

Parcel C, Former Gorham Manufacturing Property

425 Adelaide Avenue
Providence, Rhode Island

Prepared for: **Providence Redevelopment Authority**
Providence, Rhode Island

Prepared by **VHB/Vanasse Hangen Brustlin, Inc.**
Providence, Rhode Island

August 2010

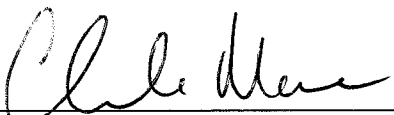
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Senior Project Scientist:



Claude Masse

Project Manager:



Timothy O'Connor, P.E.

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Introduction

On behalf of our Client, the Providence Redevelopment Authority (PRA), Vanasse Hangen Brustlin, Inc. (VHB) has prepared this *Remedial Action Work Plan* (RAWP) for property referred to as "Parcel C" of the Former Gorham Site property located at 425 Adelaide Avenue, in Providence, Rhode Island. The property is further defined as City of Providence Tax Assessor's Plat 51, Lot 324.

The RAWP has been prepared using the Rhode Island Department of Environmental Management's (RIDEM's) *Rules and Regulations for the Investigation and Remediation of Hazardous Materials Releases (Remediation Regulations)*. The RAWP includes remedial strategies to address Method I exceedances observed at the Site as described in a *Site Investigation Report* (SIR), dated May 29, 2003 and prepared by GZA GeoEnvironmental, Inc. (GZA).

Site Description and Overview

Location and Site Description

The Providence Redevelopment Authority will construct a lawn area/open space and an associated paved parking lot on 5 acres located within the 37-acre former Gorham Property located between Adelaide Avenue and Mashapaug Pond in the Reservoir Triangle neighborhood of Providence, Rhode Island. A Site Location Map is provided as **Figure 1**. A Site Plan is attached as **Figure 2** that depicts existing features and the proposed redevelopment.

The former Gorham Property is listed as a "State Site" by RIDEM (RIDEM Case No. 97-030) and a CERCLIS Site by the United States Environmental Protection Agency (USEPA) (USEPA ID RID982542318). In 1990, the City of Providence foreclosed on the former Gorham Property as a result of a former owner defaulting on taxes. In its capacity as former owner and operator of the Gorham Property, Textron is a "Responsible Party" under RIDEM's *Remediation Regulations* and is conducting soil and groundwater remediation pursuant to its April 2001 RAWP, approved by RIDEM on October 10, 2001. Textron also committed to complete the required remedial actions in a 1994 agreement with the City of Providence. Since the transfer of the property to the City of Providence, for development purposes it has been divided into four distinct parcels:

Parcel A: the location of the Stop & Shop Supermarket;

Parcel B: the location of the Dr. Jorge Alvarez High School;

Parcel C: the location of the proposed lawn area/open space and associated paved parking lot;

Parcel D: the portion of the former Gorham property adjoining Mashapaug Pond that will be used by the City of Providence as a walking trail.

The parcel subject to this RAWP is limited to the "main" portion of Parcel C designated for construction of the proposed lawn area/open space and paved parking lot only, and is hereafter referred to as the "Parcel C" or the "Site".

Environmental Setting

The following subsection provides information regarding the general physiographic and hydrologic conditions in the area of the Site.

Topography and Drainage

The regional topography in the vicinity of the parcel is relatively flat. Based on review of the United States Geological Survey (USGS) topographic map of the area (Providence, RI Quadrangle, dated 1971, photorevised in 1979), the elevation at the Site, and nearby vicinity decreases slightly from south to north, with ground elevations ranging from approximately 70 to 60 feet above the National Geodetic Vertical Datum (NGVD) of 1929. At the north and northwest portions of the Site, grades decrease sharply at the shoreline of Mashapaug Pond to approximately 45 feet.

Groundwater

Based on a review of the area's topography, topographic mapping, and observations made during Site reconnaissance, groundwater within the vicinity of the Site is expected to flow northwestward, towards Mashapaug Pond. Subsequent references to upgradient and downgradient directions are relative to our anticipated northwesterly flow direction within the vicinity of the Site. However, groundwater flow direction at the Site may vary due to underground utilities (e.g. storm drains, sewers, and utility conduits), and/or heterogeneous subsurface conditions.

The groundwater table level was measured at 28.5 feet below the ground surface on January 7, 2002. This depth corresponds to an elevation of approximately 39.5 feet. Groundwater levels were also estimated based on observations made during drilling; after a stabilization time of 30 minutes or less, the groundwater level at all boring locations was greater than 28 feet below the ground surface. Fluctuations of groundwater levels are anticipated to occur due to variations in rainfall and other factors different than those prevailing at the time of the reading. It should be noted that the seasonally lowest groundwater levels typically occur during fall months.

Groundwater beneath the Site is classified GB by RIDEM and is considered unsuitable for use as a drinking water source due to known or presumed degradation. A GB Groundwater designation is typical for urban locations in Rhode Island.



Soil/Bedrock

USGS publications were reviewed to develop an understanding of the area geology. Maps of surficial geology and bedrock geology of the Providence Quadrangle, published in 1956 and 1959, respectively, were consulted. Based on mapping of surficial geology, the overburden at the Site consists of outwash deposits comprised of sorted sand and coarse gravel. Mapping of bedrock geology shows bedrock in the area predominantly of the Rhode Island Formation. This unit is characterized by greywacke, conglomerate, sandstone, shale, and meta-anthracite.

Three wells drilled in the general area of the Site on the eastern side of Mashapaug Pond prior to 1959 show bedrock elevations at -56 to -103 feet NGVD, decreasing to the north end of the pond. Driller's logs from these wells show 100 to 110 feet of fine sand and silt, underlain by 40 to 50 feet of coarse gravel and clay overlying bedrock.

3

Summary of Site Soil and Groundwater Conditions

Former Gorham Property

As noted above, Textron and others have performed environmental site investigations of the Site. Textron has conducted soil and groundwater remediation actions pursuant to its April 2001 RAWP (approved by RIDEM on October 10, 2001) at the former Gorham Property. VHB understands that the following remedial components are to be addressed or have been completed by Textron as part of its remedial action at the entire Gorham Property:

1. Contaminated groundwater is present in the western portion of the former Gorham Property consisting of volatile organic compounds (VOCs) at concentrations that exceed the RIDEM GB Groundwater Objectives. Textron is undertaking an in-situ treatment and groundwater monitoring program to address these exceedances.
2. Textron's RAWP proposed excavation of several areas where soil contained contaminants at concentrations greater than the applicable Upper Concentration Limits (UCLs). VHB understands that these removal actions have been completed.
3. Soils containing contaminants at concentrations above the Industrial/Commercial Direct Exposure Criteria (I/CDEC) are present throughout the former Gorham Property. To address these exceedances, Textron proposed capping approaches consistent with site development activities and the establishment of an Environmental Land Usage Restriction (ELUR). The remediation activities described herein are consistent with this goal.
4. There is currently a stockpile located on the Site that consists of crushed asphalt, concrete, and rock. It is the Project Team's understanding that RIDEM previously gave a potential purchaser of the Site permission to

re-use the material as sub-base under capped portions of the Site. This material will either be used under the cap or will be disposed at a licensed facility.

5. A portion of the former Gorham Property adjoining Mashapaug Pond will be used by the City of Providence as a walking trail (Parcel D). Textron is in the process of completing a Method 3 Risk Assessment of the walking trail area with the goal of achieving unrestricted access to the area.

Parcel C (the "Site")

Based on the work performed by GZA (on behalf of the YMCA) and Harding Lawson Associates (on behalf of Textron), the following conditions of environmental concern have been identified at the Parcel C:

1. Contaminants consisting of polycyclic aromatic hydrocarbons (PAHs) and certain metals are present in soils at the Site at concentrations above the RIDEM Method I Residential Direct Exposure Criteria (RDEC). These contaminants and others have been found in soil throughout the former Gorham Property and are likely reflective of the long-term historical industrial use of the property.
2. VOCs, primarily trichloroethene (TCE) and Freon 113, are present in soil gas at low parts per million per volume (ppmv) levels beneath the central and northern areas of the Site. These appear to be associated with the volatilization of these constituents from the groundwater plume that has been identified beneath the Site.
3. Aerobic biodegradation of organic materials (from natural and/or anthropogenic sources) is evident in the observed lowered oxygen and raised carbon dioxide levels in soil gas beneath the Site, with changes most evident in the northern portion of the Site. In one area, on the northern most side of the Site, in the area of GZA soil gas probe SG-11 to SG-13, percent levels of methane (5.4 percent in one sample) also appear to have been generated from anaerobic degradation of organic material.
4. To evaluate the significance of these findings, GZA compared soil gas data to available criteria. While the TCE concentration was above the Rhode Island Air Pollution Control Regulation No. 22 Acceptable Ambient Air Levels (AALs), it was below the Connecticut Department of Environmental Protection's Residential Volatilization Criteria for soil vapor. Notwithstanding, it was recognized that soil gas concentrations will vary widely from day-to-day and season-to-season.

