



EA Engineering, Science, and Technology, Inc.

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2006 MAY 25 P 4: 12

25 May 2006

Mr. Joseph T. Martella, II, Senior Engineer
Rhode Island Department of Environmental Management
Office of Waste Management
Site Remediation Program
235 Promenade Street
Providence, Rhode Island 02908

RE: Response to RAWP Comments, Former Gorham Manufacturing Facility,
Parcel B, 333 Adelaide Avenue, Providence, Rhode Island
Case No. 2005-029
EA Project No. 61965.01

Dear Mr. Martella:

On behalf of the Providence Department of Public Property (City), EA Engineering, Science, and Technology, Inc. (EA) is providing the following response to the Department's RAWP Comments for the above-referenced site. To facilitate referencing during review of this document, the numbering scheme included in this letter corresponds with the numbering scheme used by RIDEM in their 23 May 2006 comment letter.

RESPONSE TO COMMENTS 1(a) – 1(e): On behalf of the City, EA completed the soil vapor survey at the site in accordance with verbal notification provided to RIDEM and written notice provided via hand-delivery to residences abutting the site. A copy of the notice distributed prior to the survey is provided in Attachment A. Specifically, a temporary 5-ft., 1-in. diameter steel sampling probe with a 1-ft. screened interval was installed via direct push technology in six representative areas within the proposed school building footprint. A site map with the approximate vapor probe and sampling locations (SV-7 through SV-12) is provided as Attachment B. The annulus surrounding the screened interval was filled with sand and included a layer of bentonite to minimize the possibility of short-circuiting during sample collection. The temporary sampling probe included a sampling port from which a grab sample via summa canister was collected. A sample could not be obtained from location SV-12 due to the fact that the summa canister provided by the laboratory was found to have lost its vacuum due to a valve leak prior to sample collection. The other five soil gas samples were submitted to a Rhode Island certified laboratory for analysis of methane and volatile organic compounds via Method TO-15.

The most likely explanation regarding the differences in the data between the October 2005 vapor sampling event and those completed in February and June 2005 is the fact that the October event occurred after site preparation activities during the Limited Remedial Action Work Plan (LRAWP) in August and September 2005. The LRAWP included various geotechnical preparation activities, including excavation, mechanical screening, and debris separation of all soils from within the proposed school building footprint to a depth of approximately 10 ft. below grade. Subsequently, soil was returned to the building footprint area and compacted with a vibratory roller in preparation of future building foundation construction. The compacting activities have most likely limited the ability for VOCs beneath the LRAWP area of disturbance to migrate into the October 2005 soil vapor sampling



area (4-5 ft below grade). The October 2005 data is believed to be representative of existing site conditions and appropriate to estimate venting system effluent emissions and to evaluate permit applicability at this time. However, the City recognizes the need to collect and analyze venting system effluent samples after the system is brought on-line to re-evaluate emissions and permit applicability (RAWP, page 20).

No other previously unreported site investigation activities have been completed at the site by the City.

RESPONSE TO COMMENTS 1(f) – 1(i): Agreed.

RESPONSE TO COMMENTS 2 - 5: Agreed.

RESPONSE TO COMMENT 6: Please refer to the commitment letter provided by the Providence Department of Public Property in Attachment C.

RESPONSE TO COMMENT 7: The City agrees with the Department's comment regarding VOCs and reiterates the revised VOC sampling program outlined in the comment letter. With respect to the Department's request that the City consider installing negative pressure monitors and/or a separate alarm system to insure that negative pressure beneath the slab is maintained and not allowed to fail and go unnoticed for extended periods of time, the RAWP already calls for installation of pressure sensors and notification of responsible personnel in the event that a significant reduction in airflow has occurred. The City will alternatively consider installation of an electric current transducer on each suction fan to ensure immediate recognition (through the indoor methane monitoring system) of system failure. The City believes that the RAWP and proposed system safety controls, combined with the frequency of data collection during the initial year of system operation and the revised VOC sampling program (see above), will provide a high level of protection to the occupants of the school and will facilitate prompt and effective responses to system operational problems when encountered, if any.

RESPONSE TO COMMENT 8: As requested, a "track changes" copy of the proposed Environmental Land Usage Restriction (ELUR) in hard copy format is provided as Attachment D, and a copy in electronic format has been submitted via email to the Department's Office of Legal Services and Office of Waste Management.

