(Responsible Individual) (Company Name)

I, Eric Bogin , from Viridian Energy & Env

verify that the information provided below is accurate, to the best of my knowledge.

CREDIT COMPLIANCE

Please select the appropriate compliance path

Option1: The project site was determined contaminated by means of an ASTM E1903-97 Phase II Environmental Site Assessment. ☐

-- OR --

Option 2: The site has been defined as a brownfield by a local, state or federal government agency. ☒

NARRATIVE (Required)

Provide a detailed narrative describing the site contamination and remediation efforts undertaken by the project.

Please see attached report.

NARRATIVE (Optional)

Please provide any additional comments or notes regarding special circumstances or considerations regarding the project's credit approach.

☐ The project is seeking point(s) for this credit using an alternate compliance approach. The compliance approach, including references to any applicable Credit Interpretation Rulings is fully documented in the narrative above. *(Indicate the number of points documented in the field below).*

Alternative Compliance Points Documented

Project Name: 10 Akron Street

Credit: SS Credit 3: Brownfield Redevelopment

Points Documented: 1

READY TO SAVE THIS TEMPLATE TO LEED-ONLINE? Please enter your first name, last name and today's date below, followed by your LEED-Online Username and Password associated with the Project listed above to confirm submission of this template.

Eric	Bogin	2008-07-18	ebogin@viridianee.com	
First Name	Last Name	Date	Username (Email Address)	Password

SAVE TEMPLATE TO LEED-ONLINE

PRINT TEMPLATE

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Letter Template Version A1 .

Haley & Aldrich, Inc.
465 Medford St.
Suite 2200
Boston, MA 02129-1400

Tel: 617.886.7400
Fax: 617.886.7600
HaleyAldrich.com

HALEY & ALDRICH

06 March 2008
File No. 12333-121

Jones Lang LaSalle
One Post Office Square
Boston, MA 02109

Attention: Chris Packard

Subject: LEED SS Credit 3: Brownfield Redevelopment
10 Akron Street at Memorial Drive
Harvard University
Cambridge, Massachusetts

Ladies and Gentlemen:

The 10 Akron Street at Memorial Drive, Harvard University, Graduate Student Housing project in Cambridge, Massachusetts is pursuing certification from the LEED (Leadership in Energy and Environmental Design) Green Building Rating System. The purpose of this letter is to provide documentation in support of LEED Brownfield Redevelopment Credit (SS Credit 3) describing the Site contamination that has been remediated as part of Site redevelopment.

LEED Brownfield Redevelopment Credit Intent

The intent of the LEED Brownfield Redevelopment Credit is to rehabilitate damaged sites where development is complicated by environmental contamination ("brownfields"), thereby reducing pressure on undeveloped land. The LEED-NC Reference Guide refers to the EPA definition of "brownfield" as a "real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant."

The subject Site meets the definition of a brownfield due to the presence of oil and hazardous materials in soil, as described below. The 10 Akron Street redevelopment project meets the intent of the Brownfield Redevelopment credit since the project was complicated by the additional cost and required regulatory compliance and soil management work necessitated by the Site contamination, as described in further detail below.

Identification of Contamination

Based upon the urban nature, historic use, and historic filling of the Site (records indicate a portion of the property had been developed as early as 1873, and another portion of the property which was formerly marshland was filled between 1900 and 1934) Harvard University had reason to suspect that the Site soils may be contaminated.

Furthermore, response actions were previously conducted in 1995 at the Site under an Immediate Response Action (IRA) Plan in conjunction with the removal of a 500-gallon capacity No. 2 fuel oil underground storage tank (UST). The IRA for the UST removal consisted of the excavation of up to 50 cubic yards of potentially impacted soil under Release Tracking Number (RTN) 3-12440. A Phase II Comprehensive Site Assessment and Class A-2 Response Action Outcome (RAO)

Statement relating to the UST removal were submitted to Massachusetts Department of Environmental Protection (DEP) in May 1998.

A soil precharacterization program consisting of test borings and chemical testing of soil samples was conducted in 2005 in preparation for Site redevelopment. Chemical results indicated the presence of Semi-Volatile Organic Carbons (SVOC), total petroleum hydrocarbons (TPH), metals (including lead, mercury, antimony, beryllium, and barium), and chlordane (a pesticide) in urban fill soils at concentrations exceeding the applicable Reportable Concentrations specified in the Massachusetts Contingency Plan (MCP).

The findings of the exploration program were published in Haley & Aldrich's "Construction-Related Release Abatement Measure (RAM) Plan" dated November 2005. Copies of relevant portions are provided as Attachment A.

Required Regulatory Compliance and Site Remediation

As required by the MCP, notification of the Reportable Concentrations of contaminants in soil was provided to the DEP. In November 2005, DEP assigned RTN 3-25416 and RTN 3-25417 to the Site, and issued Notices of Responsibility (NOR) to Harvard University. The NORs indicated that DEP considers the property a Disposal Site[1].

Given the presence of contamination at the Site, Harvard University was required by the MCP to prepare several regulatory compliance documents and to hire a Licensed Site Professional (LSP) to oversee the regulatory compliance and soil management work. Harvard University employed Deborah H. Gevalt of Haley & Aldrich, Inc. as the Site LSP.

On behalf of Harvard University, Haley & Aldrich submitted a Release Abatement Measure (RAM) Plan to DEP in November 2005. The RAM activities included on-site treatment, excavation, and offsite management of contaminated soils generated as part of the Site redevelopment. Site remediation activities began in December 2005 and concluded in September 2006. The following is a list of remediation activities:

- Onsite stabilization of soils exhibiting the TCLP-lead characteristic for RCRA Hazardous Waste. Approximately 810 tons of soil were treated in-situ by Soil Solutions, Inc to stabilize leachable lead in soil. Following onsite treatment, 3 confirmatory samples were collected from treated soils and analyzed for TCLP lead. Post-treatment data indicated that the lead had been successfully stabilized and that the soil was no longer classified as a Hazardous Waste. The treated material was transported to Aggregate Recycling Corporation in Elliot, ME; Turnkey Recycling and Environmental Enterprises (TREE) in Gonic, NH; and Fitchburg Landfill in Westminster, MA.

- Off-site soil recycling by asphalt-batching. Approximately 5,936 tons of Remediation Waste were excavated and transported to Aggregate Recycling Corporation in Eliot, ME. This facility recycles petroleum-impacted soils to make asphalt for paving.