4

Remedial Activities

Proposed Redevelopment

The Providence Redevelopment Authority will construct a lawn area/open space and an associated paved parking lot on Parcel C. Site features will include parking for approximately 35 vehicles. All components of the proposed Site improvements will be constructed so as to be consistent with the RIDEM typical capping requirement. Key Site features are shown on the Site Plan attached as **Figure 2**.

Remedial Objectives

Based on the above, the following remedial objectives have been established for the Parcel C. Note that response measures proposed serve to augment those to be completed by Textron and to address changes in site use (i.e. residential versus industrial/commercial).

1. Control exposure to Site soils containing contaminants at concentrations above the RDEC;
2. Establish procedures/protocols for soils management;
3. Incorporate remedial measures into the design of the proposed Site improvements; and
4. Protect the long-term effectiveness of the remedial measures.

In accordance with Section 9.00 of the *Remediation Regulations*, this RAWP addresses remedial objectives for all potentially impacted media (soil, groundwater, surface water/sediment and air). Remedial objectives for each of the media prescribed by the regulations are discussed below.

■

Soil

As described previously, Method I exceedances that have been documented at the Site were limited to certain PAHs and metals at concentrations above RDECs. As the proposed use of the Site is considered a residential exposure scenario, remedial objectives for soil have been included. To address this route of exposure, all soils will be capped with asphalt pavement, one foot of clean soil overlying a geotextile fabric, or two feet of clean soil. The selected remedial approach is consistent with the intent of the *Remediation Regulations* and in keeping with the planned construction/development activities for the property.

■

Groundwater

As noted above, contaminated groundwater is present in the western portion of the property consisting of VOCs at concentrations that exceed RIDEM's GB Groundwater Objectives. As Textron has undertaken an in-situ treatment and groundwater monitoring program to address these exceedances, this RAWP does not include additional groundwater related response actions. Existing monitor wells will be preserved and will be extended to the new ground surface; however, any monitor well(s) within the footprint of the proposed lawn area/open space will be closed in accordance with Appendix 1 of the *RIDEM Rules and Regulations for Groundwater Quality*.

■

Air

Although the GZA SIR identified low but detectable levels of VOCs beneath the proposed location of the Site redevelopment, this project does not include building of any structures design for occupation. As such, no response actions regarding air/soil gas are proposed.

■

Surface Water/Sediment

The remedial program will not include components to address impacts to surface water or sediment.

Engineered Cap/Barrier

As shown on the attached Site Plan, exterior surfaces of the Site will consist of both landscaped and solid surface areas (lawn area/open space and asphalt parking). The specifications for the placement of the solid surfaces are summarized below. It is possible that subsurface utilities consisting of electrical and water service may be installed as part of Site improvements. If they are installed, it will be done prior to the installation of the caps.

- Asphalt pavement – access and parking areas will be completed with a 6-inch base course composed of off-Site gravel and completed with two 2-inch perpendicular lifts of asphalt.

The landscaped areas will be developed with tree/bush plantings and sod/grass cover. Consistent with RIDEM policy, to control direct exposure risks, the landscaped areas will be developed by the placement of one foot of clean fill over a geotextile or 2 feet of off-Site gravel and loam. In areas where geotextile will be used as the engineered barrier/cap, the fabric will possess a minimum puncture strength of 120 pounds and minimum burst strength of 400 pounds per square inch in accordance with RIDEM guidance. In some of the landscaped areas, geotextile may be substituted for orange snow fencing. The orange snow fencing will provide a clear indication of the bottom of the engineered cap while allowing root penetration for proposed tree plantings. It will be the responsibility of the Site contractor to provide assurances (through laboratory sampling) that off-Site soil used for the landscaping does not contain contaminants at concentrations above the Method I RDEC. Accordingly, samples representative of the off-Site supply (1 sample per each 1,000 cubic yards of soil) will be required to be tested for the following analytes:

- Total Petroleum Hydrocarbons (TPH) via EPA Method 8100M;
- VOCs via EPA Method 8260;
- Semivolatile organic compounds (SVOCs) via EPA Method 8270; and
- Priority Pollutant Metals (13) (PPM13) via EPA Methods 6010 & 7471A.

Demonstration of the soil supply in meeting the RDEC will be made prior to the delivery of the material to the Site. Soils not meeting the Method I RDEC will be rejected for use at the Site. Laboratory testing results of the selected soil source will be provided to RIDEM as part of the *Remedial Action Closure Report*.

Points of Compliance

As the principle remedial objective of the Project is to control future exposures to impacted soils, the point of compliance established will involve an evaluation of the quality of soil brought to the Site to serve as the final cover. In addition to soil

sampling of imported soil, a statement from the soil supplier providing the origin and suitability of the material will be obtained before the import of soil begins.

To protect the long-term effectiveness of the remedial measures, an ELUR and SMP will be recorded on the property deed. Draft copies of these documents are included as **Appendix B**.

Proposed Schedule

The Providence Redevelopment Authority is prepared to implement the remedial action plan upon receiving a Remedial Approval Letter. The remedial actions will be completed concurrently with site redevelopment construction which is likely to begin in Fall 2010. The Remedial Action Closure Report will be submitted within 30 days following the completion of the remedial action. The ELUR and SMP will be finalized by the Client within 60 days following the approval by RIDEM and will be recorded with the City of Providence. A recorded copy of the ELUR will be forwarded to RIDEM within 10 days of filing.

Contractors and/or Consultants

A Site contractor has not been selected yet. An Environmental Professional will be available to document construction activities and installation of the engineered cap. An Environmental Professional or someone representing the Property Owner who is knowledgeable of the caps will provide monitoring associated with the yearly cap inspection consistent with the RIDEM Remediation Regulations.

Dust Control

The general contractor will prepare and submit to the Property Owner a dust and dirt containment plan prior to beginning work. To control dust, the contractor will utilize water spraying twice per day, when needed, to suppress airborne dust generated during soil excavation, grading, and other Site development activities.

Sedimentation and Erosion Control

To protect off-Site areas from the potential stormwater runoff of impacted soils, all construction activities will be subject to an Erosion and Sediment Control Plan and Construction Stormwater Pollution Prevention Plan and presented to the appropriate municipal and RIDEM program leads.

Contingency Plan (Health and Safety Plan)

Prior to initial construction activities the perimeter of the property will be surrounded with a chain link fence. A Health and Safety Plan will be developed by the contractor for implementation with consideration to OSHA regulations. A copy of VHB's site-specific Contingency Plan is attached as **Appendix C**.

Operations Log

An Operations Log will be developed and maintained at the Site during the period of construction. The log will be readily available at the Site during its construction. Subsequent to this period, the log will be retained for a minimum period of three years. The Operations Log will include, at a minimum, the following information:

- Dates and time periods during which the remedial components described herein were ongoing;
- Records of any laboratory analysis and field screening performed as part of the remedial action;
- Description of instances under which the Contingency Plan was implemented; and
- Inspection records detailing compliance with the remedial specifications described herein and the actions taken to address non-compliant practices/conditions.

A copy of the Operations Log template is attached as **Appendix D**. Completed copies of Operations Log will be provided to RIDEM at the completion of the Project as part of the *Remedial Action Closure Report*.

Security Procedures

During construction activities, access to the Site will be limited to the owner's contractors, consultants or other designated representatives through the construction fencing and gates, safety fencing, yellow barrier tape, warning signs, and/or other barricades. It will be the responsibility of the general contractor to address the following:

- Development of a Site-specific health and safety plan which meets the state and federal regulations;
- Evaluation of off-Site soil;
- Site security, including fencing off work areas for safety purposes;
- Traffic control;
- Debris removal, haulage, and recycling or disposal;
- Dust control; and

- Daily Site maintenance of any property on public way.