RESPONSE TO COMMENT 9: Section B.5 of the Soil Management Plan (SMP) for the site has been modified to include the Department's comments. The revised SMP is included with this letter as Exhibit B of the proposed ELUR in Attachment D.



The City trusts that this response to the Department's RAWP Comments is satisfactory, and respectfully requests formal approval of the RAWP in the form of an Order of Approval at the Department's earliest convenience. Thank you for your continued timely attention.

On behalf of the City, if you have any questions or require additional information, please do not hesitate to contact either of the undersigned at 401-736-3440.

Sincerely,

EA ENGINEERING, SCIENCE,
AND TECHNOLOGY, INC.

Peter M. Grivers, P.E., LSP
Project Manager

Timothy C. Regan, P.E., M.B.A.
Client Manager/Senior Engineer

PMG/tr

Attachments

cc: A. Sepe, Providence Department of Public Property
B. Wagner, Esq., RIDEM Legal Services
K. Owens, RIDEM Office of Waste Management
L. Hellested, RIDEM Office of Waste Management
T. Gray, RIDEM/AW&C
C. Walusiak, RIDEM Office of Waste Management
S. Rapport, City of Providence Law Department
J. Ryan, Partridge, Snow, & Hahn
J. Boehmert, Partridge, Snow, & Hahn
T. Deller, Providence Redevelopment Agency
J. Simmons, City of Providence
D. Heislein, MacTec
J. Hartley, GZA
S. Fischbach, RI Legal Services
Former Gorham Site, Parcel B – Knight Memorial Library Repository

Attachment A

**Copy of Public Notice Flyer Distributed
Prior to October 2005 Soil Vapor Sampling**

Notice

Please be advised that, on behalf of the City of Providence, EA Engineering, Science, and Technology, Inc. (EA) will collect soil gas samples at the former Gorham Manufacturing location – Parcel B on Wednesday October 3, 2005. The work is expected to begin between 7:30 and 8:00 AM and will be completed within approximately 2 hours.

This work is being conducted in accordance with verbal approval of the RI Department of Environmental Management.

The purpose of the work is to collect additional soil gas data to assist with design and permitting of a sub-slab venting system for a proposed City-owned school proposed for the property.

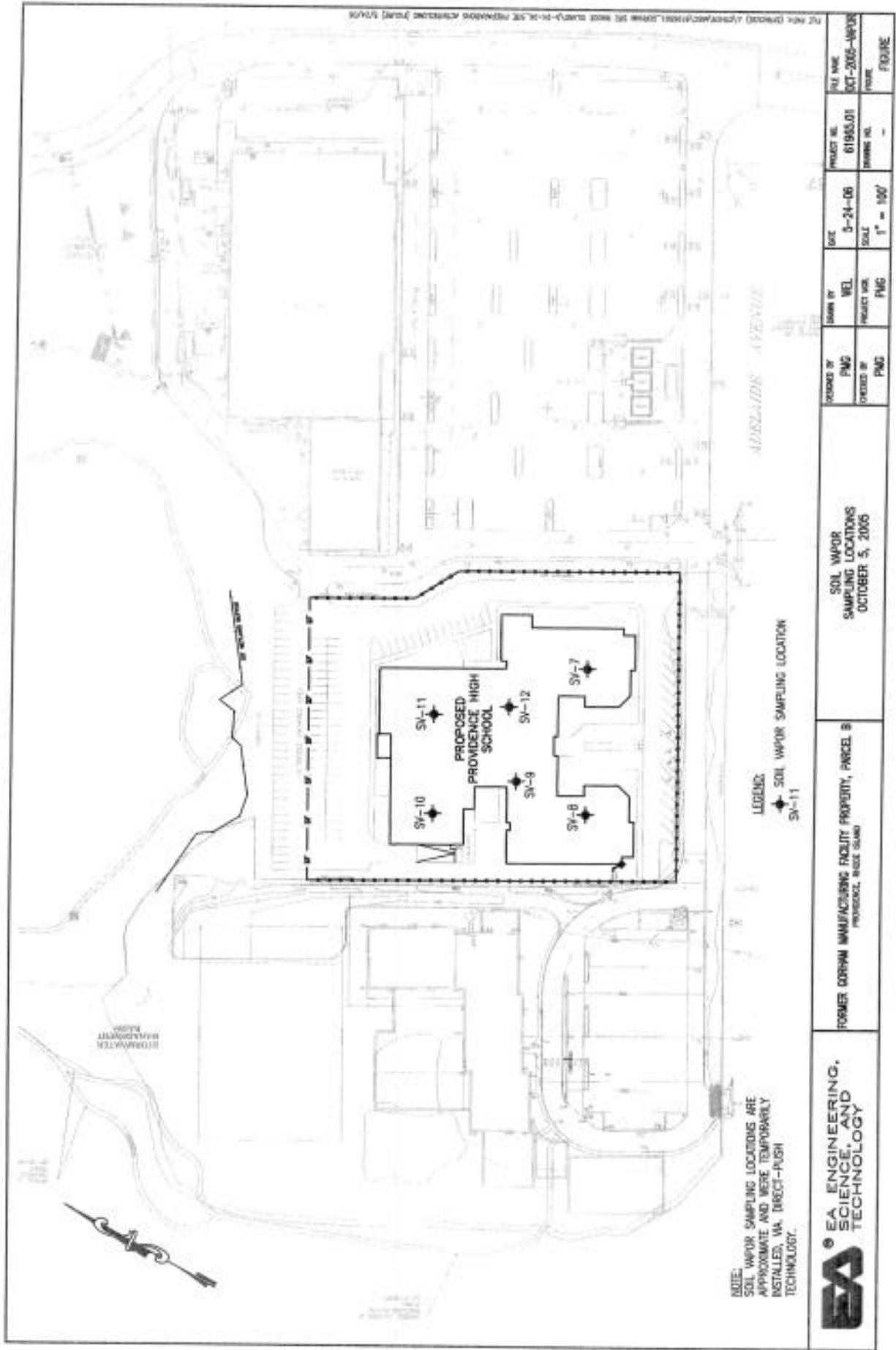
No heavy machinery (backhoes, bull dozers, dump trucks, etc.) will be utilized. A truck-mounted hydraulic machine will be used to install a temporary 1-inch diameter probe at six locations at the site. A soil gas sample will be collected from each probe and submitted to a laboratory for analysis of volatile organic compounds and methane. The temporary probes will be removed after sample collection.