[1] "Disposal Site" is defined in the Massachusetts Contingency Plan at 310 CMR 40.0006 as "any structure, well, pit, pond, lagoon, impoundment, ditch, landfill or other place or area, excluding ambient air or surface water, where uncontrolled oil and/or hazardous material has come to be located as a result of any spilling, leaking, pouring, abandoning, emitting, emptying, discharging, injecting, escaping, leaching, dumping, discarding or otherwise disposing of such oil and/or hazardous material.

- Off-site soil reuse of soil as landfill daily cover. Approximately 15,678 tons of Remediation Waste were excavated and transported to Greenwood Street Landfill in Worcester, MA; Cottage Street Landfill in Springfield, MA; and RCI Fitchburg in Westminster, MA for reuse as daily cover.

- Off-site soil landfill disposal. Approximately 1,416 tons of Remediation Waste were excavated and transported to TREE Landfill in Rochester, NH for thermal processing and disposal.

Contaminated soils transported off-site were tracked using Bills-of-Lading. Perimeter dust monitoring and a dust control plan were implemented to mitigate neighborhood exposure to airborne contaminated soils.

Class A-2 Response Action Outcome (RAO) Statements were submitted to DEP in November 2006 concluding that RAM objectives for the Site have been met and that a Permanent Solution has been achieved. The Site contamination has been effectively remediated and no restrictions on future use of the Site are necessary. A condition of "No Significant Risk" of harm to human health, public welfare, safety, or the environment exists at the Site. Copies of relevant portions of the RAOs are provided as Attachment B.

Premium Cost to Redevelop the Brownfield

To construct the 10 Akron Street building, approximately 36,049 cy (64,888 tons) of soil need to be excavated and removed from the Site. If all of the excavated soil were "clean" the estimated cost for soil disposal (assuming an average soil disposal unit cost of $12/ton) would have been about $778,656.

However, approximately 12,795 cy (23,030 tons) of excavated soil were contaminated (soil having concentrations greater than applicable Reportable Concentrations), as discussed above. Therefore, the project incurred an additional cost of about $368,480 to dispose of the contaminated soils (assuming an average unit cost of $28/ton, which is a premium cost of $16/ton), thereby remediating the Site.

Redevelopment of the contaminated Site also incurred about $75,000 in Licensed Site Professional and soil management services required by the MCP.

Closure

Based on the information provided above, it is our opinion that the 10 Akron Street redevelopment project meets the intent of the LEED Brownfield Redevelopment Credit (SS Credit 3). If you have any questions or require additional information, please do not hesitate to call.

Sincerely yours,

HALEY & ALDRICH, INC.

Katherine E. Leblanc, PE, LEED AP
Senior Engineer

Deborah H. Gevalt, P.G., LSP
Senior Vice President

Attachments:
Attachment A: Copy of Portions of RAM Plan dated November 2005
Attachment B: Copy of Portions of Response Action Outcome (RAO) Statements dated November 2006

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Attachment A:

Copy of Portions of RAM Plan
Dated November 2005

Haley & Aldrich, Inc.
465 Medford St.
Suite 2200
Boston, MA 02129-1400

Tel: 617.886.7400
Fax: 617.886.7600
HaleyAldrich.com

HALEY & ALDRICH

9 November 2005
File No. 12333-120/130/140

Massachusetts Department of Environmental Protection
Northeast Regional Office
One Winter Street
Boston, Massachusetts 02108

Attention: Bureau of Waste Site Cleanup

Subject: Construction-Related Release Abatement Measure (RAM) Plan
Proposed Graduate Student Housing
10 Akron Street and 880 Memorial Drive
Cambridge, Massachusetts

Ladies and Gentlemen:

On behalf of our client, President and Fellows of Harvard College c/o Harvard Real Estate Services ("Harvard"), Haley & Aldrich, Inc. is pleased to submit this Release Abatement Measure (RAM) Plan prepared in accordance with 310 CMR 40.0444 and DEP Construction Policy # WSC-00-425 for the above referenced construction. The "Site" addressed by this RAM consists of two adjacent Disposal Sites as defined in Section 1.1 of this report. This RAM Plan presents procedures to be followed for management of excavated urban fill and groundwater during construction of proposed Site improvements.

A soil precharacterization program consisting of the advancement of test borings and the collection and chemical analysis of soil samples was performed at the Site in July and August 2005 in preparation for Site development. The results of the precharacterization program indicate the presence of Semi-Volatile Organic Carbons (SVOC), total petroleum hydrocarbons (TPH), chlordane, and metals in samples collected from urban fill material at the Site at concentrations exceeding the applicable RCS-1 Reportable Concentrations. The exceedence of the RCS-1 standard constitutes a 120 day reporting condition under the Massachusetts Contingency Plan (MCP). The detected chemical constituents were typically considered to be the result of the heterogeneous nature of urban fill (which is ubiquitous and consistently present throughout Cambridge) and historical activities for certain compounds.

Two BWSC-103 Release Notification Forms (RNF) are being submitted with this RAM Plan for which copies are provided in Appendix A. The first RNF is submitted for the northeast and northwest portions of the Site (10 Akron Street, future garage and residence hall area). The second RNF is submitted for the southwest portion of the Site (880 Memorial Drive, future City of Cambridge open space). The second RNF is being submitted so that regulatory compliance can be tracked separately for this portion of the Site, which Harvard University is granting a surface easement deed to the City for use as public open space.
The Release Abatement Measure (RAM) Transmittal Forms (BWSC-106) are enclosed with this RAM Plan and copies are provided in Appendix B. In accordance with 310 CMR 40.0444(2), the RAM Plan fee of $800.00 for each Disposal Site, payable to "The

Commonwealth of Massachusetts", and a copy of the first page of the RAM transmittal form (BWSC-106), have been mailed to the DEP Lock Box at P.O. Box 4062 Boston, Massachusetts 02211-4062 on 9 November 2005. Copies of the checks are provided in Appendix B.

As this RAM Plan proposes the off-site disposition of over 1,500 cubic yards (cy) of urban fill, the responsible party undertaking this response action is required to provide a Certification of Financial Assurance, in accordance with 310 CMR 40.0442(4). A copy of this certification is provided in Appendix B.

Public notice of proposed RAM implementation was provided to both the City of Cambridge Board of Health and the City of Cambridge City Manager's office in advance of the submittal of this RAM Plan to satisfy the seven day notification requirement under 310 CMR 40.1403(3)(d). Copies of these notices are included in Appendix B.