Shutdown, Closure and Post-Closure Requirements

In the event that the development Project is cancelled, or if construction activities are suspended for an extended period of time (i.e. greater than two weeks), RIDEM will be so notified and the security fencing will remain in-place, closed and locked.

Daily shut-down procedures will include the covering and securing of all stockpiled soils with polyethylene sheeting and the application of water (via the water truck) to exposed surfaces. Additionally, off-hour access to the Site will be controlled by locking the temporary construction fencing.

In conjunction with an ELUR that will be recorded on the chain of title for the property, the owner will institute monitoring and maintenance procedures, including requirements to maintain pavement covers in good condition and procedures to be followed to notify contractors of existing Site conditions in the event of utility repair or other activities that might disturb potentially contaminated soils. Provisions will be made to provide notices to the general community as necessary.

Institutional Controls and Notices

To protect the long-term effectiveness of the remedy, an ELUR will be recorded on the deed to the property. The ELUR will also provide reference to the *Soil Management Plan* (SMP). The SMP was developed to establish procedures should any future work at the Site involve the disturbance of the surfaces and the excavation of underlying soils. The ELUR will serve to:

- Require that the Site's cover materials (soil cap and asphalt pavement) remain in-place and in good condition;
- Prohibit the use of groundwater at the Site for drinking water;
- Require RIDEM notification should soil excavation below the soil cap and/or asphalt pavement be planned;
- Will include a soils management plan which will define how the Site will be managed in the event such disturbances are necessary;
- Prohibit activities that may interfere with the remedial action and its maintenance, long-term monitoring or other measures necessary to assure the integrity of the remedial action;
- Require prior notice to RIDEM of the owner's intent to convey any interest in the property;
- Grant RIDEM the right to enter the property for monitoring compliance with the remedial actions; and

- Require annual certification by an Environmental Professional as to the integrity of the engineered controls.

A copy of the final, department-approved recorded ELUR will be submitted to RIDEM within 10 days of its recording in the City of Providence Land Evidence Records. As the ELUR will apply to the Site in its entirety, a legal description of the property will be referenced in and attached to (as an exhibit) the ELUR.

Compliance Determination

As long as the remedial measures described in this plan are implemented and maintained, the Site will be considered to be compliant with the remedial objectives. At the completion of the Construction Project, a *Remedial Action Closure Report* will be developed describing the construction activities and documenting the Site's compliance with the remedial objectives. We understand that RIDEM will issue a *Letter of Compliance* for the Site (Parcel C) once these conditions are met.

Maintenance procedures will include requirements to maintain soil and/or pavement caps in good condition and procedures to be followed to notify contractors of existing Site conditions in the event of utility repair or other activities that might disturb potentially contaminated soils.

To evaluate the Site's compliance status with respect to the ELUR, the owner will institute yearly monitoring and maintenance procedures to be followed to ensure that the capped soils remain secure. A qualified Environmental Professional or someone representing the Property Owner who is knowledgeable of the caps will conduct a yearly evaluation of the property. The evaluation will include a reconnaissance of the property at which time the condition of the pavement and capped portion of the Site will be documented. Additionally, the evaluation will include apparent changes in the nature of Site use and apparent changes to the physical condition of the property (with respect to alterations that may affect the integrity of the engineering modifications described in the RAWP and ELUR). Annual inspection reports, prepared by a qualified individual will be submitted to RIDEM.

Certification Statement

VHB submits the following statements of certification.

Certification by Preparer:

I, Claude Masse, an employee of Vanasse Hangen Brustlin, Inc. and the preparer of this report, hereby certify that the information contained within this report is accurate to the best of my knowledge.

I, Timothy O'Connor, P.E., an employee of Vanasse Hangen Brustlin, Inc. have reviewed this report and certify that it is accurate to the best of my knowledge.

Claude Masse

8/26/10

Preparer's Signature

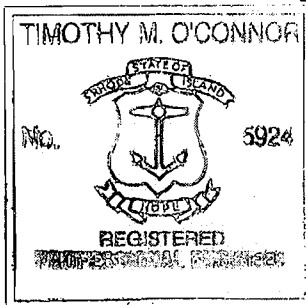
Date

Timothy O'Connor

8/26/10

Reviewer's Signature

Date



Certification by Owner/Operator

I certify that the information contained in this report is a complete and accurate representation of the conditions at the Site and the proposed remedial activities to the best of my knowledge.

[Signature]

8/26/10

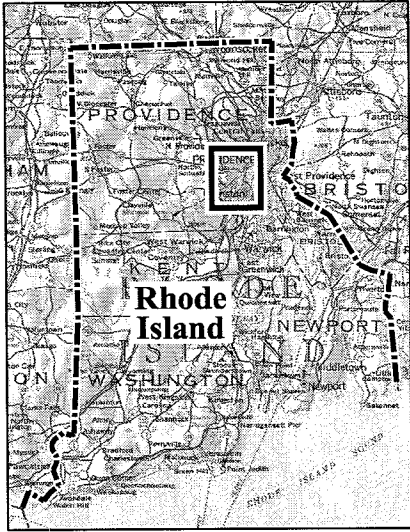
Owner/Operator Name

Title

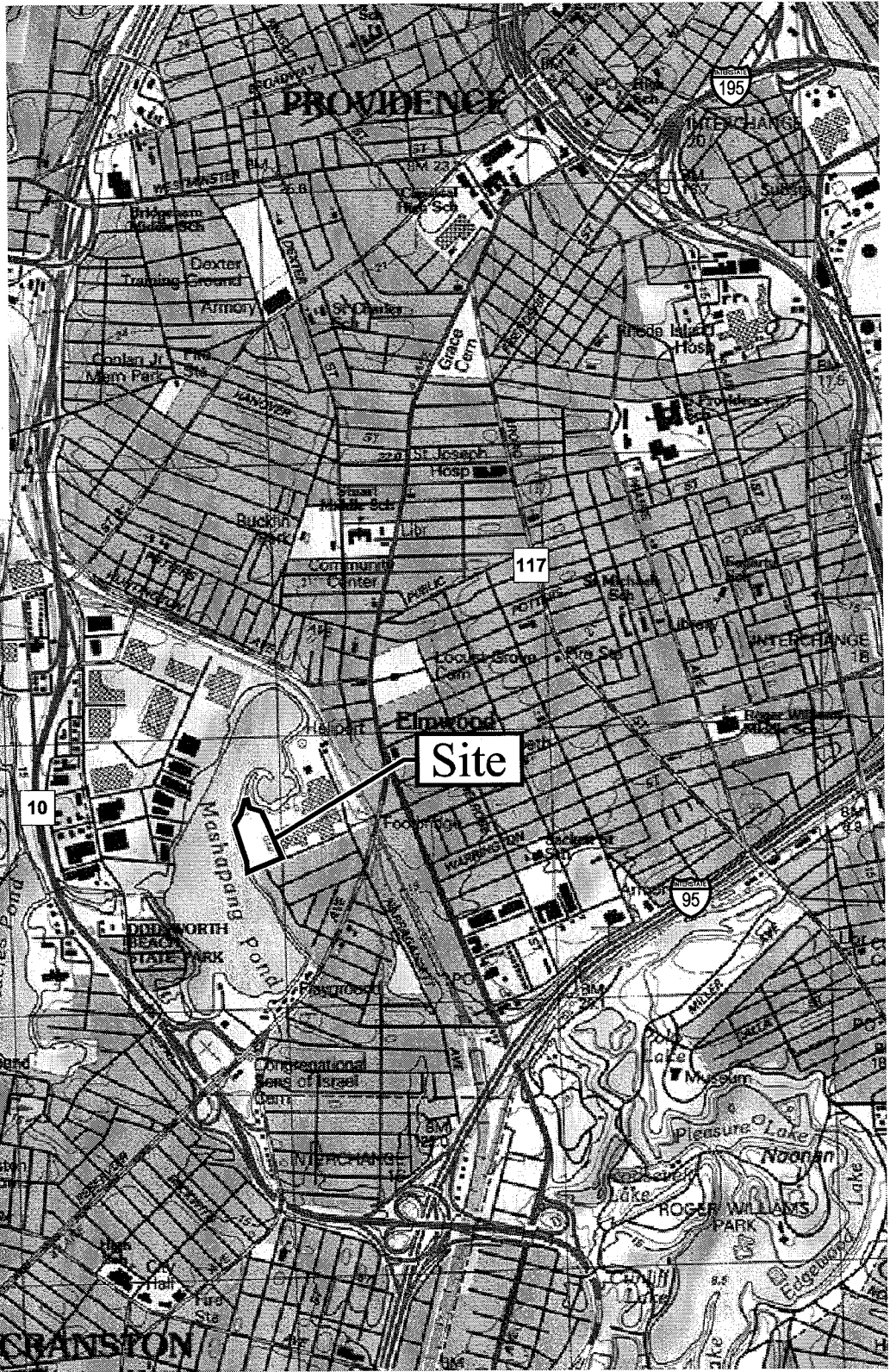
*Executive Director
PROVIDENCE REDEVELOPMENT AGENCY*



Figures

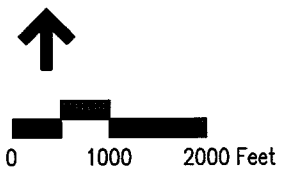


Site Location Key



Source: USGS Quadrangles


Vanasse Hangen Brustlin, Inc.