There are no known or suspected health risks to nearby residents directly associated with performing this work.

Please contact RIDEM at (401) 222-2797 Ext. 7109 or EA at (401) 736-3440 Ext. 216 if you have any questions regarding this matter.

Attachment B

**Site Map with Approximate Soil Vapor
Sampling Locations – October 5, 2005**



PL 001 (Project) (Drawing) (Sheet) (Title) (Date) (Scale) (Drawing No.) (Figure No.)

Attachment C

Commitment Letter Regarding O&M Funding

ALAN R. SEPE
Acting Director



DAVID N. CICILLINE
Mayor

Department of Public Property
"Building Pride In Providence"

May 25, 2006

Mr. Joseph T. Martella, II, Senior Engineer
Rhode Island Department of Environmental Management
Office of Waste Management
Site Remediation Program
235 Promenade Street
Providence, Rhode Island 02908

RE: Response to RAWP Comment No. 6, Former Gorham Manufacturing Facility,
Parcel B, 333 Adelaide Avenue, Providence, Rhode Island
Case No. 2005-029

Dear Mr. Martella:

On behalf of the Providence Department of Public Property, I submit this correspondence in response to Comment No. 6 in your Remedial Action Work Plan Comment Letter dated 23 May 2006.

In my role as the Director of Public Property for the City of Providence, and as indicated by my signature below, the Providence Department of Public Property and/or the Providence School Dept. will assume full responsibility for funding all operation, monitoring, and maintenance (OM&M) costs associated with the remedial action at the referenced location for a minimum of 20 years.

I trust that this letter fulfills your request for a written acknowledgement regarding the City's commitment to fund the OM&M at the referenced site. Please call me at (401) 421-7740 ext 300 if you have any questions.

Sincerely,

A handwritten signature in cursive script, appearing to read "A. Sepe".

Alan R. Sepe
Acting Director
Department of Public Property

Attachment D

**ELUR (Track Changes Version) with
Revised SMP (Exhibit B)**

DRAFT ENVIRONMENTAL LAND USAGE RESTRICTION

This Declaration of Environmental Land Usage Restriction (Restriction) is made on this _____ day of _____, 20__ by ~~{property owner}~~ the City of Providence, and its successors and/or assigns (hereinafter, the "Grantor").

