NVA
AB2-29	S2	Dec-98	0.5-4.0	NVA
AB2-30	S2	Dec-98	0.5-4.0	NVA
AB2-31	S2	Dec-98	0.5-4.0	3
AB2-32	S2	Dec-98	0.5-4.0	2
AB2-33	S2	Dec-98	0.5-4.0	2
AB2-34	S2	Dec-98	0.5-4.0	TRACE
AB2-35	S2	Dec-98	0.5-4.0	NVA
AB2-36	S2	Dec-98	0.5-4.0	NVA
AB2-37	S2	Dec-98	0.5-4.0	NVA
AB2-38	S2	Dec-98	0.5-4.0	NVA
AB2-38A	S1	Sep-03	0.5-5.0	NVA
AB2-38A	S2	Sep-03	0.5-5.0	NVA
AB2-38A	S3	Sep-03	0.5-5.0	NVA
AB2-38A	S4	Sep-03	0.5-5.0	NVA
AB2-38A	S5	Sep-03	0.5-5.0	TRACE
AB2-38B	S1	Sep-03	0.5-5.0	TRACE
AB2-38B	S2	Sep-03	0.5-5.0	NVA
AB2-38B	S3	Sep-03	0.5-5.0	TRACE
AB2-38B	S4	Sep-03	0.5-5.0	TRACE
AB2-38B	S5	Sep-03	0.5-5.0	TRACE
AB2-38C	S1	Sep-03	0.5-5.0	TRACE
AB2-38C	S2	Sep-03	0.5-5.0	TRACE
AB2-38C	S3	Sep-03	0.5-5.0	NVA
AB2-38C	S4	Sep-03	0.5-5.0	TRACE
AB2-38C	S5	Sep-03	0.5-5.0	TRACE
AB2-38D	S1	Sep-03	0.5-5.0	TRACE
AB2-38D	S2	Sep-03	0.5-5.0	TRACE
AB2-38D	S3	Sep-03	0.5-5.0	TRACE
AB2-38D	S4	Sep-03	0.5-5.0	TRACE
AB2-38D	S5	Sep-03	0.5-5.0	TRACE
AB2-39	S2	Dec-98	0.5-4.0	TRACE
AB2-40	S2	Dec-98	0.5-4.0	NVA
AB2-41	S2	Dec-98	0.5-4.0	NVA
AB2-42	S2	Dec-98	0.5-4.0	NVA
AB2-43	S2	Dec-98	0.5-4.0	NVA
AB2-44	S2	Dec-98	0.5-4.0	NVA
AB2-45	S2	Dec-98	0.5-4.0	NVA
AB2-46	S2	Dec-98	0.5-4.0	NVA
AB2-47	S2	Dec-98	0.5-4.0	NVA
AB2-48	S2	Dec-98	0.5-4.0	NVA
AB2-49	S2	Dec-98	0.5-4.0	NVA
AB2-50	S2	Dec-98	0.5-4.0	1
AB2-51	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA

TABLE VI
SUMMARY OF ASBESTOS SOIL ANALYSIS - POLARIZED LIGHT MICROSCOPY
W.R. GRACE & CO. - CONN.
CAMBRIDGE, MASSACHUSETTS
RTN 3-0277

BORING NUMBER	SAMPLE NUMBER	SAMPLE DATE	SAMPLE DEPTH (feet bgs)	PERCENT ASBESTOS
AB2-52	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-53	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-54	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-55	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	NVA
AB2-56	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	NVA
AB2-57	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	1
AB2-58	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	NVA
AB2-59	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	NVA
AB2-60	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	NVA
AB2-61	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-62	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-63	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-64	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-65	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-66	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-67	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-68	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-69	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-70	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-71	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-72	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-73	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-74	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-75	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-76	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-77	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-78	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-79	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-80	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA

TABLE VI
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W.R. GRACE & CO. - CONN.
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BORING NUMBER	SAMPLE NUMBER	SAMPLE DATE	SAMPLE DEPTH (feet bgs)	PERCENT ASBESTOS
AB2-81	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-82	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	NVA
AB2-83	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-84	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-85	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-86	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-87	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-88	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-89	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-90	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-91	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-92	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-93	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	NVA
AB2-94	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-95	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-96	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-97	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-98	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-99	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	2
AB2-100	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	NVA
AB2-101	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-102	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	NVA
AB2-103	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-104	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-105	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-106	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	3
AB2-107	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-108	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA

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BORING NUMBER	SAMPLE NUMBER	SAMPLE DATE	SAMPLE DEPTH (feet bgs)	PERCENT ASBESTOS
AB2-109	S1	Dec-98	0.0-0.5	NVA
AB2-110	S1	Dec-98	0.0-0.5	NVA
AB2-117	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-118	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-119	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-121	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-122	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-123	S1	Dec-98	0.0-0.5	2
AB2-124	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	--
AB2-125	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-126	S1	Dec-98	0.0-0.5	NVA
AB2-127	S1	Dec-98	0.0-0.5	2
AB2-128	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-129	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-130	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-131	S1	Dec-98	0.0-0.5	NVA
AB2-132	S1	Dec-98	0.5-4.0	NVA
AB2-135	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	4
AB2-136	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	7
AB2-137	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-138	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-139	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-140	S1	Dec-98	0.0-0.5	NVA
AB2-140	S2	Dec-98	0.5-4.0	NVA
AB2-141	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-142	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-143	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-147	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-148	S1	Dec-98	0.0-0.5	NVA
AB2-149	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-150	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-151	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-152	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-153	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-154	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-155	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA

TABLE VI
SUMMARY OF ASBESTOS SOIL ANALYSIS - POLARIZED LIGHT MICROSCOPY
W.R. GRACE & CO. - CONN.
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BORING NUMBER	SAMPLE NUMBER	SAMPLE DATE	SAMPLE DEPTH (feet bgs)	PERCENT ASBESTOS
AB2-156	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-157	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-158	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-159	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-160	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-161	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-162	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-162A	S1	Dec-98	0.0-0.5	NVA
AB2-163	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-164	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	2
AB2-165	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-166	S1	Dec-98	0.0-0.5	NVA
AB2-167	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-168	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-169	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-170	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-171	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-172	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-173	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-174	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-175	S1	Dec-98	0.0-0.5	NVA
AB2-176	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	–
AB2-177	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-178	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-179	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-180A	S1	Dec-98	0.0-0.5	NVA
AB2-181	S1	Dec-98	0.0-0.5	NVA
AB2-181A	S1	Dec-98	0.0-0.5	NVA
AB2-182	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-183	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-184	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-185	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-186	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA

TABLE VI
SUMMARY OF ASBESTOS SOIL ANALYSIS - POLARIZED LIGHT MICROSCOPY
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CAMBRIDGE, MASSACHUSETTS
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BORING NUMBER	SAMPLE NUMBER	SAMPLE DATE	SAMPLE DEPTH (feet bgs)	PERCENT ASBESTOS
AB2-187	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-188	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-189	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-190	S1	Dec-98	0.0-0.5	-
	S2	Dec-98	0.5-4.0	NVA
AB2-191	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	TRACE
AB2-192	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-193	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-194	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	1
AB2-195	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-196	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-197	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-198	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-199	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-200	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-201	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-202	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-203	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	4
AB2-204	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-205	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-206	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-207	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	2
AB2-208	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-209	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-210	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-211	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	2
AB2-212	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-213	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-214	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-215	S1	Dec-98	0.0-0.5	-
	S2	Dec-98	0.5-4.0	NVA
AB2-216	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA

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BORING NUMBER	SAMPLE NUMBER	SAMPLE DATE	SAMPLE DEPTH (feet bgs)	PERCENT ASBESTOS
AB2-217	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-218	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-219	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-220	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-221	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-222	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-223	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-224	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	NVA
AB2-225	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-226	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	NVA
AB2-227	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	2
AB2-228	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-229	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-230	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-231	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-232	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-233	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-234	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-235	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	NVA
AB2-236	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-237	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-238	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	1
AB2-239	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-240	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-241	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-242	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-243	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-244	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-245	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-246	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA

TABLE VI
SUMMARY OF ASBESTOS SOIL ANALYSIS - POLARIZED LIGHT MICROSCOPY
W.R. GRACE & CO. - CONN.
CAMBRIDGE, MASSACHUSETTS
RTN 3-0277

BORING NUMBER	SAMPLE NUMBER	SAMPLE DATE	SAMPLE DEPTH (feet bgs)	PERCENT ASBESTOS
AB2-247	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-249A	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-249B	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-250	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-251	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-252	S1	Dec-98	0.0-0.5	NVA
AB2-252	S2	Dec-98	0.5-4.0	NVA
AB2-253	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-254	S1	Dec-98	0.0-0.5	TRACE
	S2	Dec-98	0.5-4.0	NVA
AB2-255	S1	Dec-98	0.0-0.5	2
	S2	Dec-98	0.5-4.0	TRACE
AB2-256	S1	Dec-98	0.0-0.5	TRACE
	S2	Dec-98	0.5-4.0	NVA
AB2-257	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-258	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-259	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-260	S1	Dec-98	0.0-0.5	TRACE
	S2	Dec-98	0.5-4.0	NVA
AB2-261	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-262	S1	Dec-98	0.0-0.5	NVA
AB2-263	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-264	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-265	S1	Dec-98	0.0-0.5	NVA
AB2-266	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-267	S1	Dec-98	0.0-0.5	5
	S2	Dec-98	0.5-4.0	NVA
AB2-268	S1	Dec-98	0.0-0.5	NVA
AB2-269	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-270	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-271	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-272	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-273	S1	Dec-98	0.0-0.5	-
	S2	Dec-98	0.5-4.0	NVA
AB2-274	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-275	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA

TABLE VI
SUMMARY OF ASBESTOS SOIL ANALYSIS - POLARIZED LIGHT MICROSCOPY
W.R. GRACE & CO. - CONN.
CAMBRIDGE, MASSACHUSETTS
RTN 3-0277

BORING NUMBER	SAMPLE NUMBER	SAMPLE DATE	SAMPLE DEPTH (feet bgs)	PERCENT ASBESTOS
AB2-276	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-277	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-278	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-279	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	t
AB2-280	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	NVA
AB2-281	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-282	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	--
AB2-283	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	3
AB2-284	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	5
AB2-285	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-286	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	NVA
AB2-287	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-288	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-289	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-290	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-291	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-292	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	NVA
AB2-293	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-294	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-295	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-296	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-297	S1	Dec-98	0.0-0.5	1
	S2	Dec-98	0.5-4.0	NVA
AB2-298	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-299	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-300	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-301	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-302	S1	Dec-98	0.0-0.5	NVA
AB2-303	S1	Dec-98	0.0-0.5	NVA
AB2-304	S1	Dec-98	0.0-0.5	NVA
AB2-305	S1	Dec-98	0.0-0.5	NVA
AB2-306	S1	Dec-98	0.0-0.5	NVA
AB2-307	S1	Dec-98	0.0-0.5	NVA
AB2-308	S1	Dec-98	0.0-0.5	NVA
AB2-309	S1	Dec-98	0.0-0.5	NVA
AB2-310	S1	Dec-98	0.0-0.5	NVA
AB2-311	S1	Dec-98	0.0-0.5	NVA
AB2-312	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	NVA
AB2-313	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-314	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	NVA
AB2-315	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	NVA

TABLE VI
SUMMARY OF ASBESTOS SOIL ANALYSIS - POLARIZED LIGHT MICROSCOPY
W.R. GRACE & CO. - CONN.
CAMBRIDGE, MASSACHUSETTS
RTN 3-0277

BORING NUMBER	SAMPLE NUMBER	SAMPLE DATE	SAMPLE DEPTH (feet bgs)	PERCENT ASBESTOS
AB2-316	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	NVA
AB2-317	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	NVA
AB2-318	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	NVA
AB2-319	S1	Dec-98	0.0-0.5	--
	S2	Dec-98	0.5-4.0	NVA
AB2-320	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-321	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-322	S1	Dec-98	0.0-0.5	NVA
AB2-323	S1	Dec-98	0.0-0.5	NVA
AB2-324	S1	Dec-98	0.0-0.5	NVA
AB2-325	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-326	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-327	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-328	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-329	S1	Dec-98	0.0-0.5	NVA
AB2-330	S1	Dec-98	0.0-0.5	NVA
AB2-331	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-332	S1	Dec-98	0.0-0.5	NVA
AB2-333	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-334	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-335	S1	Dec-98	0.0-0.5	NVA
AB2-336	S1	Dec-98	0.0-0.5	NVA
AB2-337	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-338	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-339	S1	Dec-98	0.0-0.5	NVA
AB2-340	S1	Dec-98	0.0-0.5	NVA
AB2-341	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-342	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-343	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-344	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-345	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-346	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-347	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-348	S1	Dec-98	0.0-0.5	NVA
	S2	Dec-98	0.5-4.0	NVA
AB2-349	S1	Dec-98	0.0-4.0	NVA
	S2	Dec-98	4.0-8.0	NVA
	S3	Dec-98	8.0-12.0	NVA
AB2-350	S1	Dec-98	0.0-4.0	NVA
	S2	Dec-98	4.0-8.0	NVA
	S3	Dec-98	8.0-12.0	NVA
AB2-351	S1	Dec-98	0.0-4.0	NVA
	S2	Dec-98	4.0-8.0	NVA
	S3	Dec-98	8.0-12.0	NVA
AB2-352	S1	Dec-98	0.0-4.0	NVA
	S2	Dec-98	4.0-8.0	NVA
	S3	Dec-98	8.0-12.0	NVA
AB2-353	S1	Dec-98	0.0-4.0	NVA
	S2	Dec-98	4.0-8.0	NVA
	S3	Dec-98	8.0-12.0	NVA
AB2-354	S1	Dec-98	0.0-4.0	NVA
	S2	Dec-98	4.0-8.0	NVA

TABLE VI
SUMMARY OF ASBESTOS SOIL ANALYSIS - POLARIZED LIGHT MICROSCOPY
W.R. GRACE & CO. - CONN.
CAMBRIDGE, MASSACHUSETTS
RTN 3-0277

BORING NUMBER	SAMPLE NUMBER	SAMPLE DATE	SAMPLE DEPTH (feet bgs)	PERCENT ASBESTOS
	S3	Dec-98	8.0-12.0	NVA
AB2-355	S1	Dec-98	0.0-4.0	1
	S2	Dec-98	4.0-8.0	NVA
	S3	Dec-98	8.0-12.0	NVA
AB2-356	S1	Dec-98	0.0-4.0	NVA
	S2	Dec-98	4.0-8.0	NVA
	S3	Dec-98	8.0-12.0	NVA

NOTES AND ABBREVIATIONS:

1. The analyses utilized by W.R. Grace to determine Percent Asbestos is the Protocol for Determining Asbestos Content in River Sediments and Soil Samples, US EPA Region 1, in conjunction with EPA Method 600/R-93-116 Polarized Light Microscopy, July 1993.
2. feet bgs: feet below ground surface.
3. NVA: no visible asbestos.
4. TRACE: less than 1 percent asbestos detected

TABLE VII
SUMMARY OF GROUNDWATER OHM COMPOUNDS OF CONCERN 1984 to 2003
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