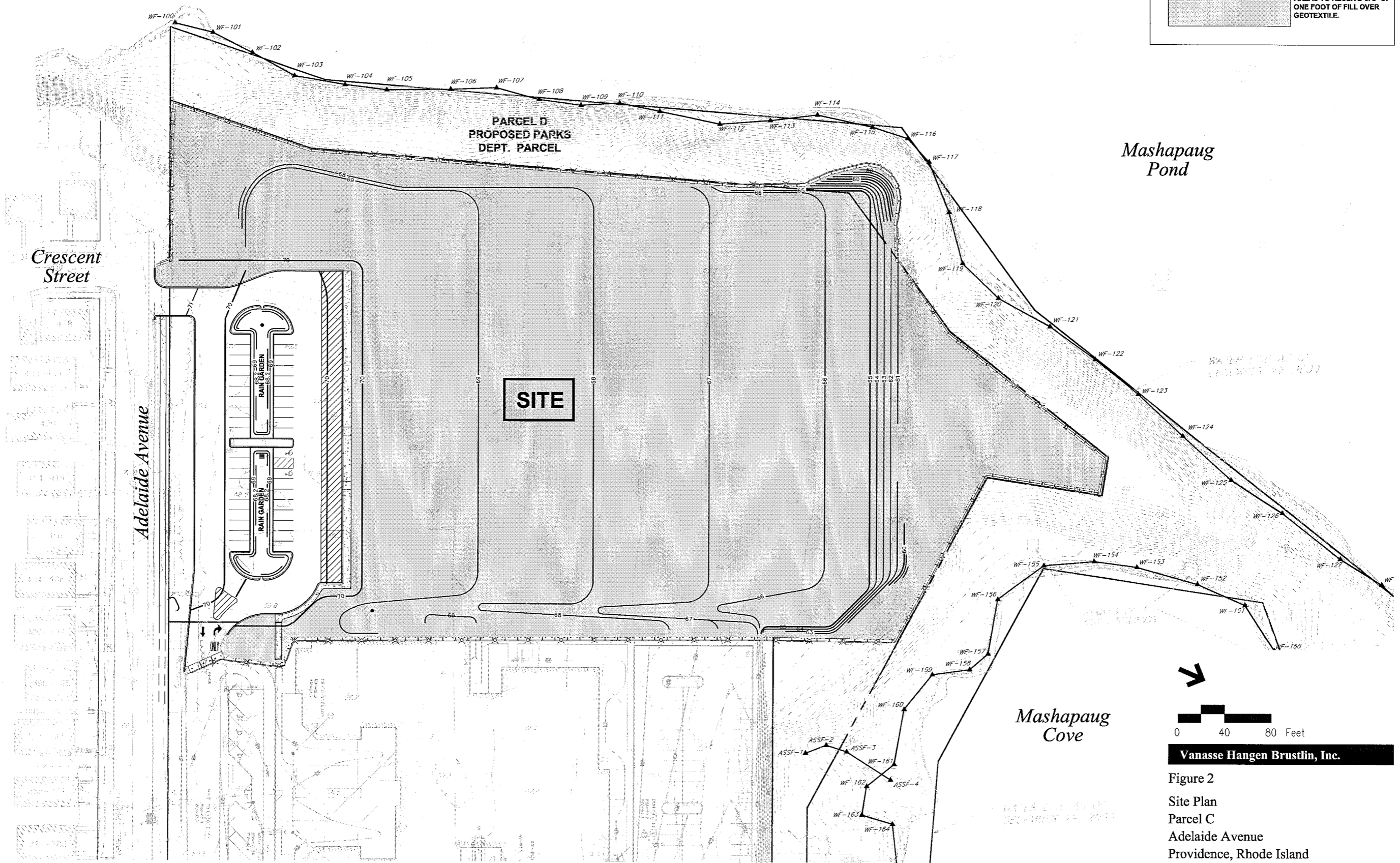
Site Location Map
Adelaide Avenue
Providence, Rhode Island

Figure 1

LEGEND

 HAYBALE AND SILT FENCE

 AREAS TO RECEIVE CAP OF ONE FOOT OF FILL OVER GEOTEXTILE.



▲

0 40 80 Feet

Vanasse Hangen Brustlin, Inc.

Figure 2
 Site Plan
 Parcel C
 Adelaide Avenue
 Providence, Rhode Island



Appendix A – Limitations

Limitations



Providence Redevelopment Authority Providence, Rhode Island

- This report has been prepared for the sole and exclusive use of Providence Redevelopment Authority (Client), and is subject to and issued in connection with the Agreement and the provisions thereof. Any use or reliance upon information provided in this report, without the specific written authorization of Client and VHB, shall be at the User's sole risk.
- In conducting this work plan, VHB has obtained and relied upon information from multiple sources to form certain conclusions regarding potential environmental issues at and in the vicinity of the subject property. Except as otherwise noted, no attempt has been made to verify the accuracy or completeness of such information.
- No attempt has been made to assess the compliance status of any past or present Owner or Operator of the Site with any federal, state, or local laws or regulations.
- The findings, observations, and conclusions presented in this report are limited by the scope of services outlined in our Agreement, which reflects schedule and budgetary constraints imposed, by the Client for the current phase of environmental assessment. Furthermore, the assessment has been performed in accordance with generally accepted engineering practices. No other warranty, expressed or implied, is made.
- The assessment presented in this report is based solely upon information gathered to date. Should further environmental or other relevant information be developed at a later date, the Client should bring the information to the attention of VHB as soon as possible. Based upon an evaluation, VHB may modify the report and its conclusions.

■

Appendix B – Draft ELUR

ENVIRONMENTAL LAND USAGE RESTRICTION

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

WITNESSETH:

WHEREAS, the Grantor _____ (name) is the owner in fee simple of certain real property identified as ~~{specify Plat, Lot(s), address and Town or City}~~**Plat 51, Lot 324, 425 Adelaide Avenue, 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 ~~Band is made a part hereof~~) has been determined to contain soil and/or groundwater which is contaminated with certain ~~{hazardous materials and/or petroleum}~~**{hazardous materials and/or petroleum}** in excess of applicable ~~{residential or industrial/commercial direct exposure criteria, and/or applicable groundwater objectives}~~**{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}~~**{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}~~**{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}~~**{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}~~**{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-C 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-C 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}~~ 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 BC.

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]~~ Providence Redevelopment Authority

By: _____
Grantor (signature) Grantor (typed name)

STATE OF RHODE ISLAND

COUNTY OF _____

In (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: _____

SOIL MANAGEMENT PLAN

Dr. Jorge Alvarez High School Athletic Fields
Parcel C of the Former Gorham Property
Providence, Rhode Island
RIDEM Case #1997-0304

This *Soil Management Plan* (SMP) has been prepared to establish procedures that should be followed during future construction/maintenance activities that will require the need to manage soils excavated from the subsurface at property referred to as Parcel C (the Site) of the former Gorham property. The plan serves to supplement, and will be initiated by, the Rhode Island Department of Environmental Management (RIDEM) notification requirement established by the Environmental Land Usage Restriction (ELUR) for the property.

CONTAMINANTS OF CONCERN

Direct contact with surficial soil has been identified as a long-term exposure pathway of concern at the Site. Soils at the Site were found to contain certain constituents (i.e. arsenic, lead, and polycyclic aromatic hydrocarbons (PAHs)) at concentrations that exceed the Method I Residential Direct Exposure Criteria and Industrial/Commercial Direct Exposure Criteria (RDEC and I/CDEC, respectively).