WITNESSETH:

WHEREAS, the Grantor _____ (name) the City of Providence is the owner in fee simple of certain real property identified as ~~{specify Plat, Lot(s), address and Town or City}~~ Plat 51, Lot 323, Parcel B at 333 Adelaide Avenue in Providence, Rhode Island (the "Property"), more particularly described in Exhibit A (Legal Description) which is attached hereto and made a part hereof;

WHEREAS, the Property ~~(or portion thereof identified in the Class I survey which is attached hereto as Exhibit 2A and is made a part hereof)~~ has been determined to contain soil and/or groundwater which is contaminated with certain ~~{hazardous materials and/or petroleum}~~ in excess of applicable ~~{residential or industrial/commercial direct exposure criteria, and/or applicable groundwater objectives}~~ criteria pursuant to the Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases ("Remediation Regulations");

WHEREAS, the Grantor has determined that the environmental land use restrictions set forth below are consistent with the regulations adopted by the Rhode Island Department of Environmental Management ("Department") pursuant to R.I.G.L. § 23-19.14-1 et seq.;

WHEREAS, the Department's written approval of this Restriction is contained in the document entitled: ~~{Remedial Decision Letter/ Settlement Agreement/ Order of Approval/ Remedial Approval Letter}~~ issued pursuant to the Remediation Regulations;

WHEREAS, to prevent exposure to or migration of ~~{hazardous materials and/or petroleum}~~ and to abate hazards to human health and/or the environment, and in accordance with the ~~{Remedial Decision Letter/ Settlement Agreement/ Order of Approval/ Remedial Approval Letter}~~, the Grantor desires to impose certain restrictions upon the use, occupancy, and activities of and at the ~~{Property/Contaminated Site}~~;

WHEREAS, the Grantor believes that this Restriction will effectively protect public health and the environment from such contamination; and

WHEREAS, the Grantor intends that such restrictions shall run with the land and be binding upon and enforceable against the Grantor and the Grantor's successors and assigns.

NOW, THEREFORE, Grantor agrees as follows:

A. Restrictions Applicable to the {Property/~~Contaminated Site~~}: In accordance with the ~~{Remedial Decision Letter/ Settlement Agreement/ Order of Approval/ Remedial Approval Letter}~~, the use, occupancy and activity of and at the {Property/~~Contaminated Site~~} is restricted as follows:

- i No residential use of the {Property/~~Contaminated Site~~} shall be permitted that is contrary to Department approvals and restrictions contained herein;
- ii No groundwater at the {Property/~~Contaminated Site~~} shall be used as potable water;
- iii No soil at the {Property/~~Contaminated Site~~} shall be disturbed in any manner without written permission of the Department's Office of Waste Management, except as permitted in the ~~Remedial Action Work Plan (RAWP) or~~ Soil Management Plan (SMP) approved by the Department in a written approval letter dated _____ (date) Exhibit B and attached hereto;
- iv ~~{Humans engaged in activities at the {Property/~~Contaminated Site~~}~~ shall not be exposed to soils containing hazardous materials and/or petroleum in concentrations exceeding the applicable Department approved direct exposure criteria set forth in the Remediation Regulations};
- v ~~{Water at the {Property/~~Contaminated Site~~}~~ shall be prohibited from infiltrating soils containing hazardous materials ~~and/or petroleum~~ in concentrations exceeding the applicable Department approved leachability criteria set forth in the Remediation Regulations};
- vi ~~{No subsurface structures shall be constructed on the {Property/~~Contaminated Site~~}~~ over groundwater containing hazardous materials and/or petroleum in concentrations exceeding the applicable Department approved GB Groundwater Objectives set forth in the Remediation Regulations};
- vii ~~{The engineered controls at the {Property/~~Contaminated Site~~}~~ described in the ~~{RAWP or SMP}~~ contained in Exhibit B attached hereto shall not be disturbed and shall be properly maintained to prevent humans engaged in ~~{residential or industrial/commercial}~~ activity from being exposed to soils containing hazardous materials and/or petroleum in concentrations exceeding the applicable Department-approved ~~{residential or industrial/commercial}~~ direct exposure criteria in accordance with the Remediation Regulations}; and
- viii ~~{The engineered controls at the {Property/~~Contaminated Site~~}~~ described in the ~~{RAWP or Soil Management Plan SMP}~~ contained in Exhibit B attached hereto shall not be disturbed and shall be properly maintained so that water does not infiltrate soils containing hazardous materials and/or petroleum in concentrations exceeding the applicable Department-approved leachability criteria set forth in the Remediation Regulations.]