Sample ID	Date Sampled	Acetone	Benzene	Carbon Disulfide	Chloro-form	1,1-DCA	1,2-DCA	1,2-DCE	Ethyl-benzene	Toluene	1,1,1-TCA	Naphthalene	Methylene Chloride	MIBK	MTBE	PCE	TCE	Total Xylenes
B204-OW	5/20/1987	ND (500)	ND (6)	ND (20)	ND (1.6)	ND (4.7)	ND (2.8)	ND (1.6)	ND (7.2)	ND (6)	ND (3.8)	ND (1.6)	ND (2.8)	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	8/11/1987	ND (500)	ND (6)	ND (20)	ND (1.6)	ND (4.7)	ND (2.8)	ND (1.6)	ND (7.2)	ND (6)	ND (3.8)	ND (1.6)	400 J	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	11/12/1987	ND (500)	ND (6)	ND (20)	ND (1.6)	ND (4.7)	ND (2.8)	ND (1.6)	ND (7.2)	ND (6)	ND (3.8)	ND (1.6)	ND (2.8)	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	11/18/1998	ND (100)	ND (1)	ND (5)	ND (5)	ND (5)	ND (1)	ND (5)	ND (5)	ND (5)	ND (5)	5	ND (5)	ND (50)	ND	ND (5)	ND (5)	ND (5)
	10/19/1999	ND (5)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2)	ND (5)	-	ND (0.5)	ND (0.5)	ND (0.5)
	12/18/2000	ND (5)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.5)	ND (5)	-	ND (0.5)	ND (0.5)	ND (0.5)
	11/16/2001	ND (20)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
	2/13/2003	ND (20)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
B207-OW	3/7/1985	ND (25)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	-	ND (2)	ND (10)	-	ND (2)	ND (2)	ND (2)
	1/20/1988	ND	49	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	ND	ND
	11/17/1998	ND (100)	27	5	ND (5)	13	ND (1)	6	9	ND (5)	ND (5)	110	ND (5)	ND (50)	ND	ND (5)	ND (5)	ND (5)
	1/19/1999	-	-	-	-	-	-	-	-	-	-	270	-	-	-	-	-	-
	10/18/1999	400	17	ND (50)	ND (5)	8	ND (5)	9	12	ND (5)	ND (5)	140	ND (20)	ND (50)	-	ND (5)	ND (5)	ND (5)
	12/18/2000	ND (25)	14	ND (25)	ND (2.5)	10	ND (2.5)	7	8	ND (2.5)	ND (2.5)	110	ND (13)	ND (25)	-	ND (2.5)	ND (2.5)	ND (2.5)
	11/16/2001	ND (25)	12	ND (25)	ND (2.5)	8	ND (2.5)	3	ND (2.5)	ND (2.5)	ND (2.5)	20	ND (13)	ND (25)	-	ND (2.5)	ND (2.5)	ND (2.5)
	2/13/2003	ND (100)	ND (2.5)	ND (25)	ND (2.5)	7	ND (2.5)	3	5	ND (2.5)	ND (2.5)	15	ND (25)	ND (25)	6	ND (2.5)	ND (2.5)	ND (2.5)
B212-OW	9/11/1984	4500	TR(A)	TR(A)	ND (125)	ND (125)	ND (125)	ND (125)	470	ND (125)	ND (125)	2100	150	-	-	ND (125)	ND (125)	ND (125)
	12/2/1986	12000	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	24000	ND (500)	ND (500)	-	ND (100)	ND (100)	ND (100)
	5/20/1987	ND (500)	ND (6)	ND (20)	ND (1.6)	ND (4.7)	ND (2.8)	ND (1.6)	715	ND (6)	ND (3.8)	4590	ND (2.8)	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	11/12/1987	ND (500)	200	ND (20)	ND (1.6)	ND (4.7)	ND (2.8)	ND (1.6)	ND (7.2)	ND (6)	ND (3.8)	890	ND (2.8)	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	5/16/1988	-	10.3	-	ND (1.6)	ND (4.7)	ND (2.8)	ND (1.6)	600	ND (6)	ND (3.8)	3500	ND (2.8)	-	-	ND (4.1)	ND (1.9)	-
	4/5/1990	-	4	-	ND (1)	ND (1)	ND (1)	3	210	ND (1)	ND (1)	3600	ND (5)	-	-	ND (1)	ND (1)	-
	9/27/1990	ND (20)	3.5	ND (1)	ND (1)	ND (1)	ND (1)	1.2	160	ND (1)	ND (1)	6000	ND (5)	ND (20)	-	ND (1)	ND (1)	130
	3/21/1991	-	ND (5)	-	ND (5)	ND (5)	ND (5)	ND (5)	180	ND (5)	ND (5)	45000	ND (25)	-	-	ND (5)	ND (5)	-
	9/11/1991	110	ND (5)	110	ND (5)	ND (5)	ND (5)	ND (5)	66	ND (5)	ND (5)	2800	ND (25)	ND (100)	-	ND (5)	ND (5)	ND (5)
	3/16/1992	ND (2000)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	3500	ND (500)	ND (2000)	-	ND (100)	ND (100)	ND (100)
	9/16/1992	-	ND (50)	-	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	4600	ND (250)	-	-	ND (50)	ND (50)	-
	4/2/1993	-	ND (50)	-	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	2200	270	-	-	ND (50)	ND (50)	-
	12/16/1994	470	ND (50)	51	ND (50)	ND (50)	ND (50)	ND (50)	22	ND (50)	ND (50)	2000	ND (50)	ND (500)	-	ND (50)	ND (50)	ND (50)
	11/17/1998	ND (1000)	ND (10)	ND (50)	ND (50)	ND (50)	ND (10)	ND (50)	ND (50)	ND (50)	ND (50)	1200	ND (50)	ND (500)	ND (50)	ND (50)	ND (50)	ND (50)
	10/18/1999	ND (50)	ND (5)	ND (50)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	290	ND (20)	ND (50)	-	ND (5)	ND (5)	ND (5)
	12/18/2000	ND (100)	ND (10)	ND (100)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	400	ND (50)	ND (100)	-	ND (10)	ND (10)	ND (10)
	11/15/2001	ND (200)	ND (5)	ND (50)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	140	ND (25)	ND (50)	-	ND (5)	ND (5)	ND (5)
	2/13/2003	ND (200)	ND (5)	ND (50)	ND (5)	ND (5)	ND (5)	ND (5)	6	ND (5)	ND (5)	530	ND (50)	ND (50)	ND (5)	ND (5)	ND (5)	ND (5)
B411-OW	9/13/1984	32	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	P	5.4 A	-	-	ND (5)	ND (5)	ND (5)
	11/18/1998	ND (100)	ND (1)	ND (5)	ND (5)	ND (5)	ND (1)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (50)	ND (5)	ND (5)	ND (5)	ND (5)
	11/19/1999	ND (5)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2)	ND (5)	-	ND (0.5)	ND (0.5)	ND (0.5)
	12/18/2000	ND (5)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.5)	ND (5)	-	ND (0.5)	ND (0.5)	ND (0.5)
	11/16/2001	ND (20)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.5)	ND (5)	-	ND (0.5)	ND (0.5)	ND (0.5)
	2/14/2003	ND (20)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
B502-OW	5/21/1987	ND (500)	ND (6)	ND (20)	ND (1.6)	ND (4.7)	ND (2.8)	ND (1.6)	ND (7.2)	ND (6)	ND (3.8)	269	ND (2.8)	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	8/12/1987	ND (500)	ND (6)	ND (20)	ND (1.6)	ND (4.7)	ND (2.8)	ND (1.6)	ND (7.2)	ND (6)	ND (3.8)	2500	ND (2.8)	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	11/12/1987	ND (500)	ND (6)	ND (20)	ND (1.6)	ND (4.7)	ND (2.8)	ND (2.6)	ND (7.2)	ND (6)	ND (3.8)	430	ND (2.8)	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	11/18/1998	ND (100)	ND (1)	ND (5)	ND (5)	ND (5)	ND (1)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (50)	ND (5)	ND (5)	ND (5)	ND (5)
	10/19/1999	ND (25)	ND (2.5)	ND (25)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	3	ND (10)	ND (25)	-	ND (2.5)	ND (2.5)	ND (2.5)
	12/18/2000	ND (25)	ND (2.5)	ND (25)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (13)	ND (25)	-	ND (2.5)	ND (2.5)	ND (2.5)
	11/16/2001	ND (40)	ND (1)	ND (10)	ND (0.5)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	8	ND (5)	ND (10)	-	ND (1)	ND (1)	ND (1)
	2/14/2003	ND (20)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	1	ND (5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)

TABLE VII
SUMMARY OF GROUNDWATER OHM COMPOUNDS OF CONCERN 1984 to 2003
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

Sample ID	Date Sampled	Acetone	Benzene	Carbon Disulfide	Chloro-form	1,1-DCA	1,2-DCA	1,2-DCE	Ethyl-benzene	Toluene	1,1,1-TCA	Naphthalene	Methylene Chloride	MIBK	MTBE	PCE	TCE	Total Xylenes
B503-OW	5/21/1987	ND (500)	ND (6)	ND (20)	ND (1.6)	ND (4.7)	ND (2.8)	ND (1.6)	ND (7.2)	ND (6)	ND (3.8)	ND (1.5)	ND (2.8)	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	11/17/1998	ND (100)	ND (1)	ND (5)	ND (5)	ND (5)	ND (1)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (50)	ND (5)	ND (5)	ND (5)	ND (5)
	10/18/1999	ND (5)	0.6	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2)	ND (5)	-	ND (0.5)	ND (0.5)	ND (0.5)
	12/18/2000	ND (25)	ND (2.5)	ND (25)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (13)	ND (25)	-	ND (2.5)	ND (2.5)	ND (2.5)
	11/16/2001	ND (20)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.5)	ND (5)	-	ND (0.5)	ND (0.5)	ND (0.5)
	2/14/2003	ND (20)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
B603-OW	12/2/1986	ND (50)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	ND (2)	P (20)	ND (5)	ND (10)	-	ND (2)	ND (2)	ND (2)
	6/8/1987	ND (500)	ND (6)	ND (8)	2.9 S	ND (4.7)	ND (2.8)	ND (1.6)	14	ND (6)	ND (3.8)	3970	850 J	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	11/9/1987	ND (500)	ND (6)	ND (8)	ND (1.6)	ND (4.7)	ND (2.8)	ND (1.6)	11 A	ND (6)	ND (3.8)	337	ND (2.8)	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	5/17/1988	ND (500)	8.3	ND (20)	ND (2.8)	ND (4.7)	ND (2.8)	ND (1.6)	25	ND (6)	ND (3.8)	190	ND (2.8)	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	11/18/1998	ND (100)	10	5	ND (5)	ND (5)	ND (1)	ND (5)	ND (5)	ND (5)	ND (5)	810	ND (5)	ND (50)	ND (5)	ND (5)	ND (5)	5
	10/18/1999	ND (50)	6	ND (50)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	400	ND (20)	ND (50)	-	ND (5)	ND (5)	ND (5)
	12/18/2000	ND (50)	10	ND (50)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	270	ND (25)	ND (50)	-	ND (5)	ND (5)	ND (5)
	11/15/2001	ND (200)	ND	ND (50)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	90	ND (25)	ND (50)	-	ND (5)	ND (5)	ND (5)
	2/13/2003	ND (100)	4	ND (25)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	80	ND (25)	ND (25)	ND (2.5)	ND (2.5)	ND (2.5)	ND (0.5)
B604-OW	12/2/1986	510	28	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	13(A)	ND (10)	ND (10)	38	ND (25)	130	-	ND (10)	ND (10)	11(A)
	5/20/1987	ND (500)	40	ND (20)	12	ND (4.7)	ND (2.8)	ND (1.6)	20	ND (6)	ND (3.8)	9.7	ND (2.8)	ND (20)	-	ND (4.1)	ND (1.9)	16(A)
	11/9/1987	ND (500)	20	ND (20)	ND (1.8)	14	ND (2.8)	ND (1.6)	ND	ND (7.2)	ND (3.8)	16	ND (2.8)	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	5/17/1988	ND (500)	22	ND (20)	ND (2.8)	ND (4.7)	ND (2.8)	ND (1.6)	10	ND (7.2)	ND (3.8)	34	ND (2.8)	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	4/6/1990	-	7	-	ND (1)	4	ND (1)	ND (1)	4	ND (1)	ND (1)	11	ND (5)	-	-	ND (1)	ND (1)	-
	3/21/1991	-	7.3	-	ND (1)	ND (1)	3.3	ND (1)	1.6	ND (1)	ND (1)	950	ND (5)	-	-	ND (1)	ND (1)	-
	9/10/1991	ND (20)	7.9	ND (2.5)	ND (2.5)	4.8	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	110	ND (12.5)	ND (20)	-	ND (2.5)	ND (2.5)	3
	3/18/1992	150	7.2	2.8	ND (1)	5.1	2	ND (1)	3.1	ND (1)	ND (1)	110	ND (5)	ND (20)	-	ND (1)	ND (1)	2.6
	9/18/1992	-	8.4	-	ND (2.5)	7.1	4.8	ND (2.5)	3.2	ND (2.5)	ND (2.5)	270	ND (12)	-	-	ND (2.5)	ND (2.5)	-
	4/2/1993	-	8.6	-	ND (5)	8.3	ND (5)	ND (5)	6.0	ND (5)	ND (5)	248	65	-	-	ND (5)	ND (5)	-
	12/16/1994	160	ND (5)	12	ND (5)	ND (5)	ND (5)	ND (5)	2.7	ND (5)	ND (5)	210	ND (5)	11	-	ND (5)	ND (5)	2.1
	11/18/1998	ND (100)	8	ND (5)	ND (5)	ND (5)	8	ND (5)	ND (5)	ND (5)	ND (5)	63	ND (5)	ND (50)	ND (5)	ND (5)	ND (5)	ND (5)
	10/19/1999	ND (10)	10	ND (10)	ND (1)	ND (1)	5	ND (1)	ND (1)	ND (1)	ND (1)	66	ND (4)	ND (10)	-	ND (1)	ND (1)	3
	12/18/2000	ND (25)	11	ND (25)	ND (2.5)	ND (2.5)	3	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	96	ND (13)	ND (25)	-	ND (2.5)	ND (2.5)	ND (2.5)
	11/15/2001	ND (20)	9	ND (5)	ND (0.5)	3	6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	7	ND (2.5)	ND (5)	-	ND (0.5)	ND (0.5)	0.9
	2/14/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	--	--	--
B707-OW	12/4/1986	370	4.5	50	ND (2)	ND (2)	ND (2)	ND (2)	36	2.7(A)	ND (2)	1700	13	ND (10)	-	ND (2)	ND (2)	2.6(A)
	4/6/1990	-	ND (1)	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	150	ND (5)	-	-	ND (1)	ND (1)	-
	9/28/1990	ND (20)	6.7	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	12	6.3	ND (1)	570	ND (5)	ND (20)	-	ND (1)	ND (1)	ND (1)
	3/22/1991	-	1.2	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	-	-	ND (1)	ND (1)	-
	9/11/1991	ND (20)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	ND (250)	8400	ND (1250)	ND (20)	-	ND (250)	ND (250)	ND (250)
	3/17/1992	170	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	89	ND (12)	ND (50)	-	ND (2.5)	ND (2.5)	ND (2.5)
	9/18/1992	-	ND (5)	-	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	230	ND (5)	-	-	ND (5)	ND (5)	-
	11/17/1998	ND (100)	2	ND (5)	ND (5)	ND (5)	ND (1)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	110	ND (5)	ND (50)	ND (5)	ND (5)	ND (5)	ND (5)
	10/18/1999	45 e	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	11	ND (2)	ND (5)	-	ND (0.5)	ND (0.5)	ND (0.5)
	12/18/2000	ND (50)	ND (5)	ND (50)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	250	ND (25)	ND (50)	-	ND (5)	ND (5)	ND (5)
	11/15/2001	ND (1000)	ND (25)	ND (250)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	1100	ND (130)	ND (250)	-	ND (25)	ND (25)	ND (25)
	2/13/2003	ND (100)	ND (2.5)	ND (25)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	17	ND (25)	ND (25)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)
B708-OW	12/4/1986	7100	27	170	ND (20)	ND (20)	ND (20)	ND (20)	170	TR(A)	ND (20)	19000	ND (180)	ND (100)	-	ND (20)	ND (20)	ND (20)
	6/11/1987	-	ND (4.4)	-	ND (1.6)	ND (4.7)	ND (2.8)	ND (1.6)	ND (7.2)	ND (6)	ND (3.8)	1540	ND (2.8)	-	-	ND (4.1)	ND (1.9)	ND (1)
	8/11/1987	ND (500)	ND (6)	ND (20)	ND (1.6)	ND (4.7)	ND (2.8)	ND (1.6)	ND (7.2)	ND (6)	ND (3.8)	14500	7000 J	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	11/12/1987	ND (500)	ND (6)	ND (20)	ND (1.6)	ND (4.7)	ND (2.8)	ND (2.8)	ND (7.2)	ND (6)	ND (3.8)	1200	ND (2.8)	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	4/5/1990	-	ND (1)	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	360	ND (5)	-	-	ND (1)	ND (1)	-
	9/27/1990	ND (20)	1.7	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	5.5	ND (1)	ND (1)	1100	ND (5)	ND (20)	-	1.4	ND (1)	ND (1)
	3/21/1991	-	ND (1)	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	-	-	ND (1)	ND (1)	-
	9/11/1991	ND (20)	3.1	4.4	ND (1)	ND (1)	ND (1)	ND (1)	11	ND (1)	ND (1)	1900	ND (5)	20	-	4	ND (1)	3.8
	3/16/1992	ND (250)	ND (12)	ND (12)	ND (12)	ND (12)	ND (12)	ND (12)	ND (12)	ND (12)	ND (12)	370	ND (62)	ND (250)	-	ND (12)	ND (12)	ND (12)
	9/18/1992	-	ND (25)	-	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	1300	ND (120)	-	-	ND (25)	ND (25)	-
	11/17/1998	ND (100)	ND (1)	ND (5)	ND (5)	ND (5)	ND (1)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (50)	ND (5)	ND (5)	ND (5)	ND (5)
	10/18/1999	ND (5)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (5)	ND (0.5)	2	ND (2)	ND (5)	-	ND (0.5)	ND (0.5)	ND (0.5)
	12/18/2000	ND (5)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	13	ND (2.5)	ND (5)	-	ND (0.5)	ND (0.5)	ND (0.5)
	11/15/2001	ND (20)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.5)	ND (5)	-	ND (0.5)	ND (0.5)	ND (0.5)
	2/13/2003	ND (40)	ND (1)	ND (10)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (10)	ND (10)	ND (1)	ND (1)	ND (1)	ND (1)