BASIC HEALTH AND SAFETY PROCEDURES

The basic health and safety procedures outlined below will be implemented while performing excavation work at the Site. **The procedures are intended as a general guideline for basic, short-term excavation activity conducted at the Site and it should be noted that more site-specific health and safety procedures may be warranted for complex or long-duration subsurface work. Additionally, it must be recognized that others who may be involved in subsurface excavation work at the Site will be responsible for the preparation of their own health and safety procedures.**

Based on the type of chemical constituents present at the Site, the potential routes of exposure to on-site excavation or utility repair workers include dermal contact (absorption) or accidental ingestion of impacted soil, inhalation of air-borne soil particles and the possible injection of contaminants through broken skin. Utilization of the appropriate personal protective equipment (PPE) and the general safety guidelines provided below will minimize the potential for worker exposure to petroleum-impacted media while performing work within the ELUR area.

Personal Protective Equipment (PPE)

In general, the level of protection which will be used by workers will be determined by the task which the person is performing; however, at a minimum Level D PPE will be worn at all times while performing excavation activities. Level D PPE will, at a minimum, consist of the following PPE:

1. Steel-toe work boots with over-boots as needed;
2. Eye protection (safety glasses or chemical splash goggles);
3. Nitrile gloves/inner latex or PVC gloves; and
4. Hard hat.

If Level C or higher level of PPE is determined to be necessary to complete a specific task, a site-specific health and safety plan will be developed for the work to be performed.

Site Operating Procedures/Safety Guidelines

Regardless of the level of PPE necessary to complete work, the following general health and safety guidelines will be followed during the performance of any excavation activities. Adherence to these guidelines will reduce the potential worker exposure to impacted media.

1. All work conducted on-Site shall be conducted in accordance with the requirements of this SMP (including all health and safety procedures);
2. The location of all utilities in the vicinity of the excavation will be established prior to beginning work;
3. All spectators will remain at a safe distance from the excavation and under no circumstances will approach the excavation without the consent of the responsible employee;
4. A pre-work meeting will be conducted at the beginning of each day to discuss the health and safety procedures;
5. Practice contamination avoidance: never sit down or kneel in an excavation; never lay equipment on the ground; avoid obvious sources of contamination such as puddles; and avoid unnecessary contact with objects in an excavation;
6. All on-Site workers shall be alert to any unusual changes in your physical condition; never ignore warning signs. Notify the responsible employee as to suspected exposures;
7. All equipment used in an excavation shall be properly cleaned and maintained in good working order. Equipment shall be inspected for signs of defect and/or contamination before use;
8. Eating, drinking, chewing gum, and smoking shall be prohibited in active excavation areas; and,
9. The discovery of any condition that would suggest the existence of a situation more hazardous than anticipated shall result in the evacuation of site personnel from the excavation and the re-evaluation of the hazard and the level of protection.

In Case of Serious Exposure of Injury

In the event of serious chemical exposure or worker injury, the appropriate employee will immediately be alerted. This person will follow the steps indicated below:

1. Summon appropriate emergency response agency by using the emergency phone numbers provided as provided below. Convey the following information:
 - a. Nature of emergency,
 - b. Location of victim,
 - c. Specific information about exposure or accident (gases, chemical, asphyxiation, etc.),
 - d. Length of exposure, and
 - e. Hazards which may be involved in rescue or treatment.
2. If taken to a hospital, notify the hospital of the background of the problem:
 - a. Potential for hospital contamination,
 - b. Any contaminated items and the nature of the contamination, and
 - c. Estimated arrival time.

Emergency Phone Numbers

Emergency telephone numbers and the directions to the nearest hospital are included below.

Response Agency	Phone Number
Ambulance	911
Police	911
Fire	911
RIDEM/Office of Compliance & Inspection/ Emergency Response Program	(401)222-1360 or (401) 222-3070 (non-business hours)
USEPA/Hazardous Materials Spills	(800) 424-8802
Poison Control Center	(800) 562-8236
Dig Safe (Utility Clearance)	1-888-DIGSAFE

Nearest Hospital: Rhode Island Hospital
593 Eddy Street
Providence, Rhode Island (401) 444-4000

Directions:

1. Start out going EAST on ADELAIDE AVE toward DOWNING ST
2. Stay STRAIGHT to go onto DOWNING ST
3. Turn LEFT onto ALVIN ST
4. Turn LEFT onto RESERVOIR AVE/RT-2
5. Turn RIGHT onto ADELAIDE AVE
6. Turn RIGHT onto BROAD ST/RI-117
7. Turn LEFT onto THURBERS AVE
8. Turn LEFT onto EDDY ST
9. Turn LEFT at 593 EDDY ST

Total Travel Mileage: 2.11 miles

Total Travel Time: 8 minutes

SOIL MANAGEMENT GUIDELINES

The following soil management guidelines were developed for activities involving soil excavation at the Site. The guidelines apply to all construction and maintenance activities; refer to the "emergency" provision of the ELUR. The procedures will be implemented to govern soil stockpiling, management, and disposal procedures. However, it is necessary to backfill all excavations in a manner that ensures that a RIDEM typical cap is in place at the former excavation area. Appropriate capping requirements are as follows:

- Provide 30 days written notice to RIDEM before any mechanical excavation, or within three days of excavation in response to an emergency as provided in the ELUR for the Site.
- As part of the RIDEM notification, the Site owner will provide a brief written description of the anticipated Site activity involving soil excavation. The description will include an estimate of the volume of soil to be excavated and the duration of the construction project.
- The stockpiling and disposal procedures detailed in this plan apply only to excess soil which cannot be used as backfill in the original excavation from which it came.

- Soil generated from an excavation conducted at the Site may be placed back into its original excavation for backfill upon completion of the excavation.
- Prior to the initiation of soil excavation, the selected contractor or any other personnel performing the subsurface work at the Site will contact DIGSAFE and appropriate utility companies to identify and mark the location of below grade utilities.
- Excavated soils will be staged and temporarily stored in a designated area of the property for no more than 90 days. Within reason, the storage location will be selected to limit the unauthorized access to the materials (i.e. away from the public roadways/walkways).
- Depending on the volume of material involved in the project, soils will be either stockpiled on polyethylene sheeting, or stored in roll-off type containers. In either case, the material in storage will be covered with secured polyethylene sheeting at the end of each workday. Stockpiled materials will be maintained with appropriate controls to limit the loss of the cover and protect against stormwater erosion. Soil stockpiles shall be inspected daily. Should tears or punctures be observed in either the polyethylene sheeting covering or underlying the piles, repairs will be made immediately.
- During Site/earth work, dust suppression techniques must be initiated and maintained during periods when windblown dusts are generated. All reasonable precautions must be taken to prevent the excessive generation of dust during soil excavation, stockpiling, loading, and other soil handling activities. If excessive dust generation occurs and cannot be reasonably controlled, dust masks should be required for on-Site workers.
- In the event that unexpected observations or situations involving hazardous materials, hazardous wastes or similar conditions of environmental concern arise during Site work, such activities will immediately stop. Workers will not attempt to handle the situation themselves, but will contact an Environmental Professional for further evaluation and direction.
- Soils excavated from the Site may not be re-used on off-Site properties. Soil must be sampled, by an Environmental Professional, at a frequency of one sample per 500 tons for all constituents. In the event that the soil does not meet these criteria, the material must be properly managed and disposed of off-Site at a licensed facility.
- If soils are to be transported off-Site for disposal/recycling, a qualified Environmental Professional will collect samples of the excavated soils (either during excavation or from stockpiles) for laboratory testing. The testing program will be adequate to support the data requirements of the anticipated disposal facility, but should consider the following testing program.

Analyte/Parameter	Test Method
Petroleum hydrocarbons	EPA Method 8100M
Volatile organic compounds	EPA Method 8260B
Semi-volatile organic compounds	EPA Method 8270C
Polychlorinated Biphenyls	EPA Method 8081
Total RCRA Metals	EPA Method 6010 & 7471A
Flashpoint	EPA Method 1010M
Corrosivity (pH)	EPA Method 9045C
Reactivity	EPA Methods SW-846 7.3.3.2/9014 and SW-846 7.3.4.2/376.2

- Copies of the material shipping records associated with the disposal of the materials will be maintained by the Site owner and will be summarized in a closure report and in the annual property inspection reports to be completed by a qualified professional and submitted to RIDEM.