B. No action shall be taken, allowed, suffered, or omitted at the {Property/~~Contaminated Site~~} without the prior written approval of the Department if such action or omission is reasonably likely to:

- i Create a risk of migration of hazardous materials and/or petroleum;
- ii Create a potential hazard to human health or the environment; or
- iii Result in the disturbance of any engineered controls utilized at the {Property/~~Contaminated Site~~}, except as permitted in the Department-approved {RAWP or SMP} contained in Exhibit B.

C. Emergencies: In the event of any emergency which presents a significant risk to human health or to the environment, including but not limited to, maintenance and repair of utility lines or a response to emergencies such as fire or flood, the application of Paragraphs A (iii.-viii.) and B above may be suspended, provided such risk cannot be abated without suspending such Paragraphs and the Grantor complies with the following:

- i Grantor shall notify the Department's Office of Waste Management in writing of the emergency as soon as possible but no more than three (3) business days after Grantor's having learned of the emergency. (This does not remove Grantor's obligation to notify any other necessary state, local or federal agencies.);
- ii Grantor shall limit both the extent and duration of the suspension to the minimum period reasonable and necessary to adequately respond to the emergency;
- iii Grantor shall implement reasonable measures necessary to prevent actual, potential, present and future risk to human health and the environment resulting from such suspension;
- iv Grantor shall communicate at the time of written notification to the Department its intention to conduct the emergency response actions and provide a schedule to complete the emergency response actions;
- v Grantor shall continue to implement the emergency response actions, on the schedule submitted to the Department, to ensure that the {Property/~~Contaminated Site~~} is remediated in accordance with the Remediation Regulations (or applicable variance) or restored to its condition prior to such emergency. Based upon information submitted to the Department at the time the ELUR was recorded pertaining to known environmental conditions at the {Property/~~Contaminated Site~~}, emergency maintenance and repair of utility lines shall only require restoration of the {Property/~~Contaminated Site~~} to its condition prior to the maintenance and repair of the utility lines; and

- vi Grantor shall submit to the Department, within ten (10) days after the completion of the emergency response action, a status report describing the emergency activities that have been completed.

- D. Release of Restriction; Alterations of Subject Area:** The Grantor shall not make, or allow or suffer to be made, any alteration of any kind in, to, or about any portion of the ~~{Property/Contaminated-Site}~~ inconsistent with this Restriction unless the Grantor has received the Department's prior written approval for such alteration. If the Department determines that the proposed alteration is significant, the Department may require the amendment of this Restriction. Alterations deemed insignificant by the Department will be approved via a letter from the Department. The Department shall not approve any such alteration and shall not release the ~~{Property/Contaminated-Site}~~ from the provisions of this Restriction unless the Grantor demonstrates to the Department's satisfaction that Grantor has managed the ~~{Property/Contaminated-Site}~~ in accordance with applicable regulations.
- E. Notice of Lessees and Other Holders of Interests in the ~~{Property/Contaminated-Site}~~:** The Grantor, or any future holder of any interest in the ~~{Property/Contaminated-Site}~~, shall cause any lease, grant, or other transfer of any interest in the ~~{Property/Contaminated-Site}~~ to include a provision expressly requiring the lessee, grantee, or transferee to comply with this Restriction. The failure to include such provision shall not affect the validity or applicability of this Restriction to the ~~{Property/Contaminated-Site}~~.
- F. Enforceability:** If any court of competent jurisdiction determines that any provision of this Restriction is invalid or unenforceable, the Grantor shall notify the Department in writing within fourteen (14) days of such determination.
- G. Binding Effect:** All of the terms, covenants, and conditions of this Restriction shall run with the land and shall be binding on the Grantor, its successors and assigns, and each owner and any other party entitled to control, possession or use of the ~~{Property/Contaminated-Site}~~ during such period of ownership or possession.
- H. Inspection & Non-Compliance:** It shall be the obligation of the Grantor, or any future holder of any interest in the ~~{Property/Contaminated-Site}~~, to provide for annual inspections of the ~~{Property/Contaminated-Site}~~ for compliance with the ELUR in accordance with Department requirements.