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

Sincerely yours,
HALEY & ALDRICH, INC.

for Tulin H. Fuselier
Staff Engineer

Katherine L. Leblanc, P.E.
Senior Engineer

Deborah H. Gevalt, P.G., LSP
Senior Vice President

Attachments:

c: Harvard Real Estate Services; Attn: Steven Nason
Harvard Real Estate Services; Attn: Michael Cahill
Harvard Environmental Health and Safety; Attn: Kelly McQueeney
Bowditch & Dewey, LLP; Attn: Kathleen Freeman, Esq.
Spaulding & Slye; Attn: John Sullivan
Turner Construction; Attn: Jack Murphy

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1. INTRODUCTION

1.1 Site Conditions

The subject Site is located at 10 Akron Street and 880 Memorial Drive in Cambridge, Massachusetts. The project locus is shown on Figure 1. Hingham Street bisects the Site in an east-west direction (See Figure 2). The northern portion of the Site (10 Akron Street), the parking garage and residence hall construction area, is bound by Memorial Drive to the west, Akron Street to the north, Banks Street to the east, and Hingham Street to the south. The southern portion of the Site (880 Memorial Drive), which Harvard University is granting a surface easement deed to the City for use as public open space, is a corner lot at the northeast intersection of Memorial Drive and Western Avenue. This portion of the Site is bound by Hingham Street to the north, Memorial Drive to the west, Western Avenue to the south, and a Massachusetts Water Resources Authority (MWRA) sewer line easement to the east.

The Site consists of approximately 75,000 square feet (sf). It is currently fenced and occupied by paved parking lots, several greenhouses, sheds, and planting beds, and other landscaped elements. Existing Site grades are relatively flat, ranging between approximately elevation (El.) 22 and El. 24 Cambridge City Base (CCB). Groundwater at the Site ranges from approximately 6 to 6.5 ft below ground surface (bgs), corresponding to approximately El. 17 to El. 16.5 CCB. The Site and the proposed building footprints are shown on Figure 2.

An existing MWRA sewer line crosses the Site in a north-south direction. This sewer is reported to be 41 in. wide by 46 in. tall with an invert approximately El. 5 (about 18 ft below existing grade). The easement for this sewer line is 20 ft wide, however the location of the sewer line within the easement limits is not known. A utility tunnel containing steam lines and other utilities is located under the Memorial Drive sidewalk immediately west of the Site. The sewer and utility tunnel will be maintained during and following construction.

1.2 Historical Site Usage

Sanborn fire insurance maps dated 1888, 1900, 1934, 1950, 1986, 1990, 1992 and 1995 were reviewed to develop the Site history. The Site was vacant and the Charles River abutted the Site to the west in 1888 and 1900. Between 1900 and 1934, Harvard University acquired the northern portion of the property (north of Hingham Street) and constructed a book bindery on the Site. Additionally, the marsh along the Charles River was filled to the current location of Memorial Drive to the west of the Site. Between 1934 and 1950 a Veterans Apartment building was constructed on part of the southern portion of the Site. The remaining portion was utilized as a nursery (Treeland) with a greenhouse and storage building.

By 1986, the Veterans Apartments had been demolished and the entire southern portion of the Site was occupied by the Treeland nursery, which consisted of a greenhouse, storage buildings, display shelter and parking lot. The book bindery on the northern portion had been demolished and remained vacant.

Between 1986 and 1995 the Site remained relatively unchanged, except the northern portion of the Site was also utilized by Treeland as a nursery storage area. From 1995 to 2005, the Site was utilized by Mahoney's as a nursery/greenhouse retail operation. The Sanborn fire insurance maps are provided in Appendix C.

1.3 Previous Regulatory Compliance

Response actions were conducted at the southern portion of the Site (880 Memorial Drive) under an Immediate Response Action (IRA) Plan in conjunction with the removal of a 500-gallon capacity No. 2 fuel oil underground storage tank (UST) in 1995. The IRA for the UST removal consisted of the excavation of up to 50 cubic yards of potentially impacted soil under Release Tracking Number 3-12440.

DEP issued Harvard University Utilities Group a Notice of Noncompliance on 22 February 1996 for failing to submit an IRA Plan within 60 days of the release (3 May 1995). An IRA Completion Report and Statement was submitted to the DEP on 18 March 1996. A Tier Classification Submittal, dated 10 May 1996 and relevant supporting information for the elevated total petroleum hydrocarbons (TPH) levels detected in soils at the Site was also submitted to the DEP. Based on review of available data, the Site was classified as a Tier II site. A Phase II Comprehensive Site Assessment and Class A-2 Response Action Outcome (RAO) Statement relating to the UST removal was submitted to the DEP on 3 May 1998.

1.4 Proposed Construction

The proposed development at the Site will consist of demolishing the existing structures on the Site in their entirety and construction of the following:

- Northwest Parcel: A 7-story residence hall building (with a footprint area of approximately 16,300 sf) will be constructed over a new 2-level below-grade parking garage. The garage will extend from Akron Street, under Hingham Street and approximately half way into the southwest portion of the Site. The lowest level floor slab is planned at approximately El. -4'-4" with a locally deeper area (FFE -9'-4") at the north end of the garage.

- Northeast Parcel: A 3- to 7-story residence hall building (with a footprint area of approximately 8,600 sf) will be constructed. This building will have a one-level basement and will connect to the 7-story building in the northwest portion of the Site through two above grade archways which will span over the MWRA easement. The lowest level floor slab is planned to vary from El. 12'-4" to El. 16'-4" elsewhere.

- Southwest Parcel: As described above, the proposed parking garage will extend to the approximate midpoint of the City of Cambridge open space parcel. Upon completion of the parking garage, the site will be graded above the parking garage roof, and Harvard will grant a surface easement deed to the City of Cambridge. The City plans to develop this parcel for use as public open space.

It is estimated that up to 60,000 cy of soil (including approximately 22,500 cy of remediation waste) will be excavated during the proposed construction. Excavation work will include removal of asphalt, foundations, abandoned utilities, urban fill and natural soils. During construction, urban fill and natural soils will be excavated, segregated, and removed from the Site for off-site reuse, treatment, recycling, and/or disposal.