TABLE VII
SUMMARY OF GROUNDWATER OHM COMPOUNDS OF CONCERN 1984 to 2003
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

Sample ID	Date Sampled	Acetone	Benzene	Carbon Disulfide	Chloroform	1,1-DCA	1,2-DCA	1,2-DCE	Ethylbenzene	Toluene	1,1,1-TCA	Naphthalene	Methylene Chloride	MIBK	MTBE	PCE	TCE	Total Xylenes
B801-OW	6/10/1987	ND (500)	ND (6)	ND (20)	ND (1.6)	ND (4.7)	ND (2.8)	ND (1.6)	ND (7.2)	ND (6)	ND (3.8)	ND (1.6)	ND (2.8)	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	11/11/1987	ND (500)	ND (6)	ND (20)	ND (1.6)	ND (4.7)	ND (2.8)	ND (1.6)	ND (7.2)	ND (6)	ND (3.8)	ND (1.6)	ND (2.8)	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	5/13/1988	-	ND (4.4)	-	ND (1.6)	-	-	ND (1.6)	ND (7.2)	ND (6)	-	ND (1.6)	ND (2.8)	-	-	ND (4.1)	ND (1.9)	-
	4/5/1990	-	ND (1)	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	-	-	ND (1)	ND (1)	-
	9/27/1990	ND (20)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	ND (20)	-	ND (1)	ND (1)	ND (1)
	3/21/1991	-	ND (1)	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	-	-	ND (1)	ND (1)	-
	9/10/1991	ND (20)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	ND (20)	-	ND (1)	ND (1)	ND (1)
	3/17/1992	ND (20)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	ND (20)	-	ND (1)	ND (1)	ND (1)
	9/18/1992	-	ND (1)	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	ND (5)	-	-	ND (1)	ND (1)	-
	4/2/1993	-	ND (1)	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	7	-	-	ND (1)	ND (1)	-
	12/16/1994	ND (100)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (50)	-	ND (5)	ND (5)	ND (5)
	11/18/1998	ND (100)	ND (1)	ND (5)	ND (5)	ND (5)	ND (1)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (50)	ND (5)	ND (5)	ND (5)	ND (5)
	1/19/1999	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/19/1999	ND (5)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2)	ND (5)	-	ND (0.5)	ND (0.5)	ND (0.5)
	12/18/2000	ND (5)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.5)	ND (5)	-	ND (0.5)	ND (0.5)	ND (0.5)
	11/16/2001	ND (40)	ND (1)	ND (10)	ND (0.5)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	ND (10)	-	ND (1)	ND (1)	ND (1)
	2/14/2003	ND (20)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
B802-OW	6/8/1987	ND (500)	ND (6)	ND (20)	ND (1.6)	ND (4.7)	ND (2.8)	ND (1.6)	ND (7.2)	ND (6)	ND (3.8)	ND (1.6)	7400 J	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	8/4/1987	-	-	-	ND (1)	ND (1)	ND (1)	ND (1)	-	-	ND (1)	-	ND (5)	-	-	ND (1)	ND (1)	-
	11/11/1987	ND (500)	ND (6)	ND (20)	2.6(A)	ND (4.7)	ND (2.8)	ND (1.6)	ND (7.2)	ND (6)	ND (3.8)	ND (1.6)	ND (2.8)	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	5/16/1988	ND (500)	ND (6)	ND (20)	ND (1.6)	ND (4.7)	ND (2.8)	ND (1.6)	ND (7.2)	ND (6)	ND (3.8)	ND (1.6)	ND (2.8)	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	4/5/1990	-	ND (1)	-	2	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	1	ND (1)	ND (5)	-	-	ND (1)	ND (1)	-
	9/27/1990	ND (20)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	ND (20)	-	ND (1)	ND (1)	ND (1)
	3/21/1991	-	ND (1)	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	7.0	-	-	ND (1)	ND (1)	-
	5/23/1991	ND (20)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	ND (5)	ND (20)	-	ND (1)	ND (1)	ND (1)
	9/10/1991	ND (20)	ND (1)	ND (1)	5.6	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	ND (20)	-	ND (1)	ND (1)	ND (1)
	3/17/1992	ND (20)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	ND (20)	-	ND (1)	ND (1)	ND (1)
	9/18/1992	-	ND (1)	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	-	-	ND (1)	ND (1)	-
	4/2/1993	-	ND (1)	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	7.6	-	-	ND (1)	ND (1)	-
	12/16/1994	ND (100)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	1.8	ND (5)	ND (50)	-	ND (5)	ND (5)	ND (5)
	11/18/1998	ND (100)	ND (1)	ND (5)	ND (5)	ND (5)	ND (1)	ND (5)	ND (5)	ND (5)	ND (5)	8	ND (5)	ND (50)	ND (5)	ND (5)	ND (5)	ND (5)
	1/19/1999	-	-	-	-	-	-	-	-	-	-	ND	-	-	-	-	-	-
	10/19/1999	ND (5)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2)	ND (5)	-	ND (0.5)	ND (0.5)	ND (0.5)
	12/18/2000	ND (25)	ND (2.5)	ND (25)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (13)	ND (25)	-	ND (2.5)	ND (2.5)	ND (2.5)
	11/16/2001	ND (20)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.5)	ND (5)	-	ND (0.5)	ND (0.5)	ND (0.5)
	2/14/2003	ND (20)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (5)	ND (5)	5	ND (0.5)	ND (0.5)	ND (0.5)
B803-OW	6/8/1987	ND (500)	ND (6)	ND (20)	ND (1.6)	ND (4.7)	ND (2.8)	ND (1.6)	ND (7.2)	ND (6)	ND (3.8)	ND (1.6)	5600 J	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	11/11/1987	ND (500)	ND (6)	ND (20)	ND (1.6)	ND (4.7)	ND (2.8)	ND (1.6)	ND (7.2)	ND (6)	ND (3.8)	ND (1.6)	ND (2.8)	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	5/13/1988	-	ND (4.4)	-	ND (1.6)	-	-	ND (2.8)	ND (7.2)	ND (6)	-	ND (1.6)	ND (2.8)	-	-	ND (4.1)	ND (1.9)	-
	4/5/1990	-	ND (1)	-	3	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	-	-	ND (1)	ND (1)	-
	9/27/1990	ND (20)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	ND (20)	-	ND (1)	ND (1)	ND (1)
	3/22/1991	-	ND (1)	-	3.1	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	10	-	-	ND (1)	ND (1)	-
	9/10/1991	ND (20)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	ND (20)	-	ND (1)	ND (1)	ND (1)
	3/17/1992	ND (20)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	ND (20)	-	ND (1)	ND (1)	ND (1)
	9/18/1992	-	ND (1)	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	-	-	ND (1)	ND (1)	-
	7/9/1993	-	ND (1)	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	-	-	ND (1)	ND (1)	-
	12/16/1994	ND (100)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (50)	-	ND (5)	ND (5)	ND (5)
	11/18/1998	ND (100)	ND (1)	ND (5)	ND (5)	ND (5)	ND (1)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (50)	37	ND (5)	ND (5)	ND (5)
	1/19/1999	-	-	-	-	-	-	-	-	-	-	ND	-	-	-	-	-	-
	10/19/1999	ND (5)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2)	ND (5)	-	ND (0.5)	ND (0.5)	ND (0.5)
	12/18/2000	ND (5)	ND (0.5)	ND (5)	6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.5)	ND (5)	-	ND (0.5)	ND (0.5)	ND (0.5)
	11/15/2001	ND (20)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.5)	ND (5)	-	ND (0.5)	ND (0.5)	ND (0.5)
	2/14/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE VII
SUMMARY OF GROUNDWATER OHM COMPOUNDS OF CONCERN 1984 to 2003
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

Sample ID	Date Sampled	Acetone	Benzene	Carbon Disulfide	Chloro-form	1,1-DCA	1,2-DCA	1,2-DCE	Ethyl-benzene	Toluene	1,1,1-TCA	Naphthalene	Methylene Chloride	MIBK	MTBE	PCE	TCE	Total Xylenes
B807-OW	8/11/1987	-	50	-	ND (1.8)	ND (4.7)	ND (2.8)	ND (1.8)	190	ND (8)	ND (3.8)	11000	ND (2.8)	-	-	ND (4.1)	ND (1.9)	ND (1)
	8/11/1987	ND (500)	ND (8)	ND (20)	ND (1.8)	ND (4.7)	ND (2.8)	ND (1.8)	ND (7.2)	ND (8)	ND (3.8)	3300	1000 J	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	11/12/1987	ND (500)	48	ND (20)	ND (1.8)	38	ND (2.8)	ND (2.8)	120	ND (8)	ND (3.8)	650	ND (2.8)	ND (20)	-	ND (4.1)	ND (1.9)	ND (10)
	4/6/1990	-	ND (1)	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	89	ND (5)	-	-	ND (1)	ND (1)	-
	9/28/1990	ND (20)	2.6	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	370	ND (5)	ND (20)	-	ND (1)	ND (1)	ND (1)
	3/21/1991	-	ND (1)	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	-	-	ND (1)	ND (1)	-
	9/11/1991	ND (20)	1.9	5.7	ND (1)	ND (1)	ND (1)	ND (1)	2.2	ND (1)	ND (1)	170	ND (5)	ND (20)	-	ND (1)	ND (1)	1.8
	3/17/1992	ND (100)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	230	ND (25)	ND (100)	-	ND (5)	ND (5)	ND (5)
	9/18/1992	-	ND (25)	-	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	1200	ND (120)	-	-	ND (25)	ND (25)	-
	11/17/1998	ND (100)	ND (1)	ND (5)	ND (5)	ND (5)	ND (1)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (50)	ND (5)	ND (5)	ND (5)	ND (5)
	10/18/1999	ND (5)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2)	ND (5)	-	ND (0.5)	ND (0.5)	ND (0.5)
	12/18/2000	ND (5)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.5)	ND (5)	-	ND (0.5)	ND (0.5)	ND (0.5)
	11/15/2001	ND (20)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.5)	ND (5)	-	ND (0.5)	ND (0.5)	ND (0.5)
	2/13/2003	ND (20)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
B904-OW	1/13/1988	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	3.2(A)	ND
	4/5/1990	-	52	-	ND (1)	ND (1)	1	ND (1)	35	13	ND (1)	6	ND (5)	-	-	ND (1)	ND (1)	-
	5/2/1990	ND (20)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	ND (20)	-	ND (1)	ND (1)	ND (5)
	9/27/1990	ND (20)	28	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	20	4	ND (1)	5	ND (5)	ND (20)	-	ND (1)	2.6	54
	3/21/1991	-	ND (1)	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	20	ND (5)	ND (1)	-	ND (1)	ND (1)	-
	9/11/1991	ND (20)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	ND (20)	-	ND (1)	ND (1)	ND (1)
	3/18/1992	ND (20)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	ND (20)	-	ND (1)	ND (1)	ND (1)
	9/18/1992	-	1.2	-	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	ND (5)	-	ND (1)	ND (1)	-
	4/2/1993	-	13	-	ND (1)	ND (1)	ND (1)	ND (1)	8	12	ND (1)	ND (5)	ND (5)	-	-	ND (1)	ND (1)	-
	12/16/1994	ND (100)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (50)	-	ND (5)	ND (5)	ND (5)
	11/17/1998	ND (100)	110	ND (5)	ND (5)	ND (5)	ND (1)	ND (5)	22	270	ND (5)	ND (5)	ND (5)	ND (50)	ND (5)	ND (5)	ND (5)	39
	10/18/1999	ND (5)	0.6	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	2	ND (0.5)	ND (0.5)	3	ND (2)	ND (5)	-	ND (0.5)	ND (0.5)	2
	12/18/2000	ND (10)	ND	ND (10)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	ND (5)	ND (10)	-	ND (1)	ND (1)	ND (1)
	11/15/2001	ND (20)	9	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	2	ND (0.5)	ND (0.5)	1	ND (2.5)	ND (5)	-	ND (0.5)	ND (0.5)	1
	2/13/2003	ND (40)	ND (1)	ND (10)	ND (1)	ND (1)	ND (1)	ND (1)	2	ND (1)	ND (1)	2	ND (10)	ND (10)	ND (1)	ND (1)	ND (1)	1
B950-OW (Dup of B603)	2/13/2003	ND (100)	4	ND (25)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	ND (2.5)	83	ND (25)	ND (25)	ND (2.5)	ND (2.5)	ND (2.5)	ND (0.5)
HA98-1	11/17/1998	ND (100)	ND (1)	ND (5)	47	ND (5)	ND (1)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (50)	ND (5)	ND (5)	ND (5)	ND (5)
(trip blank)	10/19/1999	ND (5)	ND (0.5)	ND (5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2)	ND (5)	-	ND (0.5)	ND (0.5)	ND (0.5)

Notes:
1. Concentrations are expressed in micrograms per liter (ug/L).
2. ND indicates that the compound was not detected at a level above the method detection limit.
3. -- Indicates that the compound was not analyzed for.
4. Compound abbreviations: 1,1-DCA (1,1-dichloroethane); 1,2-DCA (1,2-dichloroethane); 1,2-DCE (cis- and trans-1,2-dichloroethene); 1,1,1-TCA (1,1,1-trichloroethane); MTBE (Methyl tert Butyl Ether); MIBK (4-methyl-2-pentanone); TCE (trichloroethene), PCE (tetrachloroethene).
5. "A" Indicates that the reported concentration is approximate as determined by validation process.
6. "e" indicates the indicated concentration exceeded the calibration range for the analyte.
7. " J " indicates invalid data as determined by validation process.
8. "J" indicates estimated value; compound detected below method detection limit.
9. "P" indicates trace concentrations detected below the average reporting limit.
10. "S" Indicates suspect data.
11. Results of duplicate analyses are reported in parentheses.

TABLE VIII
SUMMARY OF GROUNDWATER ANALYSIS FOR ASBESTOS
W.R. GRACE & CO.-CONN.
CAMBRIDGE, MASSACHUSETTS
RTN 3-0277

SAMPLE ID	SAMPLE TYPE	DATE SAMPLED	STRUCTURES DETECTED (total)	STRUCTURES DETECTED (<5 uM)	STRUCTURES DETECTED (>5 uM)	STRUCTURES DETECTED (>10 uM)	TOTAL ASBESTOS CONCENTRATION (MF/L)	ASBESTOS CONCENTRATION (>10 um) (MF/L)	ASBESTOS TYPE
B207-OW	Groundwater	21-Oct-99	1	1	NSD	NSD	21.4	<21.4	chrysotile
B807-OW	Groundwater	21-Oct-99	1	1	NSD	NSD	21.4	<21.4	chrysotile
B503-OW	Groundwater	21-Oct-99	3	3	NSD	NSD	21.4	<21.4	chrysotile
B207-OW	Groundwater	17-Nov-99	NA	--	--	Unable to analyze (see below)		--	--
B807-OW	Groundwater	17-Nov-99	NSD	NSD	NSD	NSD	<0.18	<0.18	chrysotile
B503-OW	Groundwater	17-Nov-99	NA	--	--	Unable to analyze		--	--
B207-OW	Groundwater	10-Dec-99	NA	--	--	Unable to analyze		--	--
B807-OW	Groundwater	10-Dec-99	NSD	NSD	NSD	NSD	<0.18	<0.18	--
B503-OW	Groundwater	10-Dec-99	NA	--	--	Unable to analyze		--	--
B207-OW	Groundwater	29-Feb-00	4	3	1	NSD	0.71	<0.18	chrysotile
B503-OW	Groundwater	29-Feb-00	1	1	NSD	NSD	0.18	<0.18	anthophyllite
B207-OW'	Groundwater	5-May-00	3	3	NSD	NSD	0.53	<0.18	chrysotile, anthophyllite

NOTES AND ABBREVIATIONS:

1. The slow pump method uses a pump lowered into the well that draws groundwater at a very low rate to reduce the turbidity of the samples.
2. EPA Drinking Water Method EPA-600/4-83-043 (100.1) "Analytical Method for Determination of Asbestos Fibers in Water". This method counts fibers greater than 0.5 microns in length with 3:1 aspect ratio.
3. um: micrometers.
4. MF/L: millions of fibers per liter.
5. NSD: no structures detected.
6. NA: not analyzed. These samples could not be analyzed using the EPA Drinking Water Method due to excess particulate matter contained in the sample. The particulate matter was identified as iron oxide.
7. The samples from well B207 collected on 5 May 2000 was collected after purging 55 gallons of water from the well, or approximately 25 times the volume of standing water in the well. Additionally, the water sample was prepared using an HCl acid dissolution step to dissolve excess iron oxide in the sample prior to analysis.