~~{An officer or director of the company with direct knowledge of past and present conditions of the {Property/Contaminated-Site} (the "Company Representative"), or}~~ A qualified environmental professional will, on behalf of the Grantor or future holder of any interest in the ~~{Property/Contaminated-Site}~~, evaluate the compliance status of the ~~{Property/Contaminated-Site}~~ on an annual basis. Upon completion of the evaluation, the ~~{Company Representative or}~~ environmental professional will prepare and simultaneously submit to the Department and to the Grantor or future holder of any interest in the ~~{Property/Contaminated-Site}~~ an evaluation report detailing the findings of the inspection, and noting any compliance violations at the ~~{Property/Contaminated-Site}~~. If the ~~{Property/Contaminated-Site}~~ is determined to be out of compliance with the terms of the

ELUR, the Grantor or future holder of any interest in the {Property/~~Contaminated Site~~} shall submit a corrective action plan in writing to the Department within ten (10) days of receipt of the evaluation report, indicating the plans to bring the {Property/~~Contaminated Site~~} into compliance with the ELUR, including, at a minimum, a schedule for implementation of the plan.

In the event of any violation of the terms of this Restriction, which remains uncured more than ninety (90) days after written notice of violation, all Department approvals and agreements relating to the {Property/~~Contaminated Site~~} may be voided at the sole discretion of the Department.

I. Terms Used Herein: The definitions of terms used herein shall be the same as the definitions contained in Section 3 (DEFINITIONS) of the Remediation Regulations.

IN WITNESS WHEREOF, the Grantor has hereunto set (his/her) hand and seal on the day and year set forth above.

{Name of person(s), company, LLC or LLP}

By: _____
Grantor (signature)

Grantor (typed name)

STATE OF RHODE ISLAND

COUNTY OF _____ PROVIDENCE

In Providence (CITY/TOWN), in said County and State, on the ____ day of _____, 20__, before me personally appeared _____, to me known and known by me to be the party executing the foregoing instrument and (he/she) acknowledged said instrument by (him/her) executed to be (his/her) free act and deed.

Notary Public: _____

My Comm. Expires: _____

Exhibit A

Legal Property Description

PARCEL B

That certain tract or parcel of land with all buildings and improvements thereon situated on the northerly side of Adelaide Avenue in the City of Providence, County of Providence, and State of Rhode Island as herein bounded and described;

Beginning at the most southeasterly corner of the herein described parcel, said corner being located south $67^{\circ} 27' 49''$ west a distance of four hundred seventy four and $72/100$ (474.72') feet from the intersection of the northerly street line of Adelaide Avenue with the easterly street line of Downing Street as measured along the northerly street line of said Adelaide Avenue;

Thence proceeding south $67^{\circ} 27' 49''$ west along the northerly street line of Adelaide Avenue a distance of three hundred forty eight and $85/100$ (348.85') feet to the most southwesterly corner of the herein described parcel;

Thence proceeding north $22^{\circ} 32' 11''$ west a distance of five hundred twenty three and $53/100$ (523.53') feet to the most northwesterly corner of the herein described parcel;

Thence proceeding north $67^{\circ} 27' 49''$ east a distance of three hundred seventeen and $84/100$ (317.84) feet to the most northeasterly corner of the herein described parcel, the last two (2) courses bounded westerly and northerly by Parcel C;

Thence proceeding south $22^{\circ} 32' 11''$ east a distance of one hundred seventy six and $57/100$ (176.57') feet to a point;

Thence proceeding south $54^{\circ} 32' 43''$ east a distance of fifty eight and $49/100$ (58.49') feet to a point;

Thence proceeding south $22^{\circ} 32' 11''$ east a distance of two hundred ninety seven and $36/100$ (297.36') feet to the point and place of beginning, the last three (3) courses bounded easterly, northeasterly and easterly by Parcel A;

Said parcel contains 176,390 square feet or 4.0 acres more or less.