Since the excavations will extend below the groundwater, temporary dewatering will be required to control groundwater, seepage, precipitation, surface water runoff, and construction generated water to enable construction in-the-dry. Dewatering is planned to be conducted by pumping from open sumps and possibly, shallow wells within the excavation. A NPDES General Permit for Temporary Construction Dewatering has been obtained from EPA (permit no. MAG070231). In accordance

with the permit, effluent will be discharged into a catch basin located near the intersection of Hingham Street and Memorial Drive.

Construction activities, including the proposed soil management measures described herein, are planned to begin in November 2005. It is estimated that the Site improvements will take approximately 24 months to complete. This RAM Plan presents procedures to be followed for management of remediation waste during construction.

1.5 Persons Conducting the RAM

The RAM will be conducted by the property owner, President and Fellows of Harvard College c/o Harvard Real Estate Services.

President and Fellows of Harvard College
c/o Harvard Real Estate Services
1350 Massachusetts Avenue, Room 1033
Cambridge, Massachusetts 02138
Contact: Mr. Steven Nason, Senior Real Estate Development Manager
Tel. (617) 384-8921

The **Licensed Site Professional** (LSP) assisting in the completion of the RAM is:

Deborah H. Gevalt, P.G., LSP
Senior Vice President
LSP#: 9290
Haley & Aldrich, Inc.
465 Medford Street, Suite 2200
Boston, Massachusetts 02129-1400
Telephone Number: (617) 886-7333

1.6 Precharacterization Program

The soil precharacterization program included advancement of test borings, soil sample collection, and laboratory analysis of the encountered material. The purpose of the precharacterization program was to assess the general chemical characteristics of the on-site soils and to initially classify materials to be excavated for on-site reuse or off-site disposal, reuse, recycling, and treatment. The combined precharacterization programs divided the proposed building area into grids. The spacing and testing intervals generally constituted a frequency of one sample per 300 to 500 cubic yards for urban fill, and one sample per 1000 cubic yards for natural soils. The results of the precharacterization program are presented in a separate report entitled “Report on Soil Precharacterization Data, Proposed Graduate Student Housing, 888 Memorial Drive, Cambridge, Massachusetts” dated 14 October 2005. The address of 888 Memorial Drive has been recently retired and changed to 10 Akron Street.

Haley & Aldrich conducted a subsurface exploration program at the Site between 25 July 2005 and 10 August 2005. The subsurface exploration program consisted of advancing a total of 31 test borings, 18 on the northern portion and 13 on the southern portion of the Site. One observation well was installed in completed test boring HA-GA1 and designated as HA-GA1(OW). The well screen spans the interface of the urban fill layer and natural deposits. Test borings were drilled by New Hampshire Boring, Inc. of Derry, New Hampshire, and monitored in the field by Haley & Aldrich, Inc. A total of 83 soil samples were collected from urban fill and organics, and naturally deposited marine clay layers during the precharacterization program for chemical analyses. The number of samples in each layer is shown below:

Area	Number of Samples		
	Total	Urban Fill/ Organics	Marine Clay
10 Akron Street	54	35	19
880 Memorial Drive	29	23	6
Total	**83**	**58**	**25**

Soil samples were submitted to Alpha Analytical Laboratories (Alpha) of Westborough, Massachusetts for chemical analysis of one or more of the following parameters: Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), Total Petroleum Hydrocarbons (TPH), Extractable Petroleum Hydrocarbons (EPH), metals, Polychlorinated Biphenyls (PCBs), chlorinated herbicides, organo chloride pesticides, leaching metals (Toxicity Characteristic Leaching Procedure, TCLP), and waste characteristics (reactivity, corrosivity, and ignitability). A summary of soil quality data associated with the garage and residence hall construction (northern portion) and City of Cambridge open space (southern portion) are provided in Tables I and II, respectively.

In addition, a groundwater sample was collected from observation well HA-GA1(OW) on 23 August 2005, using low flow sampling techniques, in support of a National Pollutant Discharge Elimination System (NPDES) temporary construction dewatering permit. The groundwater sample was submitted to Alpha for chemical analysis of VOCs, SVOCs, PCBs, organo chloride pesticides, hydrocarbons, dissolved metals, and corrosivity (pH). A summary of groundwater quality data is provided in Table III.

Key findings of the subsurface exploration programs are as follows:

- Generalized subsurface conditions based on test boring data, listed in increasing depth below ground surface, are summarized in the following table:

Soil Unit	Encountered Thickness (ft)	Depth to Top of Stratum (ft)
Urban Fill	2 to 10	0
Organic Deposits	0.5 to 5	5 to 8
Alluvial Deposits	0.5 to 7	8 to 10
Marine Deposits	3 to 67.5	2.5 to 16

- Groundwater at the Site was encountered at approximately 6 to 6.5 ft below ground surface (bgs), corresponding to approximately El. 17 to El. 16.5 CCB.

- Review of precharacterization data for the northern portion of the Site indicates that concentrations of SVOCs, TPH, and metals (including lead, mercury, antimony and arsenic) detected in samples collected from urban fill material exceed the applicable MCP RCS-1 Reportable Concentrations. Soil quality data was compared to RCS-1 Reportable Concentrations as residences are located within 500 ft of the Site.

- Review of precharacterization data for the southern portion of the Site indicates that concentrations of SVOCs, TPH, metals (including lead, mercury, antimony and beryllium), and chlordane detected in samples collected from urban fill material exceed the applicable MCP RCS-1 Reportable Concentrations.

- With the exception of barium, which was detected at 0.04 mg/L, compounds were not detected above laboratory detection limits in the groundwater sample. The concentration of barium was below the applicable RCGW-2 Reportable Concentrations. Groundwater quality data was compared to RCGW-2 Reportable Concentrations as the Site is not located within a Current Drinking Water Source Area or a Potential Drinking Water Source Area.

Since groundwater does not contain concentrations above reportable limits, the RAM activities for this Site will include only those associated with soil management.

Locations of the test borings and observation well are shown on Figure 2. Test boring logs and the observation well installation report are provided in Appendix D. A compact disc (CD) containing copies of the laboratory data reports for soil and groundwater samples is included as Appendix E.

1.7 Description of Release

The results of the soil chemical analytical data are summarized in Table I for the northern portion of the Site (10 Akron Street, garage and residence hall) and Table II for the southern portion of the Site (880 Memorial Drive, City of Cambridge open space). In summary, concentrations of SVOCs, TPH, chlordane, and metals (including antimony, arsenic, beryllium, lead and mercury) in urban fill samples exceeded the RCS-1 Reportable Concentrations. Chemical analysis of the groundwater indicated concentrations of compounds below laboratory detection limits or RCGW-2 reportable concentrations.