TABLE IX
SUMMARY OF SURFACE WATER OHM COMPOUNDS OF CONCERN - 1986 to 2003
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

Sample ID	Date Sampled	Benzene	Chlorobenzene	Chloroform	1,2-Di-chlorobenzene	1,3-Di-chlorobenzene	1,4-Di-chlorobenzene	1,2-DCE	Ethylbenzene	MTBE	Naphthalene	PCE	TCE	Acetone	Vinyl Chloride
SW-1	04/04/90	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	-	ND(1)	ND(1)	ND(1)	-	ND(1)
	03/20/91	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	-	ND(1)	ND(1)	ND(1)	-	ND(1)
	03/17/92	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	-	ND(1)	ND(1)	ND(1)	ND(20)	ND(1)
	04/02/93	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	-	ND(5)	ND(1)	ND(1)	-	ND(1)
	12/16/94	ND(5)	ND(5)	ND(5)	-	-	-	ND(5)	ND(5)	-	ND(5)	ND(5)	ND(5)	ND(100)	ND(10)
	11/18/98	ND(1)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	-	ND(5)	ND(5)	ND(5)	ND(100)	ND(2)
	10/19/99	ND(0.5)	ND(0.5)	ND(0.5)	-	-	-	ND(0.5)	ND(0.5)	-	ND(0.5)	ND(0.5)	ND(0.5)	ND(5)	ND(0.5)
	12/18/00	ND(0.5)	ND(0.5)	ND(0.5)	-	-	-	ND(0.5)	ND(0.5)	-	ND(0.5)	ND(0.5)	ND(0.5)	ND(5)	ND(0.5)
	11/16/01	ND(0.5)	ND(0.5)	ND(0.5)	-	-	-	ND(0.5)	ND(0.5)	-	ND(0.5)	ND(0.5)	ND(0.5)	ND(20)	ND(0.5)
SW-2A	03/20/91	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	6.7	ND(1)	-	ND(1)	2.5	ND(1)	-	2.4
	03/17/92	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	2.4	ND(1)	-	ND(1)	2.8	ND(1)	21	ND(1)
SW-2B	12/01/86	A 2.1	ND(2)	ND(2)	ND(10)	ND(10)	ND(10)	8.2	ND(2)	-	ND(10)	ND(2)	ND(2)	ND(50)	ND(5)
	02/17/87	A 3.4	ND(2)	A 3.1	-	-	-	8.7	ND(2)	-	--	ND(2)	ND(2)	610	ND(5)
	05/19/87	ND(6)	ND(6)	ND(1.8)	ND(10)	ND(10)	ND(10)	7.8	ND(7.2)	-	ND(1.8)	ND(4.1)	ND(1.9)	ND(500)	ND(6.5)
	08/12/87	ND(6)	ND(6)	ND(1.8)	ND(10)	ND(10)	ND(10)	ND(1.8)	ND(7.2)	-	-	ND(4.1)	ND(1.9)	ND(500)	ND(6.5)
	09/23/87	ND(6)	ND(6)	ND(1.8)	ND(10)	ND(10)	ND(10)	ND(1.8)	ND(7.2)	-	ND(1.8)	ND(4.1)	ND(1.9)	ND(500)	ND(6.5)
	11/13/87	ND(6)	ND(6)	ND(1.8)	ND(10)	ND(10)	ND(10)	ND(1.8)	ND(7.2)	-	-	ND(4.1)	ND(1.9)	ND(500)	ND(6.5)
	05/18/88	ND(6)	ND(6)	ND(1.8)	ND(10)	ND(10)	ND(10)	ND(1.8)	ND(7.2)	-	ND(1.8)	ND(4.1)	ND(1.9)	ND(500)	ND(6.5)
	04/04/90	ND(1)	1	ND(1)	3	3	3	ND(1)	2	-	ND(1)	ND(1)	ND(1)	-	ND(1)
	03/20/91	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	3.8	ND(1)	-	ND(1)	1.4	ND(1)	-	ND(1)
	03/17/92	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	-	ND(1)	1.2	ND(1)	ND(20)	ND(1)
	04/02/93	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	-	ND(5)	ND(1)	ND(1)	-	ND(1)
	12/16/94	ND(100)	ND(5)	ND(5)	-	-	-	ND(5)	ND(5)	-	ND(5)	ND(5)	ND(5)	ND(100)	ND(10)
	11/18/98	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	-	ND(5)	ND(5)	ND(5)	100	ND(5)
	10/19/99	ND(0.5)	ND(0.5)	ND(0.5)	-	-	-	ND(0.5)	ND(0.5)	-	ND(0.5)	ND(0.5)	0.8	5	ND(0.5)
	12/18/00	ND(2.5)	ND(2.5)	ND(2.5)	-	-	-	ND(2.5)	ND(2.5)	-	ND(2.5)	ND(2.5)	6	25	ND(2.5)
SW-3	12/01/86	ND(2)	ND(2)	ND(2)	ND(20)	ND(20)	ND(20)	ND(2)	ND(2)	-	ND(20)	ND(2)	ND(2)	ND(50)	ND(5)
	05/20/87	ND(6)	ND(6)	ND(1.8)	ND(10)	ND(10)	ND(10)	ND(1.8)	ND(7.2)	-	ND(1.8)	ND(4.1)	ND(1.9)	ND(500)	ND(6.5)
	11/09/87	ND(6)	ND(6)	ND(1.8)	ND(10)	ND(10)	ND(10)	ND(1.8)	ND(7.2)	-	ND(1.8)	ND(4.1)	ND(1.9)	ND(500)	ND(6.5)
	05/16/88	ND(6)	ND(6)	ND(1.8)	ND(10)	ND(10)	ND(10)	ND(1.8)	ND(7.2)	-	ND(1.8)	ND(4.1)	ND(1.9)	ND(500)	ND(6.5)
	04/04/90	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	-	ND(1)	ND(1)	ND(1)	-	ND(1)
	03/22/91	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	-	ND(1)	ND(1)	ND(1)	-	ND(1)
	03/17/92	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	-	ND(1)	1.4	ND(1)	ND(20)	ND(1)
SW-4	12/01/86	ND(2)	ND(2)	ND(2)	ND(20)	ND(20)	ND(20)	ND(2)	ND(2)	-	ND(20)	ND(2)	ND(2)	ND(50)	ND(5)
	05/20/87	ND(6)	ND(6)	ND(1.8)	ND(10)	ND(10)	ND(10)	ND(1.8)	ND(7.2)	-	ND(1.8)	ND(4.1)	ND(1.9)	ND(500)	ND(6.5)
	10/09/87	ND(6)	ND(6)	ND(1.8)	ND(10)	ND(10)	ND(10)	ND(1.8)	ND(7.2)	-	ND(1.8)	ND(4.1)	ND(1.9)	ND(500)	ND(6.5)
	11/09/87	ND(6)	ND(6)	ND(1.8)	ND(10)	ND(10)	ND(10)	ND(1.8)	ND(7.2)	-	ND(1.8)	ND(4.1)	ND(1.9)	ND(500)	ND(6.5)
	05/16/88	ND(6)	ND(6)	ND(1.8)	ND(10)	ND(10)	ND(10)	ND(1.8)	ND(7.2)	-	ND(1.8)	ND(4.1)	ND(1.9)	ND(500)	ND(6.5)
	04/04/90	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	-	ND(1)	ND(1)	ND(1)	-	ND(1)
	03/22/91	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	-	ND(1)	ND(1)	ND(1)	-	ND(1)
	03/17/92	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	-	ND(1)	ND(1)	ND(1)	ND(20)	ND(1)

TABLE IX
SUMMARY OF SURFACE WATER OHM COMPOUNDS OF CONCERN - 1986 to 2003
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

Sample ID	Date Sampled	Benzene	Chlorobenzene	Chloroform	1,2-Di-chlorobenzene	1,3-Di-chlorobenzene	1,4-Di-chlorobenzene	1,2-DCE	Ethylbenzene	MTBE	Naphthalene	PCE	TCE	Acetone	Vinyl Chloride
SW-8	05/20/87	ND(6)	ND(6)	ND(1.6)	ND(10)	ND(10)	ND(10)	ND(1.6)	ND(7.2)	-	ND(1.6)	ND(4.1)	ND(1.9)	ND(500)	ND(6.5)
	10/09/87	ND(6)	ND(6)	ND(1.6)	ND(10)	ND(10)	ND(10)	ND(1.6)	ND(7.2)	-	ND(1.6)	ND(4.1)	ND(1.9)	ND(500)	ND(6.5)
	11/09/87	ND(6)	ND(6)	ND(1.6)	ND(10)	ND(10)	ND(10)	ND(1.6)	ND(7.2)	-	ND(1.6)	ND(4.1)	ND(1.9)	ND(500)	ND(6.5)
	05/16/88	ND(6)	ND(6)	ND(1.6)	ND(10)	ND(10)	ND(10)	ND(1.6)	ND(7.2)	-	ND(1.6)	ND(4.1)	ND(1.9)	ND(500)	ND(6.5)
	04/06/90	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	--	ND
	03/22/91	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	-	ND(1)	ND(1)	ND(1)	-	ND(1)
	03/17/92	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	-	ND(1)	ND(1)	ND(1)	ND(20)	ND(1)
	04/02/93	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	-	ND(5)	ND(1)	ND(1)	-	ND(1)
	12/16/94	ND(5)	ND(5)	ND(5)	-	-	-	ND(5)	ND(5)	-	ND(5)	ND(5)	ND(5)	ND(100)	ND(10)
	11/18/98	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	-	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
	10/18/99	ND(0.5)	ND(0.5)	ND(0.5)	-	-	-	2	ND(0.5)	-	ND(0.5)	ND(0.5)	ND(0.5)	ND(5)	ND(0.5)
	12/18/00	ND(1)	ND(1)	ND(1)	-	-	-	ND(1)	ND(1)	-	ND(1)	ND(1)	ND(1)	ND(10)	ND(1)
	11/15/01	ND(0.5)	ND(0.5)	ND(0.5)	-	-	-	ND(0.5)	ND(0.5)	-	4	ND(0.5)	ND(0.5)	ND(20)	ND
	2/14/03	ND(0.5)	ND(0.5)	ND(0.5)	-	-	-	ND(0.5)	ND(0.5)	2	ND(0.5)	ND(0.5)	ND(0.5)	ND(20)	ND(0.5)
SW-9	04/06/90	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	-	ND
	03/22/91	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	-	2.4	ND(1)	ND(1)	-	ND(1)
	03/17/92	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	-	ND(1)	ND(1)	ND(1)	ND(20)	ND(1)

Notes:
1. Concentrations are expressed in micrograms per liter (ug/L).
2. ND indicates that the compound was not detected at a level above the method detection limit.
3. -- indicates that the compound was not analyzed for.
4. Compound abbreviations: 1,2-DCE (1,2-dichloroethene); PCE (tetrachloroethene); TCE (trichloroethene)
5. "A" indicates that reported concentration is approximate as determined by validation process.
6. Sample labels "SW" are designated "S" in Table II of Long-Term Monitoring Program Report No. 3, dated August 1988.
7. SW-2B formerly designated S2.

TABLE X
SUMMARY OF ASBESTOS ANALYTICAL RESULTS IN SURFACE WATER
W.R. GRACE & CO.-CONN.
CAMBRIDGE, MASSACHUSETTS
RTN 3-0277

SAMPLE ID	SAMPLE TYPE	DATE SAMPLED	STRUCTURES DETECTED (total)	STRUCTURES DETECTED (<5 uM)	STRUCTURES DETECTED (>5 uM)	STRUCTURES DETECTED (>10 uM)	TOTAL ASBESTOS CONCENTRATION (MF/L)	ASBESTOS CONCENTRATION (>10 um) (MF/L)	ASBESTOS TYPE
SW-1	Surface water	21-Oct-99	4	4	NSD	NSD	0.71	<0.18	chrysotile
SW-2	Surface water	21-Oct-99	2	2	NSD	NSD	0.36	<0.18	chrysotile
SW-3	Surface water	21-Oct-99	NSD	NSD	NSD	NSD	<0.18	<0.18	–
SW-4	Surface water	21-Oct-99	2	2	NSD	NSD	0.36	<0.18	chrysotile

NOTES AND ABBREVIATIONS:

1. All asbestos fibers detected in surface water samples were identified as chrysotile.
2. EPA Drinking Water Method EPA-600/4-83-043 (100.1) "Analytical Method for Determination of Asbestos Fibers in Water". This method uses the number of fibers greater than 10 um in length to calculate "asbestos content".
3. uM: micrometers.
4. MF/L: millions of fibers per liter.
5. NSD: no structures detected.

TABLE XI
SUMMARY OF OHM SEDIMENT QUALITY DATA - 1984 to 1988
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

SAMPLE DESIGNATION	JERRY'S POND	J3	SD4	SD6	SD8	SD11	SD12	SD13	SD14	SD101
SAMPLING DATE	1/22/1985	3/15/1985	10/9/1987	10/9/1987	10/9/1987	10/9/1987	10/9/1987	10/9/1987	10/9/1987	10/9/1987
SAMPLE DEPTH (FT.)	---	---	---	---	---	---	---	---	---	---
EXPLORATION TYPE	POND	POND	STREAM	STREAM	STREAM	POND	POND	POND	POND	SD14
SOIL TYPE	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	DUPLICATE
VOCs (ug/kg)										
Acetone	ND(25)	-	ND(25000)	ND(25000)	ND(25000)	ND(25000)	ND(25000)	ND(25000)	ND(25000)	ND(25000)
Benzene	ND(2)	-	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)
Bromodichloromethane	ND(2)	-	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)
2-Butanone	ND(10)	-	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)
Carbon Disulfide	ND(2)	-	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)
Carbon Tetrachloride	ND(2)	-	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)
Chlorobenzene	ND(2)	-	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)
Chloroform	ND(2)	-	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)
Chloromethane	ND(5)	-	ND(400)	ND(400)	ND(400)	ND(400)	ND(400)	ND(400)	ND(400)	ND(400)
1,1-Dichloroethane	ND(2)	-	ND(235)	ND(235)	ND(235)	ND(235)	ND(235)	ND(235)	ND(235)	ND(235)
1,2-Dichloroethane	ND(2)	-	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)
1,1-Dichloroethylene	ND(2)	-	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)
1,2-Dichloroethylene	-	-	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)
Trans-1,2-Dichloroethylene	ND(2)	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	ND(2)	-	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)
Ethylbenzene	ND(2)	-	ND(360)	ND(360)	ND(360)	ND(360)	ND(360)	ND(360)	ND(360)	ND(360)
2-Hexanone	ND(10)	-	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)
Methylene Chloride	ND(2)	-	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)	ND(140)
4-methyl-2-Pentanone	ND(10)	-	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(1000)
2,2-Oxybis propane	-	-	-	-	-	-	-	-	-	-
Styrene	ND(2)	-	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)
Tetrachloroethylene	ND(2)	-	ND(205)	ND(205)	ND(205)	ND(205)	ND(205)	ND(205)	ND(205)	ND(205)
1,1,1-Trichloroethane	ND(2)	-	ND(190)	ND(190)	ND(190)	ND(190)	ND(190)	ND(190)	ND(190)	ND(190)
Toluene	ND(2)	-	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)	ND(300)
Trichloroethylene	ND(2)	-	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)
Vinyl Acetate	ND(2)	-	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)	ND(1500)
Xylenes, mixture	ND(2)	-	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)	ND(500)

TABLE XI
SUMMARY OF OHM SEDIMENT QUALITY DATA - 1984 to 1988
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