Meaning and intending to show and describe and hereby describing Parcel B as shown on that certain plan entitled "ADMINISTRATIVE SUBDIVISION PLAN OF A.P. 51, LOTS 8, 170 & 171 FORMER GORHAM MANUFACTURING SITE SITUATED ON ADELAIDE AVENUE PROVIDENCE, RHODE ISLAND GORHAM MILLS PREPARED FOR: Churchill & Banks Ltd.", dated May 14, 2001 Prepared by Garofalo & Associates, Inc., Job No. 5687 Drawing No. 5687-ADMIN-SUBDVN.DWG.

churchill/garofalo/monmouth/plan of ground lines

Barbara A. Trovici

PROVIDENCE, RI
RECEIVED FOR RECORD
200 DEC -4 P 2 06
BARBARA A. TROVICI
ACTING RECORDER OF DEEDS

Exhibit B

Revised Soil Management Plan – 5/24/06

SOIL MANAGEMENT PLAN

Former Gorham Manufacturing Facility – Parcel B 333 Adelaide Avenue Providence, Rhode Island

Plat 51, Lot 323

B.1. PURPOSE

The purpose of this Soil Management Plan (SMP) is to develop a strategy for managing impacted soil encountered during soil disturbance activities, if any, for the Parcel B area at the Former Gorham Manufacturing site, located at 333 Adelaide Avenue in the City of Providence, Rhode Island. It is important that all personnel responsible for working with soil on the site (including equipment operators) are familiar with this SMP.

The goal of this SMP is to ensure that all disturbed soil at the site is managed properly and handled in a safe manner.

B.2 SITE DESCRIPTION AND BACKGROUND

The former Gorham Manufacturing facility was once the country's largest producer of silverware, and was also renowned for its statues, memorials, and architectural bronze work. The facility at the Site reportedly began operations in 1890. Site activities included milling, forging, heat treating, plating, lacquering, polishing, and degreasing. Gorham Manufacturing operated at the Site until 1967, at which time the facility was purchased by Textron. Operations ceased at the facility in 1986, and the facility was demolished in 2001. The current retail operations to the east of Parcel B began in 2002.

Parcel B of the former Gorham Manufacturing facility is proposed to be developed as a municipal school. To the east of the Site is the Parcel A area of the former Gorham Manufacturing facility, which is currently developed with a commercial retail facility and associated fueling station and parking area. To the west of the Site is the Parcel C portion of the former Gorham Manufacturing facility, which is proposed to be developed as a YMCA facility. Mashapaug Pond is located to the north of the Site (approximately 120 ft to the north), and Adelaide Avenue and its associated residences are located to the south. The Providence Water Supply Board provides potable water for the residences along Adelaide Avenue and the adjacent retail complex. No public water supplies are located within 1 mi of the Site.

Multiple environmental investigations and some remedial actions have been conducted at the former Gorham Manufacturing site. These investigations and remedial actions include activities conducted both prior to and following the demolition of the former buildings and subdivision of

B.5 FUTURE DEVELOPMENT/SOIL DISTURBANCE ACTIVITIES

During future site development or soil disturbance activities, if any, at the Parcel B site, soils that are excavated during utility trenching, site grading activities, or any other construction-related activity will be physically observed for signs of potential contamination including staining, odors, sheens, etc. In the event that potentially impacted soils are encountered, they will be segregated and field screened via visual/olfactory methods and/or a Photoionization Detector (PID). If field screening indicates that the soil may be contaminated, analytical testing which may include VOCs, PAHs, or other compounds of concern will be conducted to determine if the material is suitable to be used on-site. Excavated materials deemed to be suitable fill based on visual/olfactory and PID screening will be used as backfill according to the protocols established by the excavation subcontractor. Excavated material that is determined to be potentially contaminated based on field screening results will be drummed or temporarily stockpiled on appropriate polyethylene sheeting, sampled, and covered in a secured area while awaiting laboratory results. The temporary secured area will be created to prohibit access to the stockpile by users of the site, and may include temporary fencing or other engineered controls.

Unsuitable soils that are to be disposed of off-site will be done so at a licensed facility in accordance with all local, state, and federal laws. Copies of the material shipping records associated with the disposal of the material shall be maintained by the City of Providence and included in the annual inspection report for the site.

All clean fill brought to the site and utilized in the engineered control cap shall be subject to the sampling and analysis requirements of the final Department approved RAWP and segregated from regulated soils at the site to prevent potential cross contamination.

All existing site soils, including the closure cap subgrade to be prepared from the existing site grade, shall be presumed to be regulated and shall not be utilized as clean fill or in any of the clean components of the engineered control caps.

Following installation of the engineered control caps, all site soils under the engineered control caps shall be presumed to be regulated and in the case of any future development or soil disturbance activities:

- All excavated regulated soil shall be segregated, contained, managed and secured in a manner to prevent cross contamination of the clean surficial soils or the engineered control cap and to prevent potential human exposure
- The regulated soil shall only be reused on site if returned to a location under a Department approved engineered cap
- No excavated regulated soil shall be utilized to restore any of the clean components of the engineered control caps

- All excess regulated soil shall be properly disposed of off site at a licensed facility in accordance with all applicable laws.