The detected Site compounds as a whole are attributable to the urban fill, which is ubiquitous and consistently present throughout Cambridge. The urban fill observed at the Site generally consists of a heterogeneous mixture of sand with varying amounts of gravel, silt, clay, organics, brick, metals, asphalt, concrete, glass, wood chips, coal, cinders, ash, and slag.

Chlordane, which was detected in the southern portion of the Site, is likely attributable to the historic use of the Site as a nursery. The pesticide was detected above RCS-1 concentrations in one sample only (HA-P6). Arsenic, lead, mercury, and antimony may also be attributable to historic pesticides applications.

1.8 Surrounding Receptors

The Site is located in an urban setting adjacent to the Harvard University campus. Properties in the surrounding area are residential, academic and industrial. Current human receptors include students, faculty, staff, and visitors to surrounding campus dormitory and residential buildings. For the near future foreseeable conditions, human receptors will include on-site construction workers, utility and landscape workers, trespassers (ages 11 to 18 years), nearby adult and child residents, and pedestrian traffic at the perimeter of the Site. During development, the construction Site will be bordered by fencing, which will be locked during non-working hours, and will thus have restricted access.

Potential impacts of the Site development and foundation construction activities to human receptors are direct contact with soil, ingestion of soil, and exposure to fugitive dust. During construction, the Contractor will be required to implement and maintain a Perimeter Dust Monitoring (PDM) Program. The PDM will consist at a minimum of three monitoring stations that are in-place and in continuous operation during excavation and handling of soils that exceed the criteria for reuse at a lined landfill or higher.

2. RELEASE ABATMENT MEASURE PLAN

2.1 RAM Objectives and RAM Plan

The objectives and plan of RAM activities are listed below.

1. Conduct additional assessment activities to further characterize soil quality as needed prior to excavation and off-site transport, or to provide confirmatory data for regulatory compliance.

2. Excavate up to 20,200 cy (36,360 tons) of urban fill material classified as Remediation Waste (> RCS-1, as defined by the MCP) during construction associated with the underground garage, residence hall basement and associated on-site utilities, and selective excavation to remove > RCS-1 remediation waste soils in the City of Cambridge open space area.

3. Identify, manage, and facilitate off-site reuse/disposal/recycling/treatment of Remediation Waste.

4. Stockpile soil onsite on polyethylene and cover with polyethylene to protect against water or wind erosion. Note that stockpiling at the Site will be necessary only for soils that require further characterization, on-site treatment, or have been characterized below RCS-1 Reportable Concentrations and are suitable for reuse onsite. The majority of the soils to be excavated will be directly loaded onto trucks for transportation to appropriate receiving facilities.

5. TCLP treatment: Sampling results show no exceedence of the RCRA hazardous waste criteria for leachable metals. Therefore treatment on site of soils containing metals is not expected. However, onsite TCLP treatment of up to 400 cy is included as a contingent RAM activity in the event that such soils are identified at the Site during additional assessment activities. Such treatment will include stabilization by chemical reagents to reduce the leachable lead levels to below levels considered a RCRA hazardous waste. Once treatment, f any, is complete, the soil will be resampled and reclassified for off-site disposal.

6. Obtain confirmatory samples at the bottom of the excavation for chemical analysis and post-construction risk characterization.

2.2 Remediation Waste Management

Results of the precharacterization program have been made available to the Contractor in the form of a Precharacterization Report. The Precharacterization Report includes analytical data from the testing program and an initial classification of the material for disposal purposes. RAM activities will involve management of urban fill material (i.e. Remediation Waste) prior to off-site removal for reuse/disposal/recycling/treatment. Excavated soils, including remediation waste, will be managed in accordance with 310 CMR 40.0030.

Soils that appear inconsistent with the precharacterization data may be temporarily stockpiled onsite and tested by the Contractor. Contaminated soils that are temporarily stockpiled onsite will be securely covered with polyethylene sheeting. Excavated materials with less than RCS-1 Reportable Concentrations are suitable for reuse onsite and may also be temporarily stored in stockpiles onsite.

2.3 Environmental Monitoring Plan

Materials will be monitored during excavation for visual and olfactory evidence of contamination (such as observed discoloration, texture and odor). Additional testing for off-site disposal, recycling or treatment as required by the specific facility or for reclassification will be the responsibility of the Contractor. The types and frequency of testing will be determined by a Licensed Site Professional (LSP) retained by the Contractor and as required by the facility.

Please also refer to Section 3.1 of this report, which identifies measures the contractor will undertake during RAM activities.

2.4 RAM Schedule

RAM activities are planned to begin in November 2005. RAM activities will be considered complete when the objectives of the RAM Plan have been met, and when active and ongoing remedial actions related to the RAM have been terminated (310 CMR 40.0446(2)). RAM activities are anticipated to be completed in about 24 months.

RAM activities will be documented and presented in RAM Status Reports and a RAM Completion Report, which will be submitted in accordance with the schedule indicated in 310 CMR 40.0440. An RAO Statement will be submitted after completion of the work.

2.5 Federal, State and Local Permits and Requirements

Based on available information no federal permits are expected to be needed to implement RAM activities. A Chapter 91 floodplain local permit has been obtained by the project to conduct construction activities within the Charles River floodplain. An 8(m) permit is being pursued by the project to conduct construction activities within the 20ft MWRA easement.

Currently no contamination concentrations detected in the groundwater sample exceed the applicable RCGW-2 criteria, and thus construction dewatering effluent does not constitute Remediation Wastewater. A NPDES General Permit for Temporary Construction Dewatering has been obtained from EPA (permit no. MAG070231). In accordance with the permit, effluent will be discharged into a catch basin located near the intersection of Hingham Street and Memorial Drive. The quantity and quality of pumped groundwater will be monitored in accordance with the criteria established in the permits.

2.6 Financial Assurance

The proposed RAM involves excavation of more than 1,500 cubic yards of existing onsite urban fill materials with oil and hazardous material concentrations in excess of applicable RCS-1 Reportable Concentrations. Therefore, in accordance with Section 40.0442(4) of the MCP, acknowledgment of the financial impacts and demonstration of sufficient financial reserves is required. President and Fellows of Harvard College c/o Harvard Real Estate Services have been informed of the costs to complete the work described in the RAM. Monies to adequately cover the costs associated with the implementation of the RAM are available. A statement providing the certification of knowledge and financial resources executed on behalf of President and Fellows of Harvard College c/o Harvard Real Estate Services is included in Appendix B.