SAMPLE DESIGNATION	JERRY'S POND	J3	SD4	SD6	SD8	SD11	SD12	SD13	SD14	SD101
SAMPLING DATE	1/22/1985	3/15/1985	10/9/1987	10/9/1987	10/9/1987	10/9/1987	10/9/1987	10/9/1987	10/9/1987	10/9/1987
SAMPLE DEPTH (FT.)	---	---	---	---	---	---	---	---	---	---
EXPLORATION TYPE	POND	POND	STREAM	STREAM	STREAM	POND	POND	POND	POND	SD14
SOIL TYPE	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	DUPLICATE
ABNs (ug/kg)										
Acenaphthene	ND(460)	-	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)
Acenaphthylene	ND(460)	-	ND(175)	ND(175)	ND(175)	ND(175)	ND(175)	ND(175)	ND(175)	ND(175)
Anthracene	TR(460)	-	ND(95)	2010	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)
Benzo(a)anthracene	TR(460)	-	760	2210	1410	ND(390)	ND(390)	513 A	ND(390)	ND(390)
Benzo(a)pyrene	TR(460)	-	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)
Benzo(b,k)fluoranthene	TR(460)	-	1092	ND(240)	ND(240)	ND(240)	ND(240)	590	ND(240)	ND(240)
Benzo(g,h,i)perylene	TR(460)	-	760	ND(205)	ND(205)	ND(205)	ND(205)	ND(205)	ND(205)	ND(205)
Bis(2-ethylhexyl)phthalate	TR(460)	-	1555	5805	1925	-	ND(125)	-	ND(125)	ND(125)
Butylbenzylphthalate	ND(460)	-	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)
p-Chloro-m-cresol	ND(460)	-	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)	217	ND(150)	ND(150)
2-Chlorophenol	ND(460)	-	ND(165)	ND(165)	ND(165)	ND(165)	ND(165)	ND(165)	ND(165)	ND(165)
Chrysene	TR(460)	-	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)
Dibenzo(a,h)anthracene	ND(460)	-	220 A	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)
1,2-Dichlorobenzene	ND(460)	-	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)
1,4-Dichlorobenzene	ND(460)	-	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)
Diethylphthalate	ND(460)	-	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)
2,4-Dimethylphenol	ND(460)	-	ND(135)	ND(135)	ND(135)	ND(135)	ND(135)	ND(135)	ND(135)	ND(135)
Dimethylphthalate	ND(460)	-	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)
Di-n-butyl phthalate	ND(460)	-	1940	2430	ND(125)	801	1410	-	1460	1344
Di-n-octyl phthalate	ND(460)	-	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)	ND(125)
2,4-Dinitrophenol	ND(460)	-	ND(2100)	ND(2100)	ND(2100)	ND(2100)	ND(2100)	ND(2100)	ND(2100)	ND(2100)
2,4-Dinitrotoluene	ND(460)	-	ND(285)	ND(285)	ND(285)	ND(285)	ND(285)	ND(285)	ND(285)	ND(285)
Fluoranthene	470	-	917	2380	1390	ND(110)	ND(110)	672	ND(110)	ND(110)
Fluorene	ND(460)	-	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)
Indeno(1,2,3-cd)pyrene	TR(460)	-	641	ND(185)	ND(185)	ND(185)	ND(185)	ND(185)	ND(185)	ND(185)
Isophorone	ND(460)	-	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)	ND(110)
Naphthalene	1100	-	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)	ND(80)
Nitrobenzene	ND(460)	-	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)
n-Nitrosodi-n-propylamine	ND(460)	-	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)
n-Nitrosodiphenylamine	ND(460)	-	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)
Pentachlorophenol	ND(460)	-	ND(180)	ND(180)	ND(180)	ND(180)	ND(180)	ND(180)	ND(180)	ND(180)
Phenanthrene	TR(460)	-	698	ND(270)	1330	ND(270)	ND(270)	611	ND(270)	ND(270)
Phenol	ND(460)	-	ND(75)	ND(75)	ND(75)	ND(75)	ND(75)	ND(75)	ND(75)	ND(75)
Pyrene	500	-	ND(95)	2300	1520	ND(95)	ND(95)	609	ND(95)	ND(95)
1,2,4-Trichlorobenzene	ND(460)	-	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)	ND(95)

TABLE XI
SUMMARY OF OHM SEDIMENT QUALITY DATA - 1984 to 1988
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

SAMPLE DESIGNATION	JERRY'S POND	J3	SD4	SD6	SD8	SD11	SD12	SD13	SD14	SD101
SAMPLING DATE	1/22/1985	3/15/1985	10/9/1987	10/9/1987	10/9/1987	10/9/1987	10/9/1987	10/9/1987	10/9/1987	10/9/1987
SAMPLE DEPTH (FT.)	---	---	---	---	---	---	---	---	---	---
EXPLORATION TYPE	POND	POND	STREAM	STREAM	STREAM	POND	POND	POND	POND	SD14
SOIL TYPE	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	DUPLICATE
TOTAL METALS (mg/kg)										
Antimony	ND(2.8)	-	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Arsenic	18	-	20.1	1.6	3.7	2	1.9	5.7	13.4	11.2
Barium	-	-	-	-	-	-	-	-	-	-
Beryllium	ND(0.55)	-	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)
Cadmium	0.91	-	1.1	1.2	1.3	0.6	0.6	0.8	1.1	1.1
Chromium	21	-	43.8	27.4	46	5.1	4.9	6.3	7.9	7.1
Copper	25	-	42	57.1	57	4.1	6.5	6.1	9.2	8.2
Iron	-	16000	-	-	-	-	-	-	-	-
Lead	64	-	73.4	116	128	13.7	27.4	16.4	32	26.8
Mercury	0.11	-	ND(0.106)	ND(0.106)	ND(0.106)	ND(0.106)	ND(0.106)	ND(0.106)	ND(0.106)	ND(0.106)
Nickel	14	-	9.9	10.8	12.5	4.7	4.8	6.3	7.9	7.1
Selenium	ND(2.5)	-	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Silver	ND(0.51)	-	0.2	0.2	0.2	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Thallium	ND(2.5)	-	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Zinc	110	-	106	156	164	18.4	41.8	19.4	72.8	58.1
EP TOXICITY	-	-	-	-	-	-	-	-	-	-
OIL & GREASE (mg/kg)	-	-	4550	12990	9930	420	-	615	1820	3200
PETROLEUM HYDROCARBON IDENTIFICATION (mg/kg)										
Quantity	-	-	2104	511	3717	323	265	163	512	629
Type	-	-	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6	FUEL OIL #6

TABLE XI
SUMMARY OF OHM SEDIMENT QUALITY DATA - 1984 to 1988
W.R. GRACE & CO.-CONN
CAMBRIDGE, MA
RTN 3-0277

SAMPLE DESIGNATION	JERRY'S POND	J3	SD4	SD6	SD8	SD11	SD12	SD13	SD14	SD101
SAMPLING DATE	1/22/1985	3/15/1985	10/9/1987	10/9/1987	10/9/1987	10/9/1987	10/9/1987	10/9/1987	10/9/1987	10/9/1987
SAMPLE DEPTH (FT)	---	---	---	---	---	---	---	---	---	---
EXPLORATION TYPE	POND	POND	STREAM	STREAM	STREAM	POND	POND	POND	POND	SD14
SOIL TYPE	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	DUPLICATE
WASTE CHARACTERISTICS										
Total Cyanide (mg/kg)	ND(0.7)	-	ND(3)	ND(3)	ND(3)	ND(3)	ND(3)	ND(3)	ND(3)	ND(3)
Total Phenolics (mg/kg)	ND(0.28)	-	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
Formaldehyde (mg/kg)	5.1	-	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Sulfate (mg/kg)	-	-	-	-	-	-	-	-	-	-
Corrosivity (pH)	-	-	-	-	-	-	-	-	-	-
Specific Conductance (ushos/cm)	-	-	-	-	-	-	-	-	-	-
Biological Oxygen Demand (mg/kg)	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids (mg/kg)	-	-	-	-	-	-	-	-	-	-
Chloride (mg/kg)	-	-	-	-	-	-	-	-	-	-

ABBREVIATIONS:

- - . Not analyzed; or invalid data as determined by the validation process.

ND: Compound not detected, detection limit not available.

TR: Compound detected below laboratory reporting limit; detection limit not available.

ND(2.5): Not detected; number in parentheses is equal to the laboratory Reporting Limit

A 54: Concentration is Approximate as determined by validation process.

TR (460): Trace Concentration. Compound detected at concentrations below the reporting limit; number in parentheses is equal to the laboratory reporting limit, detection limit.

PASS: Extracted metals not detected or detected below toxic levels.

VOCs: Volatile Organic Compounds

ABNs: Acid/Base/Neutral Extractables

NOTES:

1. This table includes only those compounds detected on the dates indicated.
2. " " indicates trans 1,2-Dichlorothene and cis 1,2-dichloroethene grouped and reported as 1,2-Dichlorothene
3. " " indicates possible contribution from ERCO matrix spiking solution.

TABLE XII
SUMMARY OF ASBESTOS ANALYTICAL RESULTS IN SEDIMENT
W.R. GRACE & CO.-CONN.
CAMBRIDGE, MASSACHUSETTS
RTN 3-0277

SAMPLE ID	SAMPLE TYPE	DATE SAMPLED	ASBESTOS CONTENT (%)
SED-1	Sediment	21-Oct-99	NVA
SED-2	Sediment	21-Oct-99	NVA
SED-3	Sediment	21-Oct-99	NVA
SED-4	Sediment	21-Oct-99	NVA
SED-5	Sediment	21-Oct-99	NVA
SED-6	Sediment	21-Oct-99	NVA
SED-7	Sediment	21-Oct-99	NVA
SED-8	Sediment	21-Oct-99	NVA
SED-9	Sediment	21-Oct-99	NVA
SED-10	Sediment	21-Oct-99	NVA

NOTES AND ABBREVIATIONS:

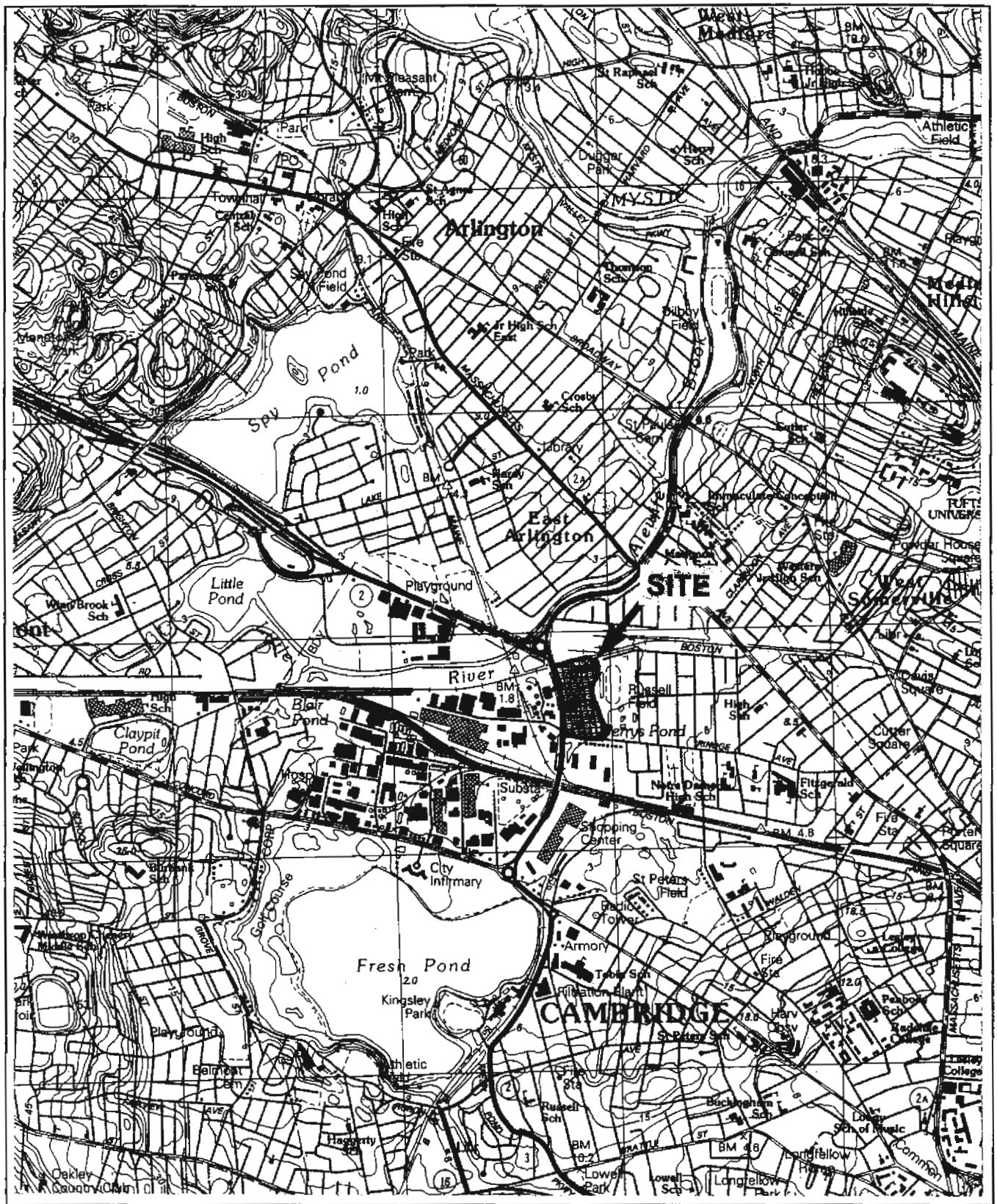
1. Samples analyzed by the Protocol for Determining Asbestos Content in River Sediments and Soil Samples, US EPA Region 1, in conjunction with EPA Method 600/R-93-116 Polarized Light Microscopy, July 1993.
2. NVA: no visible asbestos.

TABLE XIII
SUMMARY OF 1998 AND 1999 HIGH VOLUME AMBIENT AND BACKGROUND AIR SAMPLING
W.R. GRACE & CO. - CONN.
CAMBRIDGE, MASSACHUSETTS

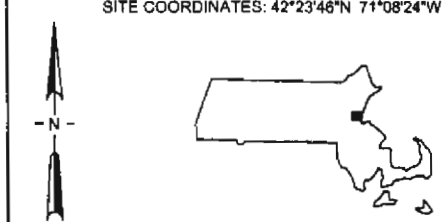
STATION NO.	SAMPLE IDENTIFICATION	DATE COLLECTED	PCM FIBER CONCENTRATION (fibers/cc)	NO. of FIBERS > 5 microns	TEM FIBER CONCENTRATION (fibers >5.0 microns /cc)
AMBIENT AIR					
1	411565	10-Jul-98	0.003	--	--
2	411566	10-Jul-98	0.009	--	--
3	411567	10-Jul-98	0.002	--	--
4	411568	10-Jul-98	0.004	--	--
5	411569	10-Jul-98	0.003	--	--
6	411570	14-Jul-98	<0.002	--	--
7	411571	14-Jul-98	0.006	--	--
8	411572	14-Jul-98	0.002	--	--
9	411573	14-Jul-98	<0.002	--	--
10	411574	14-Jul-98	0.002	--	--
11	411575	14-Jul-98	0.005	--	--
12	411576	14-Jul-98	<0.002	--	--
13	411577 / 411557	14-Jul-98	0.30	0	<0.0044
14	411578	14-Jul-98	0.003	--	--
15	411579	14-Jul-98	0.002	--	--
16	411560	14-Jul-98	<0.002	--	--
17	411561	14-Jul-98	<0.002	--	--
18	411562	14-Jul-98	<0.002	--	--
19	411563	14-Jul-98	<0.002	--	--
20	411564	14-Jul-98	0.002	--	--
BACKGROUND AIR					
1	516881	10-Dec-98	--	0	<0.0002
2	516882	10-Dec-98	--	0	<0.0002
3	516883	10-Dec-98	--	0	<0.0002
4	516884	10-Dec-98	--	0	<0.0002
5	516885	10-Dec-98	--	0	<0.0002
6	516886	10-Dec-98	--	0	<0.0002
7	516887	10-Dec-98	--	0	<0.0002
8	516888	10-Dec-98	--	0	<0.0002
9	516889	10-Dec-98	--	0	<0.0002
10	516890	10-Dec-98	--	0	<0.0002
AMBIENT AIR					
Air #1 Zone #2	701317	29-Oct-99	--	0	<0.0002
Air #2 Zone #4	701318	29-Oct-99	--	0	<0.0002
Air #3 Zone #4	701320	29-Oct-99	--	0	<0.0002
Air #4 Zone #4	710965	29-Oct-99	--	0	<0.0002
Air #5 Zone #4	701319	29-Oct-99	--	0	<0.0002
Air #6 Zone #1	704931	29-Oct-99	--	0	<0.0002
Air #7 Zone #1	710961	29-Oct-99	--	0	<0.0002
Air #8 Zone #4	710962	29-Oct-99	--	0	<0.0002
Air #9 Zone #3	710963	29-Oct-99	--	0	<0.0002
Air #10 Zone #1	710964	29-Oct-99	--	0	<0.0002

NOTES AND ABBREVIATIONS:

1. Samples were prepared according to Phase Contrast Microscopy methodology as specified in NIOSH Method 7400, Issue #2, dated 15 August 1994.
2. fibers/cc: fibers (>5 microns in length, >0.25 microns in width, 3:1 aspect ratio) per cubic centimeter
3. TEM samples were prepared and analyzed using EPA Method 600-R93-116.
4. Samples were collected using High Volume Sampling Pumps set at flow rates of approximately 12 liters per minute in accordance with the AHERA regulations.
5. NSD: No Asbestos Structures Detected
6. "Background" samples were collected during the December 1998 soil sampling event.