DRAFT



Appendix C – Contingency Plan

Parcel C, Former Gorham Manufacturing Property

425 Adelaide Avenue
Providence, Rhode Island

Prepared By: Vanasse Hangen Brustlin, Inc.
10 Dorrance Street, Suite 400
Providence, RI 02903

August 2010

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Emergency Hospital Route

Hazardous Substance Fact Sheet for Suspected Site Contaminants

Contingency Plan/Health and Safety Plan

Introduction

This Site-Specific Contingency Plan has been prepared by Vanasse Hangen Brustlin Inc. (VHB) for the sole and exclusive use by VHB personnel while working at the Former Gorham Manufacturing Property in Providence, Rhode Island (the Site). VHB's work at the Site is being conducted at the request of the Providence Redevelopment Authority. Use or reliance upon information provided in this Contingency Plan by any party other than VHB, shall be at the User's sole risk.

In preparing this Contingency Plan, VHB has obtained and relied upon information from multiple sources to form certain conclusions regarding potential environmental issues at and in the vicinity of the Site. Except as otherwise noted, no attempt has been made to verify the accuracy or completeness of such information.

In preparing this Contingency Plan, no attempt has been made to assess the compliance status of any past or present Owner or Operator of the Site with any federal, state, or local laws or regulations.

The guidance presented in this Contingency Plan is based solely upon information gathered to date. Should further environmental or other relevant information be developed at a later date, VHB may modify the report and its conclusions.

General Site Information

Site Name: Parcel C, Former location of
Gorham Manufacturing Property
425 Adelaide Avenue
Providence, Rhode Island
Plat 51 Lot 324

Table 1
Emergency Information and Local Resources Former Gorham Manufacturing,
Providence, Rhode Island

Public and Private Resources	Telephone Numbers
Ambulance	911
Memorial Hospital of Rhode Island	911 or (401) 729-2000
Providence Fire Department (Emergency)	911
Providence Police Department (Emergency)	911
Town Clerk	(401) 421-7740, x248 or 249
National Poison Control Center	800-682-9211
DIG SAFE Reporting Line	888-344-7233

Nearest Hospital: Rhode Island Hospital
593 Eddy Street
Providence, Rhode Island
Phone: 401-444-4000

Directions:

1. Start out going EAST on ADELAIDE AVE toward DOWNING ST
2. Stay STRAIGHT to go onto DOWNING ST
3. Turn LEFT onto ALVIN ST
4. Turn LEFT onto RESERVOIR AVE/RT-2
5. Turn RIGHT onto ADELAIDE AVE
6. Turn RIGHT onto BROAD ST/RI-117
7. Turn LEFT onto THURBERS AVE
8. Turn LEFT onto EDDY ST
9. Turn LEFT at 593 EDDY ST

Total Travel Mileage: 2.11 miles

Total Travel Time: 8 minutes

A map depicting the emergency hospital route is attached.

Site/Hazard Overview



Site Description and History

The Site is an approximately 5-acre parcel located at 425 Adelaide Avenue, Providence, RI. A Site Location Map is included as **Figure 1**. The Site is further identified by the Providence Tax Assessor's Office as Assessor's Plat 51, Lot 324.

The property has been owned by the Providence Redevelopment Authority since 1990 and has been vacant since that time. The Site is currently unimproved.

The property is listed as a portion of a "State Site" by RIDEM (Case No. 97-030) and a CERCLIS Site by the United States Environmental Protection Agency (USEPA) (USEPA ID RID982542318).

Regulatory Exceedances Summary

Soil at certain locations at the Site contains hazardous materials at concentrations that represent Method I exceedances as defined by the Remediation Regulations. Specifically, the following exceedances have been documented:

- Residential Direct Exposure Criteria –Metals and polycyclic aromatic hydrocarbons (PAHs).
- Industrial/Commercial Direct Exposure Criteria – Metals and PAHs.
- GB Leachability Criteria – none.
- Upper Concentration Limits – none.
- GB Groundwater Objectives – Volatile organic compounds (VOCs).

Tasks

VHB will document encapsulation of the impacted Site soil associated with the redevelopment of the property. The work will be conducted pursuant to VHB's Remedial Action Work Plan and the RIDEM Remedial Approval Letter.

Hazard Assessment

Hazards of Concern (Check as many as apply):

X Heat Stress	Oxygen Deficient	Radiological
X Cold Stress	X General Construction	Biological
Explosion/Flammable Confined Space	X Inorganic Chemicals Volatile Organic Chemicals	X Noise Corrosives
X Physical Hazards Other (Specify): Unknown		

The dangers that may be attributed to these hazards are discussed below.

Heat Stress

During the summer months, warm weather may become a health factor. Personnel working on-site may have to wear protective clothing and respirators, which would

increase the chance of workers suffering from heat-related problems. The situation will be monitored on days when the ambient temperature exceeds 70°F. Workers must be briefed on the signs and symptoms of heat-related problems and on preventive measures.

The three levels of Heat Stress are:

- Heat Cramps
- Heat Exhaustion
- Heat Stroke

Symptoms of heat cramps include painful muscle spasms. Treatment includes providing liquid with electrolytes.

Weakness, fatigue, dizziness, heavy sweating, headache, nausea, fainting and pale, cool moist skin are all symptoms of heat exhaustion. Treatment includes resting in a cool place and providing plenty of liquids with electrolytes if the person is conscious; if unconscious, get medical help immediately.

Symptoms of heat stroke are very dry, hot skin, mottled blue or red appearance, confusion, convulsions, rapidly rising temperature and unconsciousness. If any person experiences these symptoms get medical attention immediately. **Heat stroke is a life-threatening emergency.**

Cold Stress

During the winter months, cold weather may become a health factor. Personnel working on-site may have to wear protective clothing to protect themselves from wind and other cold weather exposures that may lead to hypothermia and frostbite. The situation will be monitored periodically on days when the ambient temperature is below 32° F, or when the local weather forecasting agencies suggest a wind chill factor of 32° F or lower. Workers must be briefed on the signs and symptoms of frostbite and on preventive measures if work is performed when the ambient temperature is below 32°.

Frostbite occurs when skin tissue and blood vessels are damaged from exposure to temperatures below 32 degrees Fahrenheit. It most commonly affects the toes, fingers, earlobes, chin, cheeks and nose, body parts that are often left uncovered in cold temperatures. Frostbite can occur gradually or rapidly. The speed with which the process progresses depends upon how cold or windy the temperature conditions are and the duration of exposure to those conditions.

Frostbite has three stages of progression:

- Frostnip
- Superficial Frostbite

➤ Deep Frostbite

Frostnip – In this stage, the individual experiences a pins and needles sensation with the skin turning very white and soft. No blistering occurs. This stage produces no permanent damage and may be reversed by soaking in warm water or breathing warm breath on the affected area.

Superficial Frostbite – In this stage, blistering may occur. The skin feels numb, waxy and frozen. Ice crystals form in the skin cells and the rest of the skin remains flexible.

Deep Frostbite – This is the most serious stage of frostbite. In this stage, blood vessels, muscles, tendons, nerves and bone may be frozen. This stage can lead to permanent damage, blood clots and gangrene, in severe cases. No feeling is experienced in the affected area and there is usually no blistering. Serious infection and loss of limbs frequently occurs after frostbite reaches this stage. However, even with deep frostbite, some frozen limbs may be saved if medical attention is obtained as soon as possible.

Frostbite risk can be reduced by practicing the following:

- Wear several layers of clothing when in extremely cold conditions since the air pockets between the layers will help to retain warmth.
- Limit the use of alcohol and smoking tobacco. Alcohol causes the blood to cool quickly and tobacco inhibits circulation to extremities.
- Avoid going outdoors during extremely cold weather.
- When outside, shield the face and other body parts from the cold wind and temperatures by wearing protective clothing, scarves, earmuffs, gloves, etc.
- Wear waterproof skin moisturizer on exposed areas.
- Do not spend extended periods in extreme temperatures when exhausted, or when wet.

If, after being in extremely cold conditions, any of the following are experienced, seek emergency care.

- Skin swelling
- Loss of limb function and absence of pain
- Drastic skin color changes
- Blisters
- Slurred speech
- Memory loss



Physical Hazards

The operation of heavy equipment poses hazards. Physical hazards may be associated with the malfunction, misuse, or improper operation of such equipment. Personnel not directly involved with equipment operation should stand a safe distance away from the machinery. **Personnel should wear hard-hats whenever**

working within established work zones. Personnel should be aware of these physical obstacles at all times and take the necessary precautions to avoid them while at the Site.