3. OTHER ACTIVITIES (NON-RAM)

3.1 Contractor's Activities

Specific measures (which are not considered RAM activities) to be taken by the Owner through the Contractor in accordance with the project specifications include the following:

- Monitor groundwater pumped for construction dewatering and, if dewatering effluent exceeds NPDES permit discharge criteria during construction dewatering, undertake treatment of groundwater prior to discharge.

- Materials removed from the Site shall be loaded within the construction Site limits. All trucks leaving the Site shall be covered and cleaned of spilled debris that might fall from the trucks during transport.

- Soil material shall be removed from truck tires within a designated area prior to leaving the Site. The Contractor shall clean any Site debris from Harvard University driveways and local streets on a routine basis.

- During construction, the Contractor will be required to employ dust control measures to minimize the creation of airborne dust. At a minimum, standard dust control techniques such as watering down the Site or spreading hygroscopic salts will be required where heavy equipment will be traveling.

  During construction, the Contractor will be required to implement and maintain a Perimeter Dust Monitoring (PDM) Program. The PDM will consist at a minimum of three monitoring stations that are in-place and in continuous operation during excavation and handling of soils that exceed the criteria for reuse at a lined landfill or higher.

- A perimeter chain-link fence is present around the construction Site that will remain during construction activities.

- Prior to the start of work, the Contractor will be given the Precharacterization Report and will be required to prepare a Health & Safety (H&S) Plan in accordance with all local, state and federal laws and regulations, including 310 CMR 40.0018 Health & Safety specifications. The Contractor will also be responsible for notifying workers involved with on-going construction activities of the project-specific H&S Plan and protocols for handling potentially impacted soils (e.g., criteria for donning appropriate personal protection equipment).

- An "Excavated Soil Material Management Plan" (ESMMP) will be part of the contract documents and will contain requirements for soil classification, handling, storage, and off-site disposal/treatment of excavated material.

3.2 Construction Dewatering

Dewatering of groundwater is anticipated during excavation for building construction. Harvard has applied for a NPDES General Permit for Construction Dewatering to discharge construction dewatering effluent to the combined sewers in the area. As part of the permit application process, Haley & Aldrich provided chemical testing results for a groundwater sample obtained

from monitoring well HA-GA1(OW). As previously discussed, the groundwater sample was analyzed for VOCs, SVOCs, PCBs, pesticides, hydrocarbons, dissolved metals (antimony, arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver and zinc), and corrosivity (pH). Chemical analysis of the groundwater sample indicated concentrations of compounds below laboratory detection limits and/or RCGW-2 Reportable Concentrations. Therefore, construction dewatering effluent does not fall within the MCP definitions of "Contaminated Groundwater", "Contaminated Media", "Remedial Wastewater", and/or "Remediation Waste." Accordingly, the dewatering activity will not be considered a RAM activity.

The quantity and quality of pumped groundwater will be monitored in accordance with the criteria established in the permits. In the event that NPDES criteria exceedances are encountered, pumped groundwater may require treatment prior to discharge. However, due to the chemical quality of the water tested, it is not anticipated that groundwater will be classified as Remediation Wastewater, as defined by the MCP.

4. DEP CONSTRUCTION POLICY #WSC-00-425

Requirements for construction of buildings in “contaminated areas” are specified in DEP Policy #WSC-00-425, dated January 2000. These potentially applicable requirements include the following:

- A focused risk characterization regarding the area within and adjacent to the footprint of the building and associated subsurface structures (i.e. utilities) must be conducted to adequately characterize the nature of risks to construction workers, surrounding populations, and future occupants of the building to ensure that such risks are within the limits permitted by the MCP.

- A focused feasibility study regarding the area within and adjacent to the footprint of the proposed building must be conducted to determine if it is feasible to reduce soil contaminant levels to concentrations that achieve or approach background conditions.

4.1 Summary of Focused Risk Characterization

The Focused Risk Characterization is attached as Appendix G of this document and is summarized below.

Results of the Focused Risk Characterization indicate that for planned construction activities, a condition of “No Significant Risk” of harm to human health is considered to exist for the construction worker, based on current urban fill soil quality data. Based on qualitative comparison to risk estimates for the construction worker, a condition of “No Significant Risk” of harm to human health is also considered to exist for other potential human receptors who are considered to have less intense direct-contact soil exposures than construction workers, such as utility workers, landscapers, students, faculty, staff, and visitors to surrounding campus dormitory and residential buildings, trespassers (ages 11 to 18 years), nearby adult and child residents, and pedestrian traffic at the perimeter of the Site.

Results of the Focused Risk Characterization further indicate that, for planned construction activities, the trespasser (age 11 to 18 years) exposure scenario presents a condition of "No Significant Risk" of harm to human health based on current urban fill soil quality data.

Furthermore, for the adult and child nearby resident who may be exposed to fugitive dust as a result of excavation activities, the results of this Focused Risk Characterization indicate a condition of “No Significant Risk” of harm to health. Based on qualitative comparison to risk estimates for the child and adult resident’s inhalation of fugitive dust, a condition of "No Significant Risk" of harm to human health is considered to exist for other potential human receptors who are assumed to have potential inhalation exposures such as pedestrians at the Site perimeter.

4.2 Feasibility of Achieving or Approaching Background Evaluation

Feasibility of restoration to background in accordance with 310 CMR 40.0860 is evaluated below based on methodologies presented in DEP Policy #WSC-04-160 "Conducting Feasibility Evaluations under the MCP," dated July 16, 2004.

4.2.1 Soils

It is anticipated that at least 13,400 cy of urban fill will be excavated and removed from the Site to construct the residence hall, parking garage, and associated on-site utilities,.

Up to 20,200 cy of urban fill containing concentrations of contaminants greater than RCS-1 are present at the Site, of which at least 13,800 cy of urban fill will be excavated and removed from the Site.

The cost to dispose of the additional 6,400 cy would be an increase in cost of greater than 45%. Furthermore, excavation immediately adjacent to the foundation of existing residential buildings and public streets would compromise the integrity of the buildings and streets without significant additional temporary excavation support. These additional costs are well in excess of the 20 percent benchmark defining feasibility. Therefore, the benefits of additional remedial action required to approach or achieve background do not justify the costs or risks associated with those actions, and it is considered infeasible to achieve or approach background at the Disposal Site.