SITE COORDINATES: 42°23'46"N 71°08'24"W



U.S.G.S. QUADRANGLE: BOSTON NORTH, MA

HALEY & ALDRICH

UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

W. R. GRACE & CO. - CONN.
62 WHITTEMORE AVENUE
CAMBRIDGE, MASSACHUSETTS

PROJECT LOCUS

APPROXIMATE SCALE: 1:25,000

MARCH 2006

10063-066 A229

FIGURE 1

LEGEND:

- WETLAND LIMITS
- FLOOD LIMITS
- APPROXIMATE SITE LIMITS

NOTES:

1. BASE PLAN SOURCE: PLAN ENTITLED "EXISTING CONDITIONS" BY URS GREINER WOODLAND CYLDE, DATED 23 NOVEMBER 1999.
2. ALL LOCATIONS, DIMENSIONS AND SITE FEATURES ARE APPROXIMATE.
3. FLOOD LIMIT APPROXIMATE ELEV. = 8.48 NGVD.

0 160 320

SCALE IN FEET

HALEY & ALDRICH

UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

W.R.GRACE & CO. - CONN.
62 WHITTEMORE AVENUE
CAMBRIDGE, MASSACHUSETTS

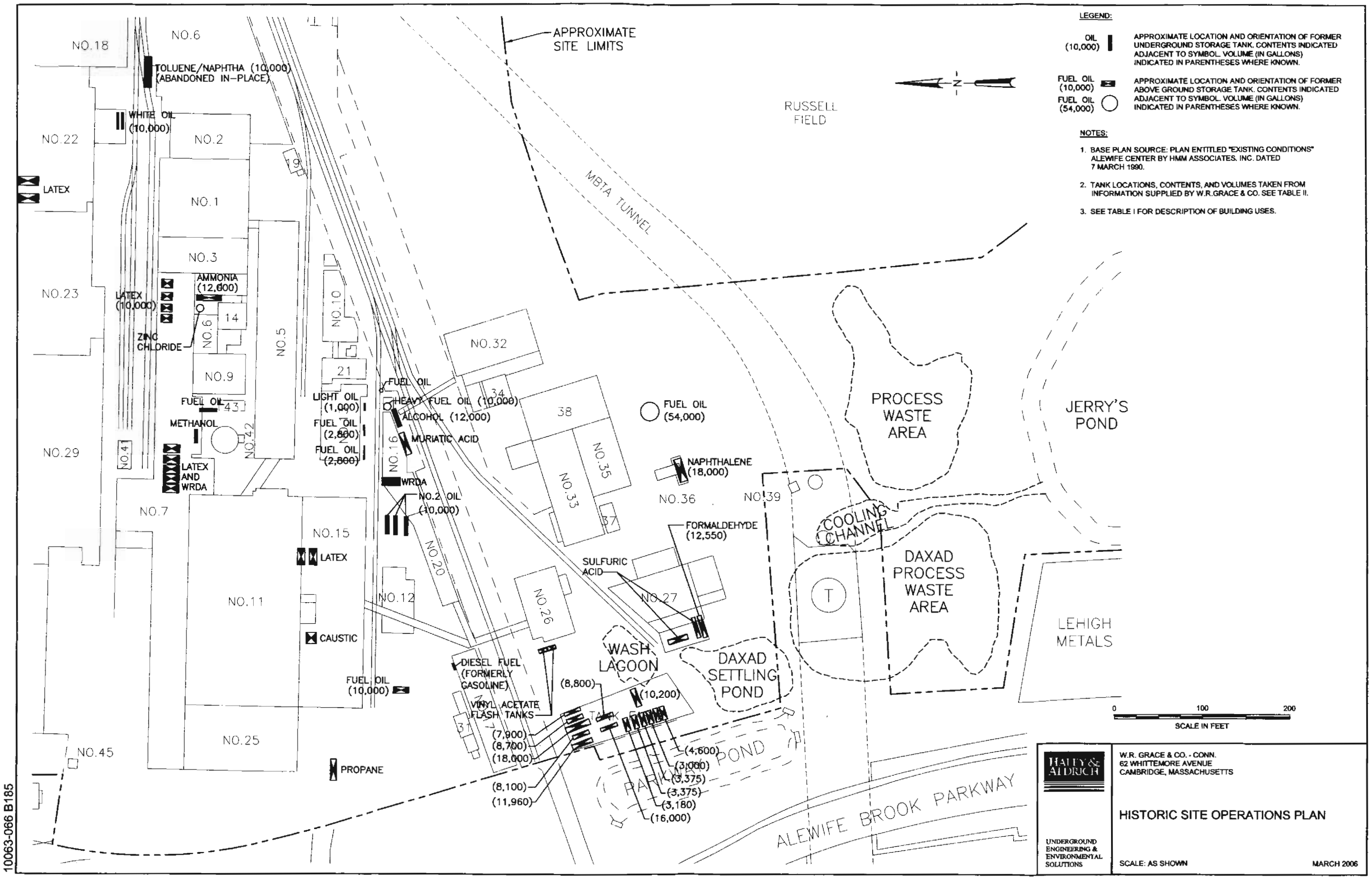
SITE AND SURROUNDING PROPERTIES, FLOOD PLAIN AND WETLAND LIMIT PLAN

SCALE: AS SHOWN

MARCH 2006

10063-074 B184

FIGURE 2



LEGEND:

OIL (10,000) — APPROXIMATE LOCATION AND ORIENTATION OF FORMER UNDERGROUND STORAGE TANK. CONTENTS INDICATED ADJACENT TO SYMBOL. VOLUME (IN GALLONS) INDICATED IN PARENTHESES WHERE KNOWN.

FUEL OIL (10,000) / FUEL OIL (54,000) — APPROXIMATE LOCATION AND ORIENTATION OF FORMER ABOVE GROUND STORAGE TANK. CONTENTS INDICATED ADJACENT TO SYMBOL. VOLUME (IN GALLONS) INDICATED IN PARENTHESES WHERE KNOWN.

NOTES:

1. BASE PLAN SOURCE: PLAN ENTITLED "EXISTING CONDITIONS" ALEWIFE CENTER BY HMM ASSOCIATES, INC. DATED 7 MARCH 1990.
2. TANK LOCATIONS, CONTENTS, AND VOLUMES TAKEN FROM INFORMATION SUPPLIED BY W.R.GRACE & CO. SEE TABLE II.
3. SEE TABLE I FOR DESCRIPTION OF BUILDING USES.

HALEY & ALDRICH

UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

W.R. GRACE & CO. - CONN.
62 WHITTEMORE AVENUE
CAMBRIDGE, MASSACHUSETTS

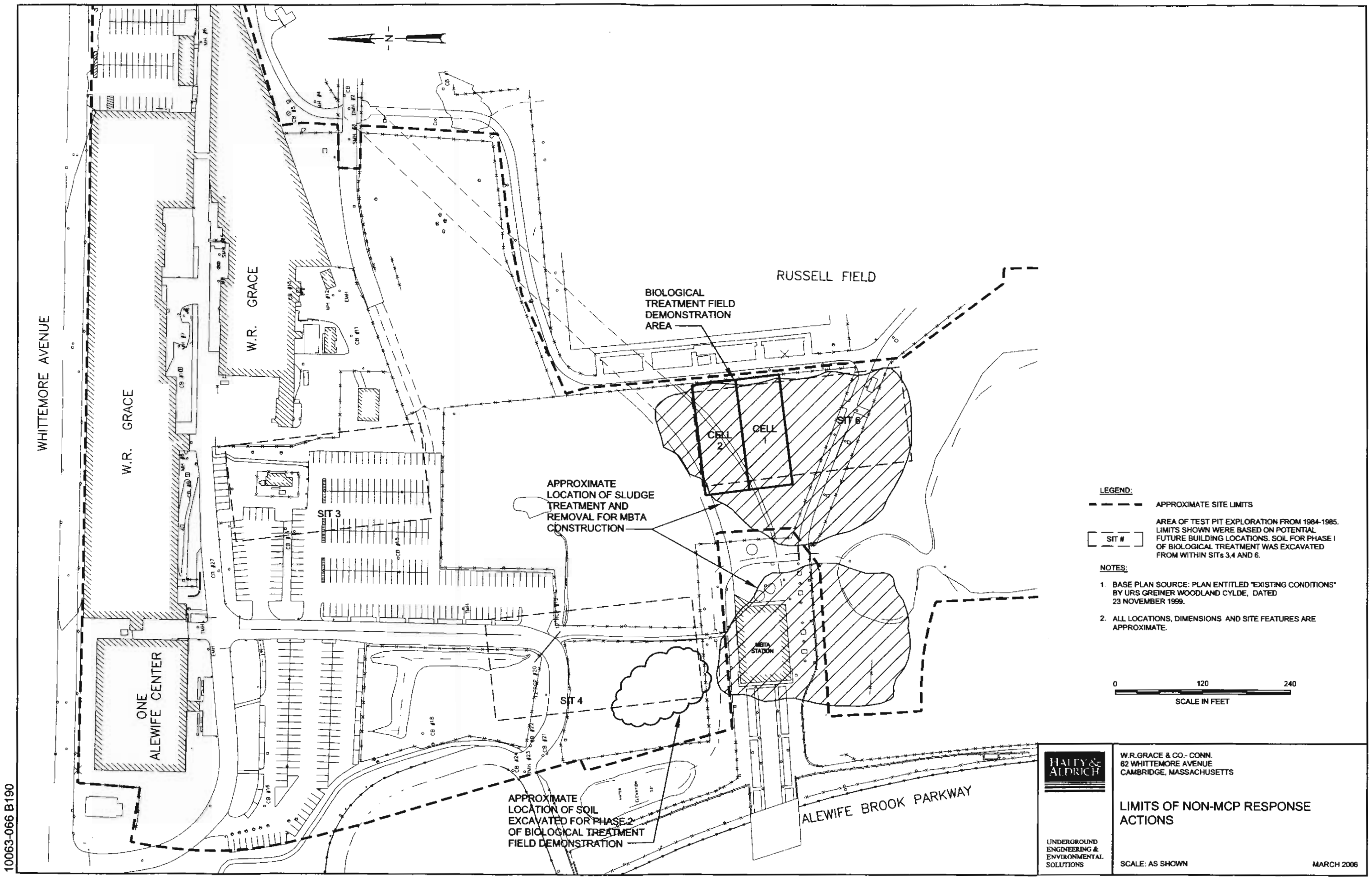
HISTORIC SITE OPERATIONS PLAN

SCALE: AS SHOWN

MARCH 2006

10063-066 B185

FIGURE 3



10063-066 B190

FIGURE 4

10063-066 A183

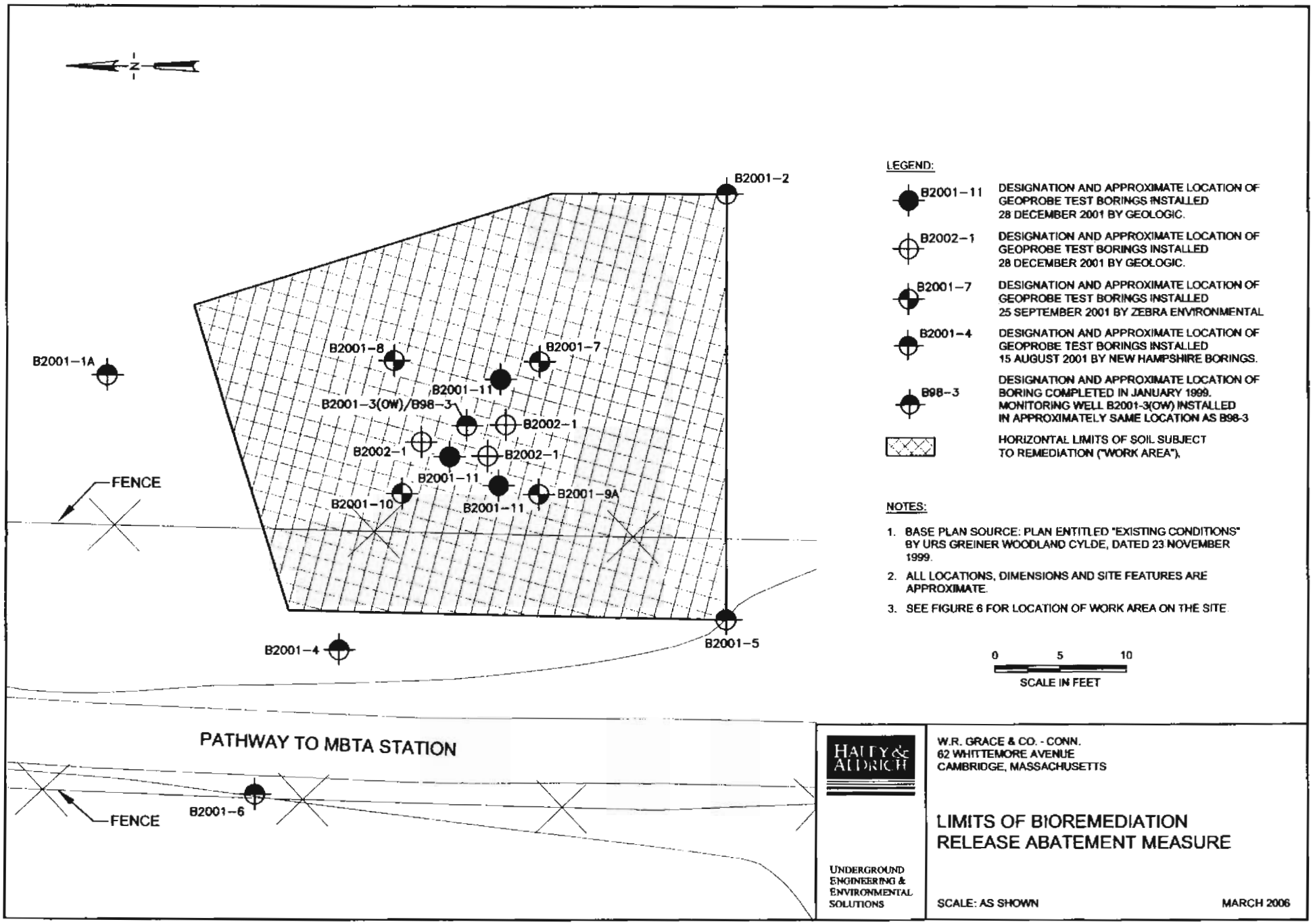


FIGURE 5

LEGEND:

B96-1	APPROXIMATE LOCATION AND DESIGNATION OF BORINGS COMPLETED IN JANUARY 1999 (EPH)
B95-3	APPROXIMATE LOCATION AND DESIGNATION OF DEEP TEST BORINGS COMPLETED IN JULY 1995 (TPH)
B95-1	APPROXIMATE LOCATION AND DESIGNATION OF SHALLOW TEST BORINGS COMPLETED IN JULY 1995 (TPH)
B903 OW	APPROXIMATE LOCATION AND DESIGNATION OF BORINGS COMPLETED IN JANUARY 1988
SS9	APPROXIMATE LOCATION AND DESIGNATION OF SURFACE SOIL SAMPLE (1987)
B402	APPROXIMATE LOCATION AND DESIGNATION OF TEST BORING COMPLETED FOR ALEWIFE CENTER MASTER STUDY (1984 AND 1985)
TP205	APPROXIMATE LOCATION AND DESIGNATION OF TEST PIT COMPLETED FOR ALEWIFE CENTER MASTER STUDY (1985)
TP13	APPROXIMATE LOCATION AND DESIGNATION OF TEST PIT FOR BUILDING SITE EVALUATION (1986 AND 1987)
	APPROXIMATE SITE LIMITS
	INDICATES AREA WHERE BIOREMEDIATION RAM CONDUCTED. SEE FIGURE 5 FOR BORING COMPLETED IN THIS AREA.
SIT #	AREAS OF TEST PIT EXPLORATIONS FROM 1984-1985. LIMITS SHOWN BASED ON POTENTIAL FUTURE BUILDING LOCATIONS

NOTES:

1. BASE PLAN SOURCE: PLAN ENTITLED "EXISTING CONDITIONS" BY URS GREINER WOODLAND CYLDE, DATED 23 NOVEMBER 1999.
2. ALL LOCATIONS, DIMENSIONS AND SITE FEATURES ARE APPROXIMATE.