B.6 ENGINEERED CAP

The designed engineered cap components at the Site consists of the following layers:

- Closure cap subgrade
- Geosynthetic fabric filter layer (for landscaped areas only)
- Protective cover soil
- Vegetative cover
- Site improvements.

A closure cap subgrade will be prepared from the existing site grade that will create adequate stormwater drainage for the Site, and serve as a suitable base for the components of the closure cap system.

A geosynthetic fabric filter layer (ProPex 4510 or equivalent) will be placed above the closure cap subgrade and below a protective soil cover for all landscaped areas of the site to prevent human exposure to impacted soil. Geosynthetic fabric filter materials are currently the standard of practice in landfill cap systems and are recommended by most designers and the regulatory community. The fabric filter will be installed so that the seams overlap to prevent the underlying impacted soil from mixing with the clean soil.

The protective cover soil layer of the closure cap system, also commonly termed the vegetative support soil layer, will consist of a minimum of 2 ft of certified clean fill material or equivalent in all areas of the site, and a minimum of 2 ft of clean soil in all areas known or suspected to be subject to the RIDEM Rules and Regulations for Composting Facilities and Solid Waste Management Facilities (Solid Waste Regulations), and under the jurisdiction of RIDEM's Solid Waste Program. This layer is designed to provide for root growth while buffering the underlying layers from damage due to the effects of frost penetration, root penetration, and loading of the finished surface of the landfill closure cap. The upper 6 in. of this soil layer will be specified as an organic topsoil having characteristics to promote adequate vegetation, stability, and erosion resistance in the landscaped areas of the Site.

The vegetative cover component will be specified to be a locally adapted perennial plant mix that is suitable for the Rhode Island area climate. The species will be capable of surviving in a low nutrient soil with little or no requirements for nutrient addition. Root penetration into the soil should be less than the minimum thickness of the soil cover layer so as not to affect the drainage media or geosynthetic material beneath.

The proposed Parcel B development will include extensive non-landscaped areas containing the proposed school structure, paved roadways, paved walkways, and paved parking areas. The engineered cap design proposed for asphalted areas will include a minimum of 6 in. of

appropriate base coarse fill material covered with a minimum of 4 in. of bituminous asphalt. The engineered cap design proposed for concrete pavement areas will include a minimum of 4 in. of poured concrete over a minimum of 6 in. of appropriate base coarse material. An active sub-slab venting system, consisting of a network of suction fans, piping, and suction pits designed to create a negative pressure beneath the school, will be installed beneath the building structure. The components of the sub-slab venting system and the school's concrete slab foundation will cap the area beneath the school.

During all future operations on the site, the integrity of the existing engineered cap will be maintained. Operations that require the temporary removal or alteration of the cap may be permissible subject to Rhode Island Department of Environmental Management approval of a work plan. This work plan must include a description of the anticipated site activity, including the volume of soil to be excavated, anticipated contaminants of concern, a site figure identifying the proposed area to be excavated or disturbed, the expected duration of the project, and the proposed disposal location for excavated soil. This work plan must be submitted to RIDEM no later than 60 days prior to the proposed initiation of these activities. RIDEM will determine if the submittal of a Closure Report for these activities will be required, as well as if Public Notice is required prior to the initiation of soil disturbance. RIDEM will be subsequently notified, following the approval of the work plan, at least 2 days prior to the initiation of soil disturbance activities. If these operations are performed in areas where the existing cap exists, the cap must be replaced within 14 days unless otherwise approved.

Any operations that may require contact with capped, impacted soil, such as utility trenching, must follow the same procedures listed above, including those detailed in the SHERP. If the cap is disturbed, it must be replaced with the appropriate layer of clean fill, asphalt, concrete, and/or geotextile fabric within 14 days unless otherwise approved. Any impacted soil below the cap must be handled properly and the use of Level D PPE would be required.

B.7 SITE SECURITY

The site is completely secured with fences, which will be locked during off-work hours. During site development/school construction activities, all areas will remain securely fenced to prevent trespassers from coming onto the site. After site development/school construction activities are complete, a fencing barrier prohibiting access to the Park Parcel will remain in the vicinity of the northern property boundary of Parcel B.