4.2.2 Groundwater

Compounds were detected in groundwater at concentrations below Reportable Concentrations. Furthermore, the concentration of each compound is below one-half the Method 1 GW-2 and GW-3 standards. Therefore, in accordance with the provision at Section 9.3.3.2 of DEP Policy #WSC-04-160, background is considered to have been approached.

A condition of "No Significant Risk" has been determined to exist at the Site without any groundwater remediation. It is considered infeasible to achieve background since the cost to remediate groundwater beyond "No Significant Risk" is greater than 20% of the cost to achieve "No Significant Risk", as outlined at Section 9.3.3.4 of DEP Policy #WSC-04-160.

5. LSP OPINION

Deborah H. Gevalt is the LSP for the project. The LSP seal and signature are provided on the attached RAM Plan Transmittal Form BWSC106, a copy of which is included in Appendix B.

This document contains material facts, data, and other information that support the LSP Opinion that, to the best of the LSP's knowledge, information and belief, 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 action 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.

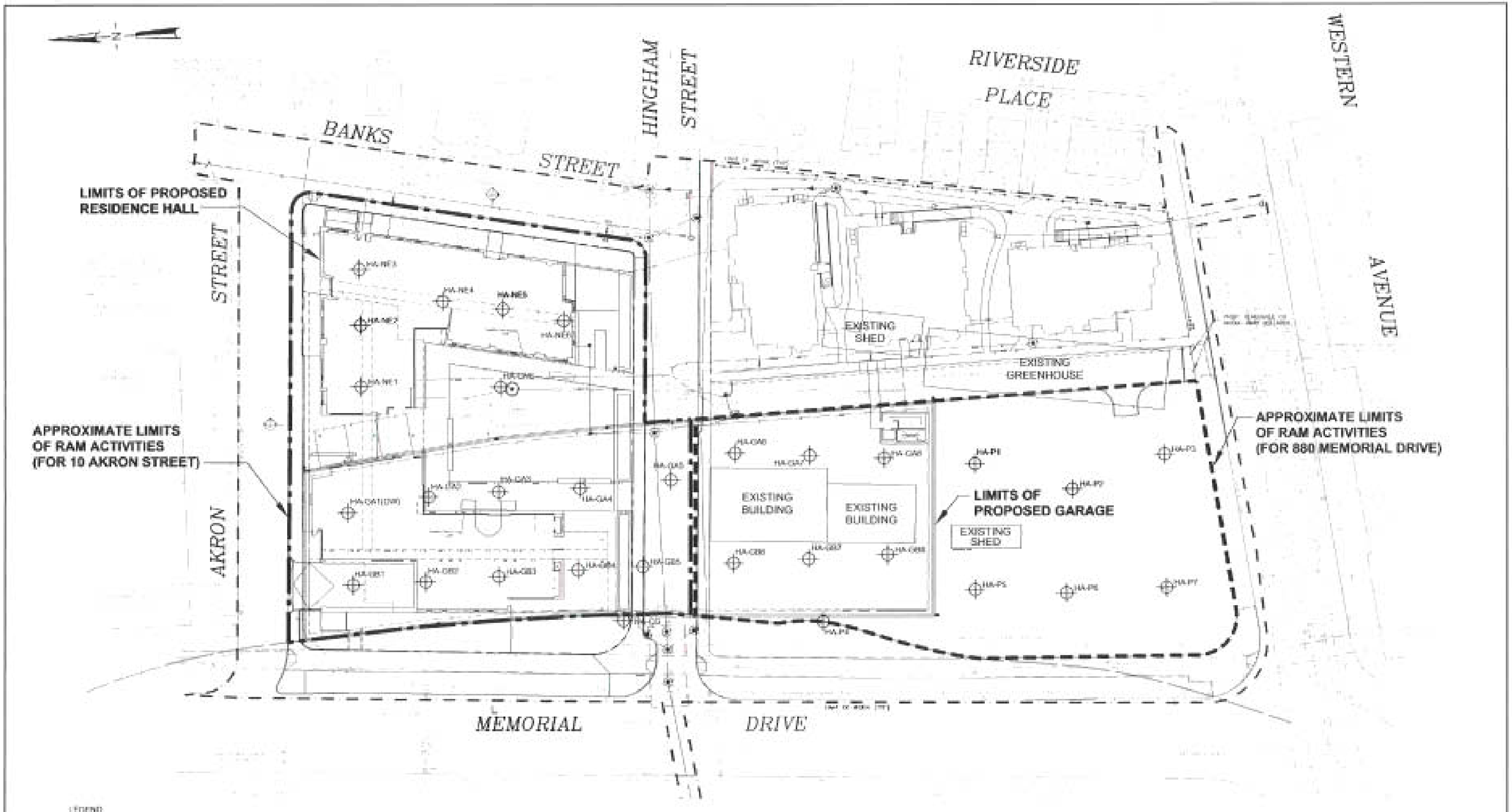
REFERENCES

1. Massachusetts Department of Environmental Protection, Bureau of Waste Site Cleanup, "The Massachusetts Contingency Plan; 310 CMR 40.0000," dated 30 July 1993, and updates.

2. Massachusetts Department of Environmental Protection, "Construction of Buildings in Contaminated Areas, Policy #WSC-00-425," dated January 2000.

3. Massachusetts Department of Environmental Protection, "Conducting Feasibility Evaluations Under the MCP, DEP Final Policy #WSC-04-160," dated 16 July 2004.

4. Massachusetts Department of Environmental Protection, "Technical Update: Background Levels of Polycyclic Aromatic Hydrocarbons and Metals in Soil" dated 23 May 2002.



LEGEND:

HA-GA1 DESIGNATION AND APPROXIMATE LOCATION OF PROPOSED HALEY & ALDRICH PRE-CHARACTERIZATION TEST BORING

(OW) INDICATES GROUNDWATER OBSERVATION WELL INSTALLED IN COMPLETED BORE HOLE

NOTES:

1. ELEVATIONS SHOWN ARE IN FEET AND REFERENCE CAMBRIDGE CITY BASE DATUM

2. LOCATIONS OF HA-SERIES TEST BORINGS WERE DETERMINED IN THE FIELD BY HALEY & ALDRICH, INC. PERSONNEL BY TAPING FROM EXISTING SITE FEATURES AND ARE CONSIDERED APPROXIMATE

3. BASE PLAN PREPARED FROM DRAWING ENTITLED "BUILDING PERMIT SET, SITE UTILITY PLAN, GRADUATE STUDENT HOUSING, 880 MEMORIAL DRIVE, CAMBRIDGE MA (01.30" PREPARED BY OKRENN INTERNATIONAL AFFILIATES, INC. DATED 25 JUNE 2008.