0 80 160 240 320

SCALE IN FEET

HALEY & ALDRICH

UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

W.R.GRACE & CO. - CONN.
62 WHITTEMORE AVENUE
CAMBRIDGE, MASSACHUSETTS

OIL AND HAZARDOUS MATERIALS SOIL EXPLORATION LOCATION PLAN

SCALE: AS SHOWN

MARCH 2006

10063-066 D191

FIGURE 6

LEGEND:

- AB2-3A — DESIGNATION AND APPROXIMATE LOCATION OF GEOPROBE BORING COMPLETED BY HALEY & ALDRICH IN SEPTEMBER 2003.
- WRG-01 — DESIGNATION AND APPROXIMATE LOCATION OF BORING COMPLETED BY THE USEPA ON 6 AND 7 SEPTEMBER 2000.
- AB2-38 / AB2-38 — DESIGNATION AND APPROXIMATE LOCATION OF BORING COMPLETED BY HALEY & ALDRICH IN DECEMBER 1998.
- AB2-152 / AB2-148 — DESIGNATION AND APPROXIMATE LOCATION OF HAND- COLLECTED SURFICIAL SAMPLE AND SUBSURFACE SAMPLE COLLECTION BY BORING BY HALEY & ALDRICH IN DECEMBER 1998.
- AB-1 — DESIGNATION AND APPROXIMATE LOCATION OF BORING COMPLETED BY HALEY & ALDRICH IN MAY 1998.

NOTES:

1. PLAN PREPARED FROM "EXISTING CONDITIONS, ALEWIFE CENTER, CAMBRIDGE, MASSACHUSETTS," PREPARED BY HMM ASSOCIATES, INC., UNDATED.
2. ELEVATION DATUM IS MBTA WHICH IS 105.87 BELOW NGVD.

APPROXIMATE SITE LIMITS

W.R. GRACE

W.R. GRACE

WHITTEMORE AVENUE

ONE ALEWIFE CENTER

M.B.T.A. ALEWIFE STATION

LEHIGH/ BABO'S PARCEL

BRICK PLAZA

BRICK PLAZA

JERRY'S POND

PARKWAY POND

INFIELD POND

BIT PARKING AREA

BIT WALK

BIT ROADWAY

SLIDING GATE

7'C.L.F.

AVENUE

RINDGE

PARKWAY

BROOK

ALEWIFE

0 50 100 150 200 250

SCALE IN FEET

10063-066 E186

HALEY & ALDRICH

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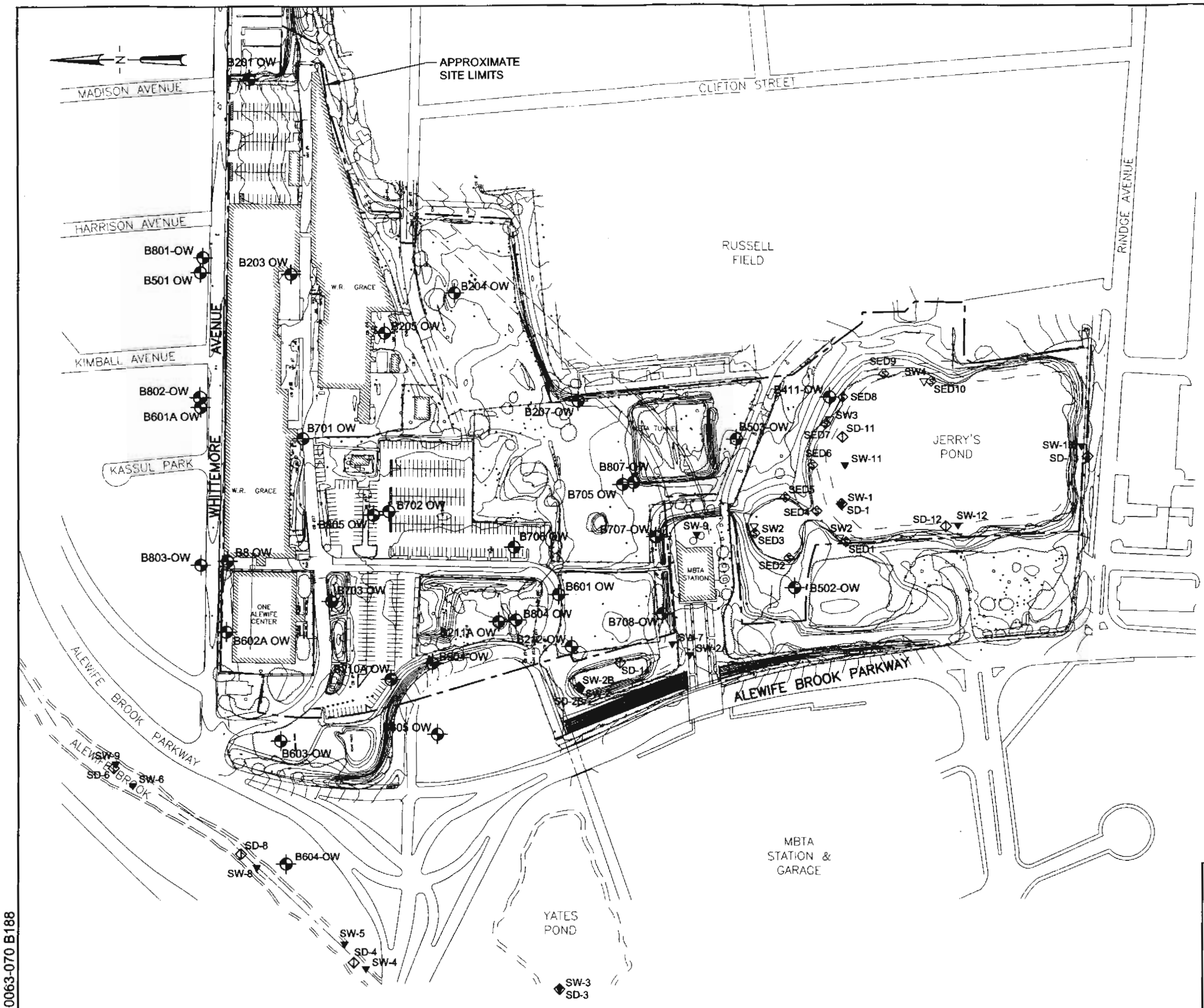
CAMBRIDGE, MASSACHUSETTS

ASBESTOS SOIL EXPLORATION LOCATION PLAN

SCALE: AS SHOWN

MARCH 2006

FIGURE 7



LEGEND:

B904-OW	DESIGNATION AND APPROXIMATE LOCATION OF OBSERVATION WELL.
SW-8	DESIGNATION AND APPROXIMATE LOCATION OF SURFACE WATER SAMPLE - OHM.
SD-4	DESIGNATION AND APPROXIMATE LOCATION OF SEDIMENT SAMPLE - OHM.
SED1	LOCATION AND DESIGNATION OF SEDIMENT SAMPLE - ASBESTOS.
SW1	LOCATION AND DESIGNATION OF SURFACE WATER SAMPLE - ASBESTOS.

NOTES:

1. BASE PLAN SOURCE: PLAN ENTITLED "EXISTING CONDITIONS" BY URS GREINER WOODLAND CYLDE, DATED 23 NOVEMBER 1999.

0 200 400
SCALE IN FEET

HALEY & ALDRICH
UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

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CAMBRIDGE, MASSACHUSETTS

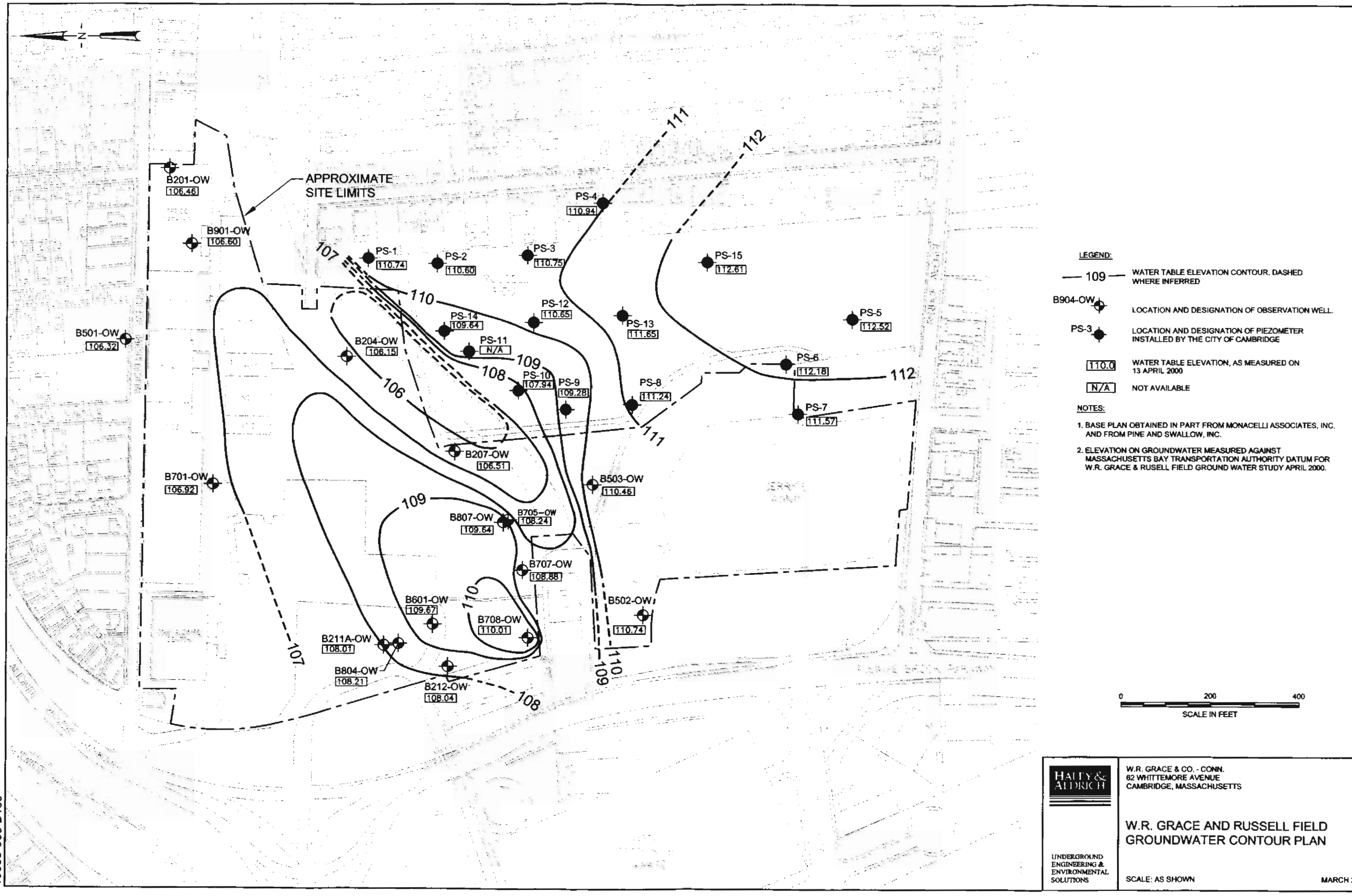
GROUNDWATER, SURFACE WATER, AND SEDIMENT SAMPLING LOCATION PLAN

SCALE: AS SHOWN

MARCH 2006

10063-070 B188

FIGURE 8



LEGEND:

— 109 — WATER TABLE ELEVATION CONTOUR, DASHED WHERE INFERRED

B904-OW ⊕ LOCATION AND DESIGNATION OF OBSERVATION WELL.

PS-3 ⊕ LOCATION AND DESIGNATION OF PIEZOMETER INSTALLED BY THE CITY OF CAMBRIDGE

110.0 WATER TABLE ELEVATION, AS MEASURED ON 13 APRIL 2000

N/A NOT AVAILABLE

NOTES:

1. BASE PLAN OBTAINED IN PART FROM MONACELLI ASSOCIATES, INC. AND FROM PINE AND SWALLOW, INC.
2. ELEVATION ON GROUNDWATER MEASURED AGAINST MASSACHUSETTS BAY TRANSPORTATION AUTHORITY DATUM FOR W.R. GRACE & RUSELL FIELD GROUND WATER STUDY APRIL 2000.

HALEY & ALDRICH

UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

W.R. GRACE & CO. - CONN.
62 WHITTEMORE AVENUE
CAMBRIDGE, MASSACHUSETTS

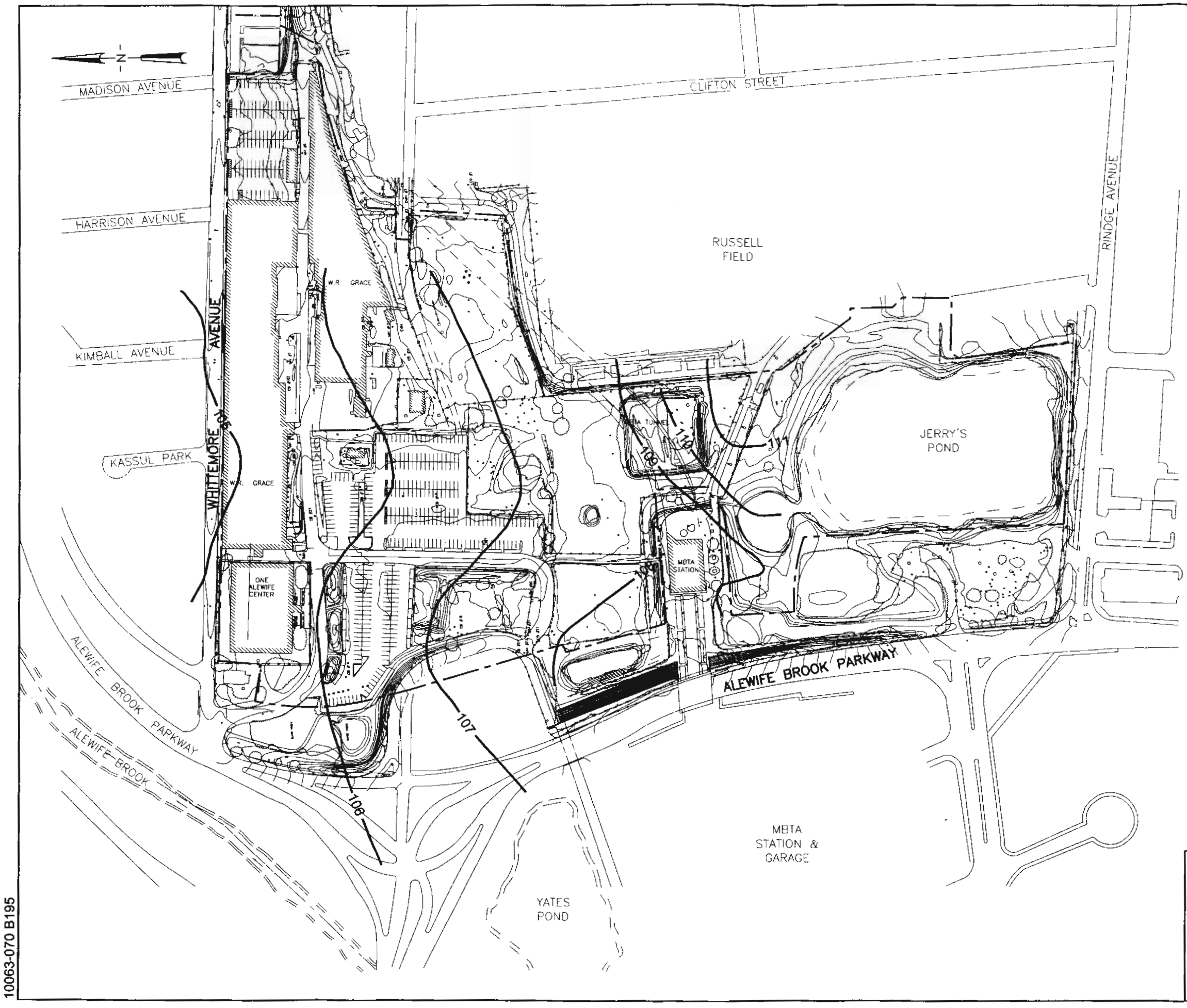
W.R. GRACE AND RUSSELL FIELD GROUNDWATER CONTOUR PLAN

SCALE: AS SHOWN

MARCH 2006

10063-066 B189

FIGURE 9



LEGEND:

107 — WATER TABLE ELEVATION CONTOUR BASED ON TYPICAL ELEVATIONS OBTAINED DURING LONG-TERM GROUNDWATER MONITORING PROGRAM.