The Site may contain rough or unfamiliar terrain that can lead to injury. Slips, trips and falls are the most common accidents caused by varying terrain. These accidents may result in cuts, bruises, and sprains. Falls may result in broken bones. Carefully examine unfamiliar terrain. Look out for holes, undergrowth and open water. Avoid banks of rivers, creeks and ponds.

Wear boots with good ankle support and good traction. Wear long pants, long sleeved shirts and socks in the field. Do not wear shorts, tube tops, muscle shirts or sandals.



General Construction

The greatest potential hazard at most sites is related to the operation of heavy equipment, especially in the case of malfunction, misuse or improper operation. Personnel not directly involved with equipment operation should stand a safe distance away from the machinery. Personnel should wear hard-hats and steel toe boots when working near heavy equipment and any time there is a potential hazard from overhead or falling objects.



Inorganic Chemicals

Contaminants may be encountered in the form of soil dusts containing various metals (lead and arsenic). Care shall be taken not to disturb dusty areas during the site investigation. In the event that visible emissions are released during site activities, dust control in the form of water shall be sufficiently sprayed to reduce visible emissions.



Noise

Elevated noise levels may be encountered during the project due to construction equipment. Persons working in close proximity to construction equipment shall wear sufficient hearing protection. This equipment may include foam earplugs or foam earmuffs. Hand signals must be used for communication in these situations. Hand signals shall be established and practiced prior to donning protective hearing equipment.

Chemical Exposures

Table 3 summarizes the more toxic chemicals known or suspected to be present at the site, including the associated symptoms of acute exposure to such contaminants. Since additional unsuspected hazards may exist at the Site, periodic evaluation of site conditions will be performed during all on-site activities.

Table 3
Known and Suspect Chemical Contaminants, Gorham Property, Providence, Rhode Island

Chemical Contaminants	Potential Hazards	OSHA std. (8-Hour TWA)	NIOSH std. (8-Hour TWA)*
Arsenic	Toxic by inhalation, skin absorption, skin and/or eye contact and ingestion. Affects liver, kidneys, skin, lungs and lymphatic system.	0.010 mg/m ³	0.002 mg/m ³
Lead	Toxic by ingestion, inhalation and contact. Affects eyes, GI tract, CNS, kidneys, blood and gingival tissue.	0.05 mg/m ³	0.1 mg/m ³
PAHs	Toxic by inhalation and skin contact. May cause dermatitis, bronchitis and is a carcinogen. Affects respiratory system, skin, bladder and kidneys. Lung, kidney and skin cancer.	0.2 mg/m ³	0.1 mg/m ³

* See Appendix A and Appendix C (NIOSH Pocket Guide) for chemical properties and hazards. Minimize workplace exposure concentrations; limit number of workers exposed.

Symptoms of Chemical Exposure

On-site workers should be aware of the specific symptoms of acute chemical exposure listed in **Table 3**. In general, workers should also be aware of some indications of toxic effects of chemical exposure which are described below:

- Observable by others:
 - Changes in complexion, skin discoloration
 - Lack of coordination
 - Changes in demeanor
 - Papillary response
 - Changes in speech pattern
 - Difficulty breathing

- Non-observable by others:
 - Headaches
 - Dizziness
 - Blurred vision
 - Cramps
 - Irritation of eyes, skin, or respiratory tract
 - Nausea
 - Chills

■

First Aid

General first aid procedures for exposure include, but are not limited to, the following procedures:

- If contaminant contacts the eyes, irrigate immediately with large amounts of water;
- If contaminant contacts skin, wash with soap and water promptly;
- If contaminant is inhaled, move the exposed person to fresh air at once. If the worker's breathing has stopped, perform artificial respiration ONLY if appropriately trained and currently certified by the Red Cross or equivalent. Request appropriate medical attention as soon as possible by dialing 911.

On-site personnel shall keep a First-Aid kit at the Site during site assessment activities.

On-Site Control

A Site safety officer will be designated to coordinate access control to the work zone. No unauthorized personnel should enter the work zone to perform waste site cleanup activities without appropriate 40 hour OSHA site worker safety training. Control boundaries have been established as follows:

- Exclusion Zone: A 10-foot perimeter around the soil excavations will be treated as the Exclusion Zone. All equipment will be decontaminated in this zone prior to being transferred to the Support Zone.
- Contaminant Reduction Zone: A designated area outside of the Exclusion Zone will be treated as the Contaminant Reduction Zone.
- Support Zone: The remainder of the Site outside of the Contaminant Reduction Zone will be considered the Support Zone.

On-Site Personnel

Site Safety Officer:	<u>To be determined</u>
Regulatory Authority:	<u>RIDEM – Office of Waste Management 401-222-2797</u>
State Agency Reps.:	<u>RIDEM – Ashley Blauvelt</u>
Local Agency Reps.:	<u>N/A</u>
Contractors:	<u>To Be Determined</u>
PRA Contact:	<u>April Wolf</u>
Emergency Contact:	<u>To be determined</u>
Work party(ies) consisting of two people will perform tasks.	
Rescue Team (in entries to IDLH environment):	<u>N/A</u>
Decontamination Team:	<u>N/A</u>

Action Levels and Personnel Protection

The initial level of personnel protection will be Level D.

Level D personnel protection will include:

- Chemical-resistant or leather gloves.
- Boots/shoes, leather or chemical-resistant, steel toe and shank.
- Safety glasses or chemical splash goggles (optional unless required for specific job function).
- Hardhat.
- Hearing Protection.

Field monitoring action levels are presented in the following table.

Location	Action Level	Response
Work Area	10 ppm TVOC in the ambient air	Shut down operations and verify proper operation of equipment. Allow area to equilibrate with background air quality and then re-start operations. If conditions above 10 ppm persist, VHB personnel should leave the work area and the Project Manager should be contacted. It is possible that personnel may upgrade to level C
Work Area	10 mg/m3 particulate	Shut down operations and verify proper operation of equipment. Allow area to equilibrate with background air quality and then re-start operations. If conditions above 10 ppm persist, VHB personnel should leave the work area and the Project Manager should be contacted. It is possible that personnel may upgrade to level
Exclusion Zone	Any detection of TVOC in the ambient air	Modify work practices to minimize volatilization of contaminants
Exclusion Zone	5 ppm TVOC	Stop work until controls are identified that will reduce volatilization of contaminants. Do not restart work unless authorized by the project manager, department director, and/or the health and safety coordinator.

General Safety Requirements

All persons entering and/or working on the site shall follow the following General Safety Procedures:

- No employee or subcontractor may be allowed on-site without the prior knowledge and consent of the Site Safety Officer and review of these Health and Safety Procedures. All VHB personnel engaged in this project will sign the Health and Safety plan to acknowledge that they have read and understand the Health and Safety Plan.
- There will be no activities conducted on-site without sufficient backup personnel. At a minimum, two persons must be present at the site.
- All contractor or subcontractor personnel shall bring to the attention of the Site Safety Officer or Supervisors any unsafe condition or practice associated with the site activities that they are unable to correct themselves.
- There will be no smoking, eating, drinking, chewing gum or tobacco, or applying cosmetics in the restricted area.
- Hands shall be thoroughly cleaned prior to smoking, eating or other activities outside the restricted area.
- Team members must avoid unnecessary contamination (i.e., walking through known or suspected "hot" zones or contaminated puddles, kneeling or sitting on the ground, leaning against potentially contaminated barrels or equipment).
- Respiratory devices may not be worn with beards, long sideburns, or under other conditions that prevent a proper seal.
- No visitors will be allowed access without the knowledge and consent of the Site Contractor and/or Safety Officer. All visitors will be required to be briefed on safety procedures and will be required to be escorted while on-site.
- All excavations will be conducted in compliance with EPA/OSHA Standards. Excavation greater than four feet deep which require people to work in the excavation will have sides sloped no greater than 45° (1 to 1) or be shored pursuant to OSHA.

Personal Protective Equipment

Based on an evaluation of potential hazards, the following levels of personal protection have been designated for the applicable work areas or tasks.