0 50 100
SCALE IN FEET

HALEY & ALDRICH

UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

PROPOSED GRADUATE STUDENT HOUSING
10 AKRON STREET/880 MEMORIAL DRIVE
CAMBRIDGE, MASSACHUSETTS

SUBSURFACE EXPLORATION LOCATION PLAN

SCALE: AS SHOWN

OCTOBER 2008

12333-100 B51

FIGURE 2

Attachment B:

Copy of Portions of Response Action Outcome (RAO) Statements
Dated November 2006

Haley & Aldrich, Inc.
465 Medford St.
Suite 2200
Boston, MA 02129-1400

Tel: 617.886.7400
Fax: 617.886.7600
HaleyAldrich.com

HALEY & ALDRICH

22 November 2006
File No. 12333-121

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

Attention: Bureau of Waste Site Cleanup

Subject: Release Abatement Measure (RAM) Completion Report (Part One)
and Class A-2 Response Action Outcome (RAO) Statement
Construction Site
10 Akron Street
Cambridge, Massachusetts
RTN 3-25416

Ladies and Gentlemen:

On behalf of our client, President and Fellows of Harvard College c/o Harvard Real Estate Services ("Harvard"), Haley & Aldrich, Inc. is pleased to submit this Release Abatement Measure (RAM) Completion Report (Part One) and Class A-2 Response Action Outcome (RAO) Statement prepared in accordance with the requirements contained in the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000, for the above referenced site (the "Site").

The RAM Plan for the Site provided procedures for management of excavated soil during construction of Site improvements at the Disposal Sites identified by RTNs 3-25416 and 3-25417. The second part of the RAM Completion Statement (for RTN 3-25417) is being submitted concurrently as a separate document.

The release notification for the Site was associated with the presence of semi-volatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH), and metals (including lead, mercury, antimony, arsenic, beryllium, and nickel) in urban fill soils at concentrations exceeding the applicable RCS-1 Reportable Concentrations. The detected chemical constituents were typically considered to be the result of historic site use and the heterogeneous nature of urban fill, which is ubiquitous and consistently present throughout Cambridge.

A signed original RAM Transmittal Form (BWSC-106) and RAO Statement Transmittal (BWSC-104) are being submitted separately to the Department of Environmental Protection (DEP) along with this document. Copies of the signed forms are included in Appendix A. In accordance with 310 CMR 40.0444(2), the RAO compliance fee of $1200, payable to "The Commonwealth of Massachusetts", and a copy of the first page of the RAO transmittal form (BWSC-106), have been mailed to the DEP Lock Box at P.O. Box 4062 Boston, Massachusetts 02211-4062 on 22 November 2006. A copy of the check is provided in Appendix B.

Public notice regarding the availability of the RAM Completion Report and RAO has been provided to both the City of Cambridge Board of Health and the City of Cambridge City Manager's office as required under 310 CMR 40.1403. Copies of these notices are included in Appendix B.

On 29 September 2006, Harvard received a public involvement petition from interested Cambridge residents. In response to this petition, a draft of this document was circulated for public comment on 27 October 2006 and comments were accepted through 16 November 2006 for the required 20-day comment period. One written letter of comments was received on 21 November 2006. A copy of the petition, public notice letter, the written comments, and responses to the written comments are provided in Appendix C.

The Bill of Lading Forms (BWSC-012A and -012C) are being submitted concurrently with this document. Copies of all BWSC-012A and -012C forms are included in Appendix D.

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

Sincerely yours,
HALEY & ALDRICH, INC.

P. Sandhya

For Tulin H. Fuselier
Staff Engineer

Katherine E. Leblanc, P.E.
Senior Engineer

Deborah H. Gevalt, P.G., LSP
Senior Vice President

Attachments:

c: Harvard Real Estate Services; Attn: Steven Nason
Allston Development Group; Attn: Ken Johnson
Harvard Environmental Health and Safety; Attn: Kelly McQueeney
Bowditch & Dewey, LLP; Attn: Kathleen Freeman, Esq.
Jones Lang LaSalle; Attn: Chris Packard

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EXECUTIVE SUMMARY

Release Abatement Measures (RAM) activities conducted during construction at the Site in the past year, consisted of soil management related to pre-trenching for the earth support wall installation construction, bulk excavation for the below grade space, and onsite in-situ treatment of soils to stabilize TCLP Lead. Prior to the start of construction a number of pre-characterization studies of the soil were completed.

Some earthwork activities remain to be completed, such as bulk excavation within natural soils, final grading, landscaping, and utility installation.

Haley & Aldrich provided on-site monitoring of temporary stockpiling (as needed) and documentation of off-site transportation of material until 5 October 2006, and part-time on-site monitoring thereafter. Excavation and removal of urban fill was completed on 22 September 2006.

The Site was evaluated according to Method 1 Risk Characterization requirements, 310 CMR 40.0970, using the promulgated Method 1 standards. A condition of "No Significant Risk" was determined to exist at the Site relative to human health, safety, public welfare and the environment for current and foreseeable future Site conditions and uses as well as unrestricted Site conditions and uses (i.e., use as a single-family residence). An AUL is *not* required to maintain a condition of "No Significant Risk".

This RAM Completion Report (Part One) and A Class A-2 RAO Statement conclude that the RAM objectives for the Site have been met . As indicated above, the completed Risk Characterization shows that a condition of “No Significant Risk” has been achieved at the site. A Class A-2 RAO has been determined to be appropriate for this site. The Class A-2 RAO indicates the following:

- a Permanent Solution has been achieved;
- a level of “No Significant Risk” exists at the site for current and unrestricted future site use;
- an Activity and Use Limitation (AUL) is <u>not</u> necessary to maintain a level of “No Significant Risk” at the site.

Massachusetts Contingency Plan (MCP) response actions have been completed for the Site, and filing of this document will mark the endpoint of the MCP process for RTN 3-25416.