NOTES:

1. BASE PLAN SOURCE: PLAN ENTITLED "EXISTING CONDITIONS" BY URS GREINER WOODLAND CYLDE, DATED 23 NOVEMBER 1999.

0 200 400
SCALE IN FEET

HALEY & ALDRICH
UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

W. R. GRACE & CO. - CONN.
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CAMBRIDGE, MASSACHUSETTS

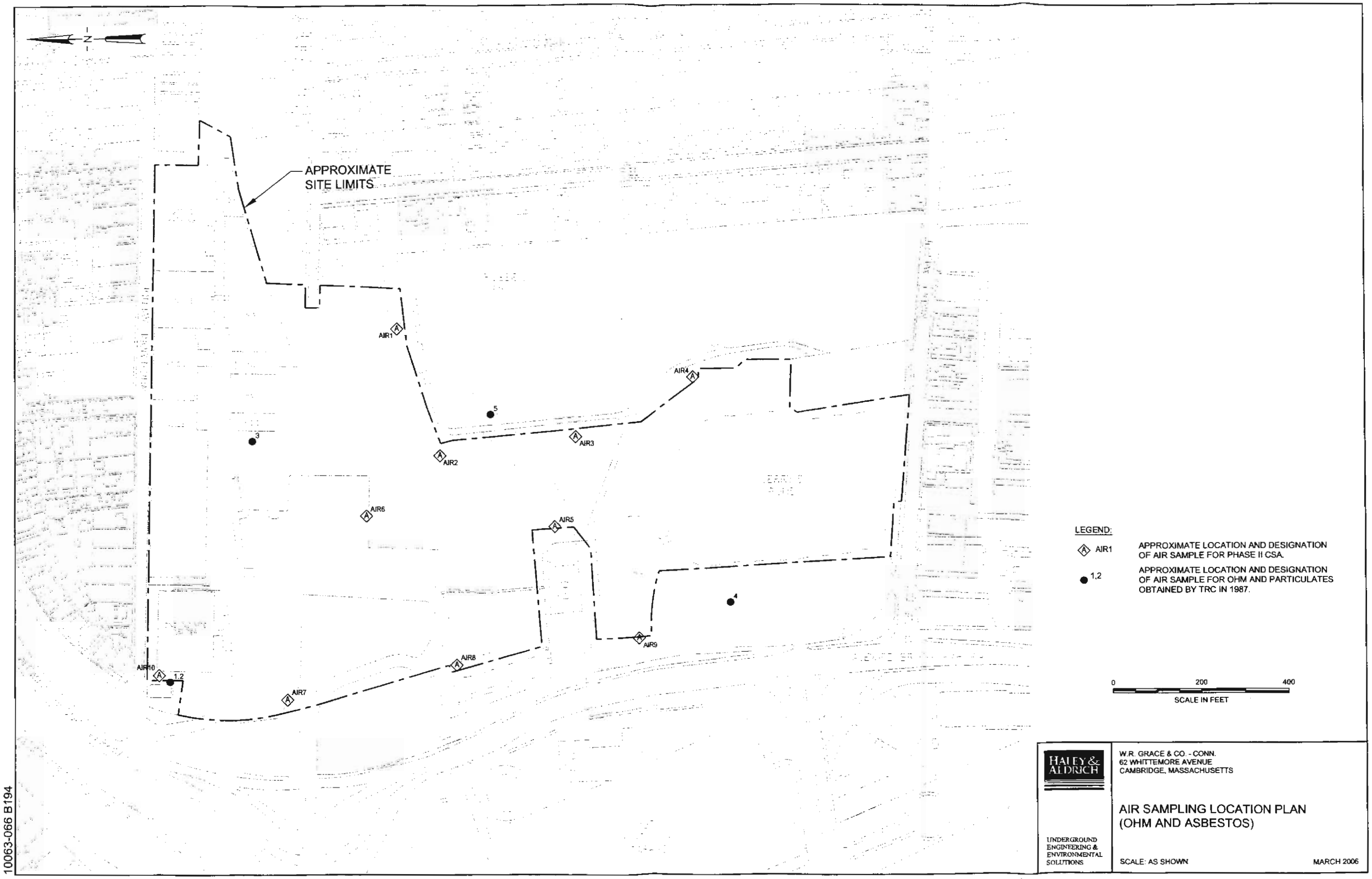
GENERALIZED HISTORIC GROUNDWATER CONTOUR PLAN

SCALE: AS SHOWN

MARCH 2006

10063-070 B195

FIGURE 10



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CAMBRIDGE, MASSACHUSETTS

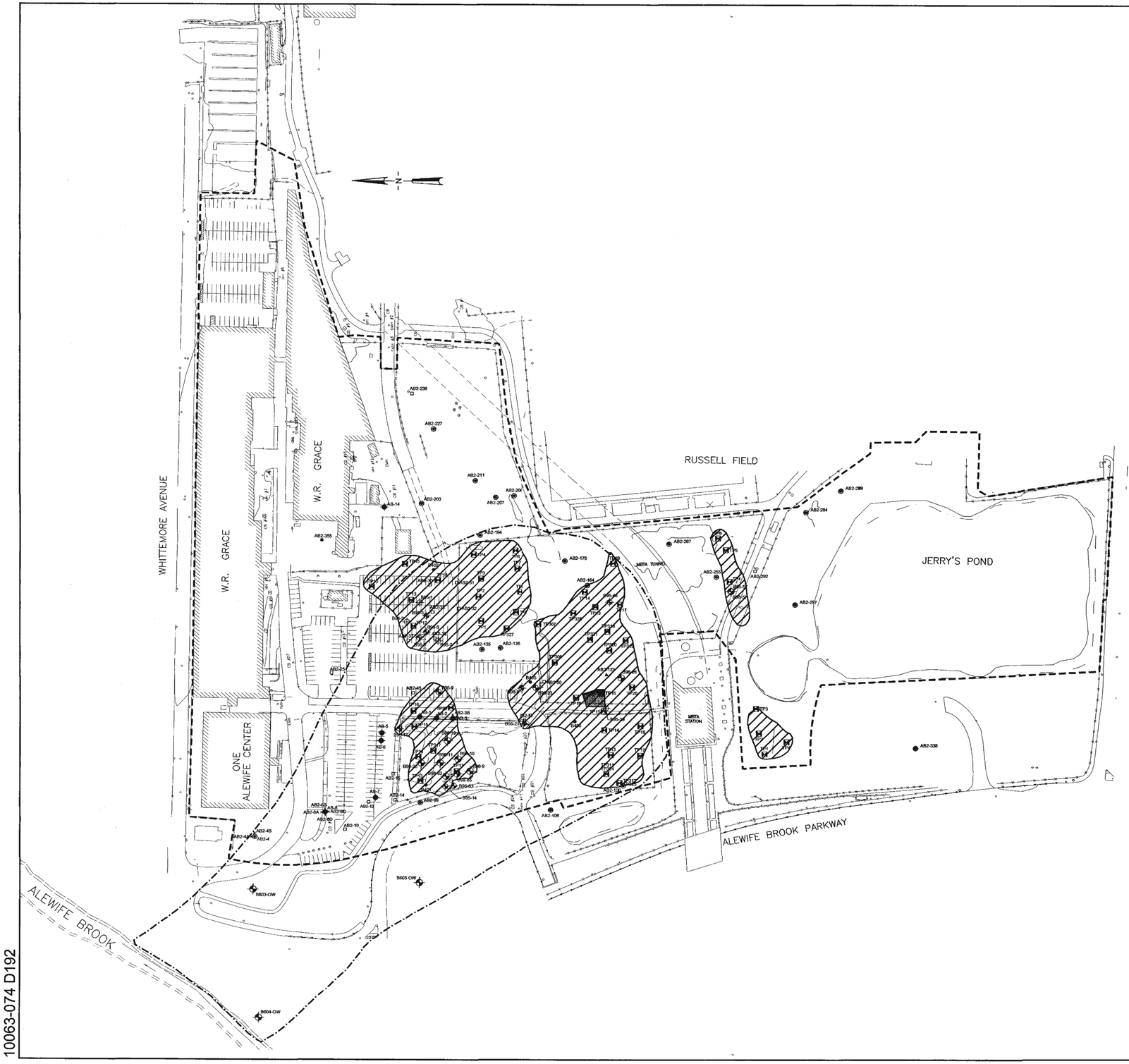
AIR SAMPLING LOCATION PLAN (OHM AND ASBESTOS)

SCALE: AS SHOWN

MARCH 2006

10063-066 B194

FIGURE 11



LEGEND:

- B96-1 — APPROXIMATE LOCATION AND DESIGNATION OF BORINGS COMPLETED IN JANUARY 1999 (EPH)
- B95-3 — APPROXIMATE LOCATION AND DESIGNATION OF DEEP TEST BORINGS COMPLETED IN JULY 1995 (TPH)
- B95-1 — APPROXIMATE LOCATION AND DESIGNATION OF SHALLOW TEST BORINGS COMPLETED IN JULY 1995 (TPH)
- B402 — APPROXIMATE LOCATION AND DESIGNATION OF TEST BORING COMPLETED FOR ALEWIFE CENTER MASTER STUDY (1984 AND 1985)
- TP13 — APPROXIMATE LOCATION AND DESIGNATION OF TEST PIT BUILDING SITE EVALUATION (1986 AND 1987)
- SAMPLE LOCATIONS REPRESENT ASBESTOS DETECTED AT GREATER THAN 1 PERCENT AT THAT SAMPLING LOCATION BY PLM BY ONE OR MORE OF VARIOUS INTERESTED PARTIES.
- AREAS OF THE SITE WITH CONSISTENT EVIDENCE OF GREATEST NAPHTHALENE AND/OR PETROLEUM CONTIMAINATION PRESENT IN SOIL
- APPROXIMATE LIMITS OF GROUNDWATER DISPOSAL SITE
- APPROXIMATE LIMITS OF SOIL DISPOSAL SITE
- INDICATES AREA WHERE BIOREMEDIATION RAM CONDUCTED.

NOTES:

1. BASE PLAN SOURCE: PLAN ENTITLED "EXISTING CONDITIONS" BY URS GREINER WOODLAND CYLDE, DATED 23 NOVEMBER 1999.
2. ALL LOCATIONS, DIMENSIONS AND SITE FEATURES ARE APPROXIMATE.

0 100 200 300 400
SCALE IN FEET

HALEY & ALDRICH
UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

W.R.GRACE & CO. - CONN.
62 WHITTEMORE AVENUE
CAMBRIDGE, MASSACHUSETTS

LIMITS OF DISPOSAL SITE

SCALE: AS SHOWN

MARCH 2006

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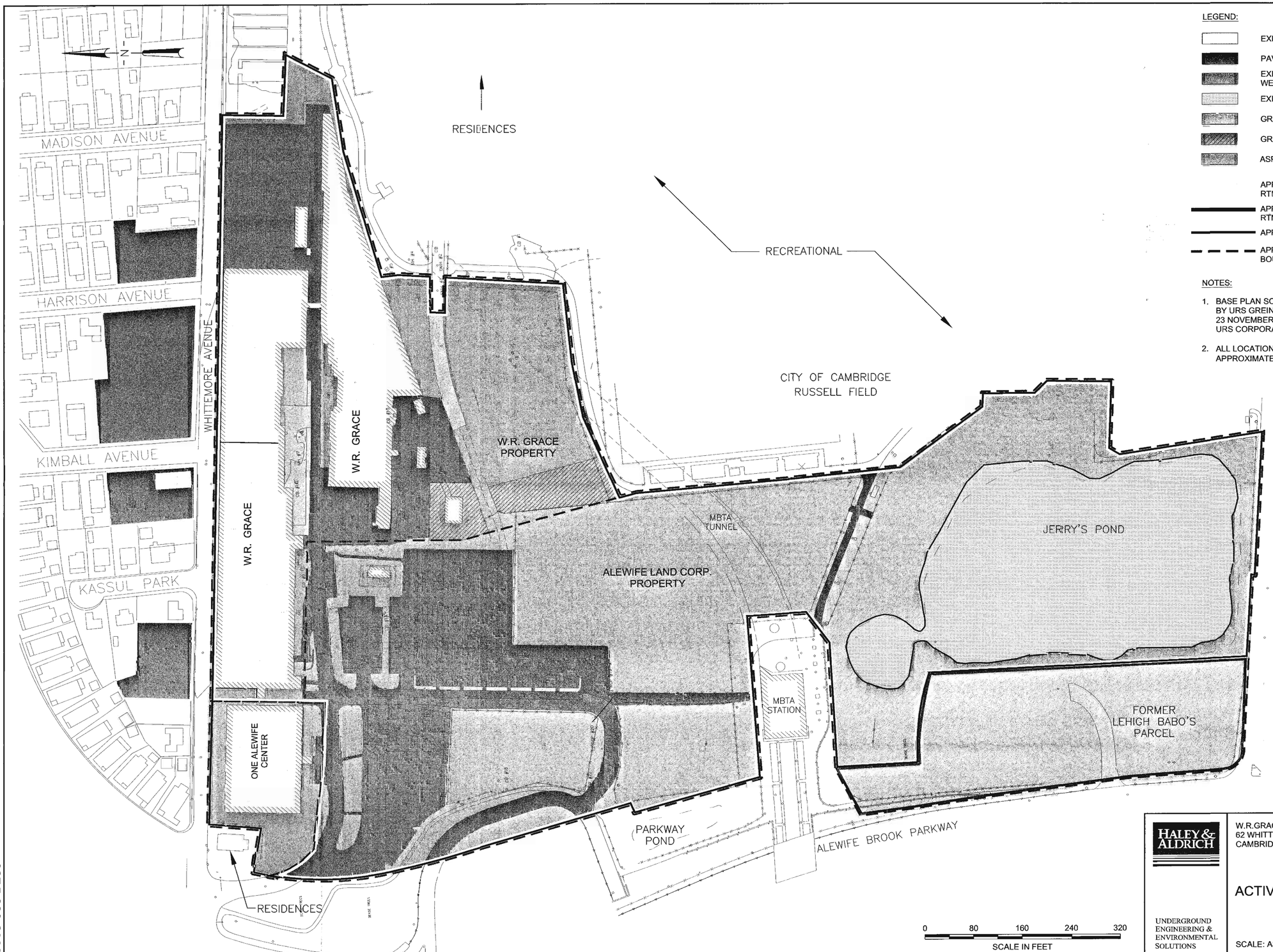
FIGURE 12



LEGEND:

- EXISTING STRUCTURE
- PAVEMENT AND CONCRETE WALKS
- EXISTING LANDSCAPING, GRASS FIELD, WETLAND OR OTHERWISE VEGETATED AREA.
- EXISTING WATER BODY
- GRAVEL COVER
- GRAVEL AND VEGETATION
- ASPHALT AND VEGETATION
- APPROXIMATE LIMITS OF AUL ASSOCIATED WITH RTN 3-0277
- APPROXIMATE LIMITS OF AUL ASSOCIATED WITH RTN 3-3411
- APPROXIMATE LIMITS OF SOIL DISPOSAL SITE
- APPROXIMATE LIMITS OF PROPERTY BOUNDARIES

NOTES:

1. BASE PLAN SOURCE: PLAN ENTITLED "EXISTING CONDITIONS" BY URS GREINER WOODLAND CYLDE, DATED 23 NOVEMBER 1999 AND A PLAN ENTITLED "A.U.L. PLAN" BY URS CORPORATION AES, DATED JANUARY 2004.
2. ALL LOCATIONS, DIMENSIONS AND SITE FEATURES ARE APPROXIMATE.

HALEY & ALDRICH

UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

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ACTIVITY AND USE LIMITATION PLAN

SCALE: AS SHOWN

MARCH 2006

10063-066 D230

FIGURE 13