Location	Job Function	Level of Protection				
Exclusion Zone	Groundwater Monitoring and Total Fluids Extraction	A	B	C	D	Other
Contaminant Reduction Zone	Decontamination	A	B	C	D	Other
Support Zone	Field Vehicle and Supplies	A	B	C	D	Other

■

Decontamination Procedures

All non-expendable equipment will be cleaned according to Standard Operating Protocols. This protocol includes:

- Rinse with tap water
- Wash with Alconox detergent (or soap) and water
- Rinse with distilled or tap water

The decontamination procedure for Level D requires the disposal of gloves, tyvek suits (if used), and boot covers (if used) in plastic lined containers on-site. All non-disposal equipment used on-site that becomes contaminated will be cleaned by the protocol referenced above.

Emergency Medical Care

The following are qualified on-site First Aid Responders and/or EMTs: None

First Aid equipment is available on-site at the following locations:

First Aid Kit: Located in field vehicle

Emergency EyeWash: Water is kept in the field vehicle

Emergency Shower: Water is kept in the field vehicle

Other (Specify): _____

Site Resource(s) and Locations:

Water Supply: Water supplies are available at Site building.

Telephones: Portable telephone in field vehicle

Communication Systems: mobile telephone

Other: _____

Emergency Procedures

On-site personnel will use the following standard emergency procedures. These procedures may be modified as appropriate and required for each incident. The Site

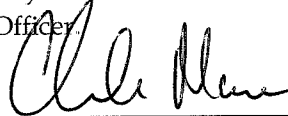
Safety Officer will be notified of any on-site emergencies and will be responsible for ensuring that the appropriate procedures are followed.

- **Fire/Explosion:** The fire department will be notified and all personnel moved to a safe distance from the involved area.
- **Personal Protective Equipment Failure:** If any site worker experiences a failure or malfunction of personal protective equipment that adversely affects the protection factor, that person and his/her buddy will immediately leave the Exclusion Zone. Re-entry will not be permitted until the equipment has been repaired or replaced.
- **Other Equipment Failure:** If any other equipment on-site fails to operate properly, the Site Manager and Site Safety Officer will be notified and will then evaluate the effect of such failure on continuing operations. If the failure affects personnel safety or prevents completion of the investigation activities, all personnel will leave the Exclusion Zone until the situation is remedied through appropriate action(s).

Signature Page

I have read, understood, and agree to comply with the provisions set forth in this Site-specific Health and Safety Plan and as reviewed in the Health and Safety Briefing by the Site Safety Officer.

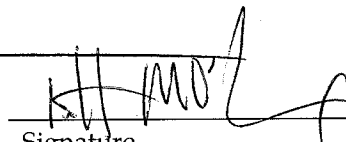
Claude Masse
Site Safety Officer


Signature

8/26/10
Date

Approved By:

Timothy O'Connor, PE
Project Manager


Signature

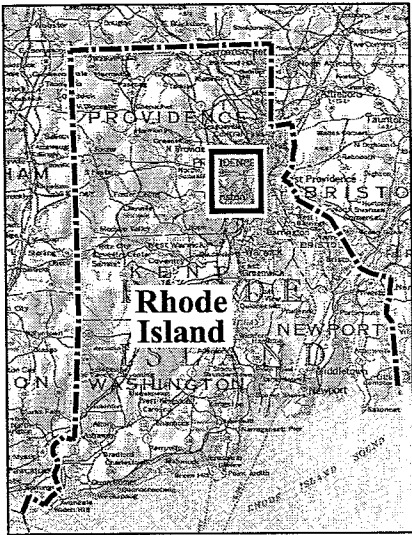
8/26/10
Date

VHB Site Personnel

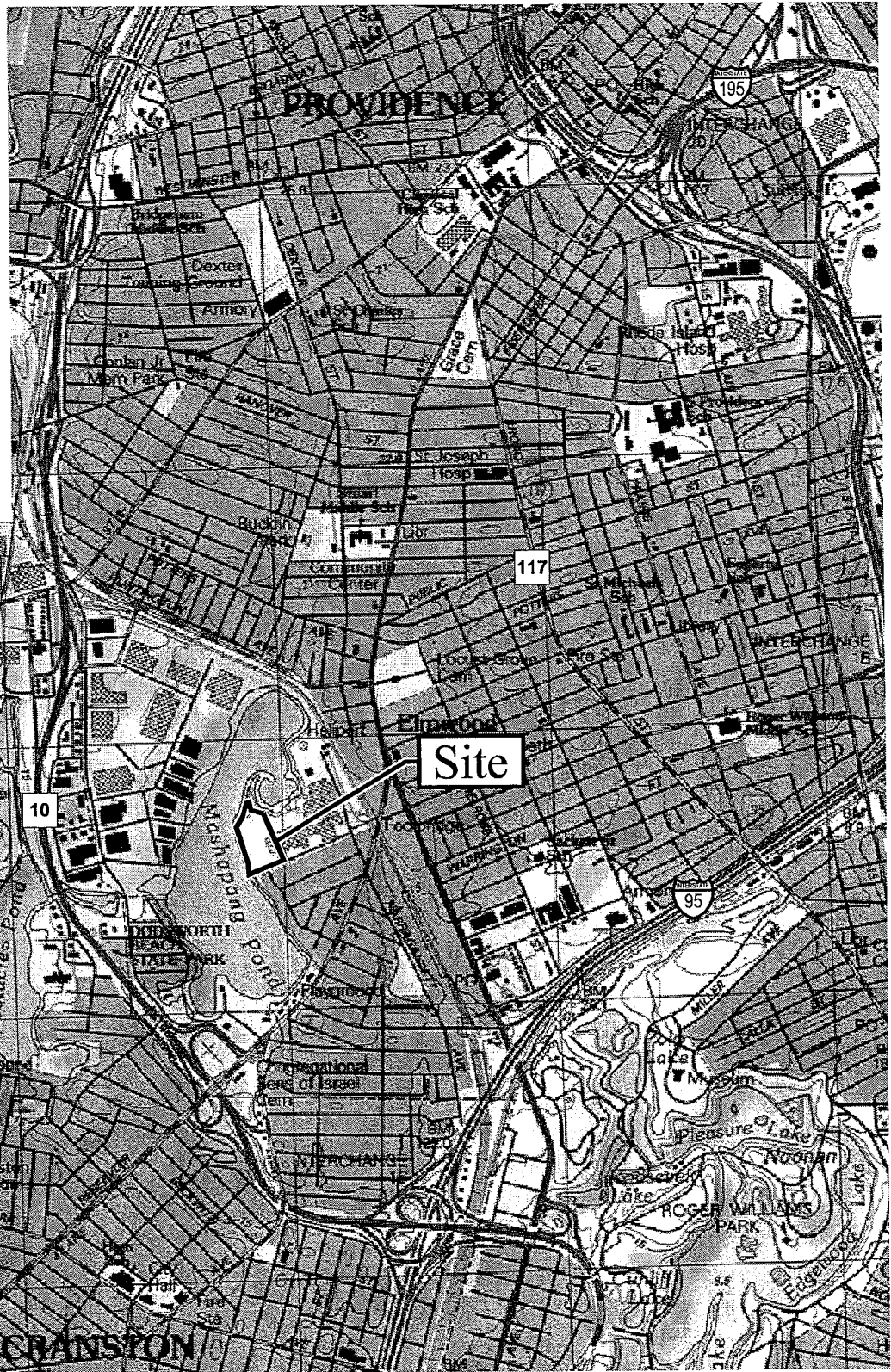
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Figures



Site Location Key



Source: USGS Quadrangles

Vanasse Hangen Brustlin, Inc.



Site Location Map
Adelaide Avenue
Providence, Rhode Island

Figure 1



Emergency Hospital Route



MAPQUEST.

Notes

Trip to Rhode Island Hospital

593 Eddy St, Providence, RI 02903 - (401)

444-4000

2.11 miles - about 8 minutes



333 Adelaide Ave, Providence, RI 02907-3366



1. Start out going **EAST** on **ADELAIDE AVE** toward **DOWNING ST.**

go 0.0 mi



2. Stay **STRAIGHT** to go onto **DOWNING ST.**

go 0.0 mi



3. Turn **LEFT** onto **ALVIN ST.**

go 0.0 mi



4. Turn **LEFT** onto **RESERVOIR AVE / RI-2.**

go 0.0 mi



5. Turn **RIGHT** onto **ADELAIDE AVE.**

go 0.6 mi



6. Turn **RIGHT** onto **BROAD ST / RI-117.**

go 0.0 mi



7. Turn **LEFT** onto **THURBERS AVE.**

go 0.5 mi



8. Turn **LEFT** onto **EDDY ST.**

go 0.8 mi



9. **593 EDDY ST.**

go 0.0 mi

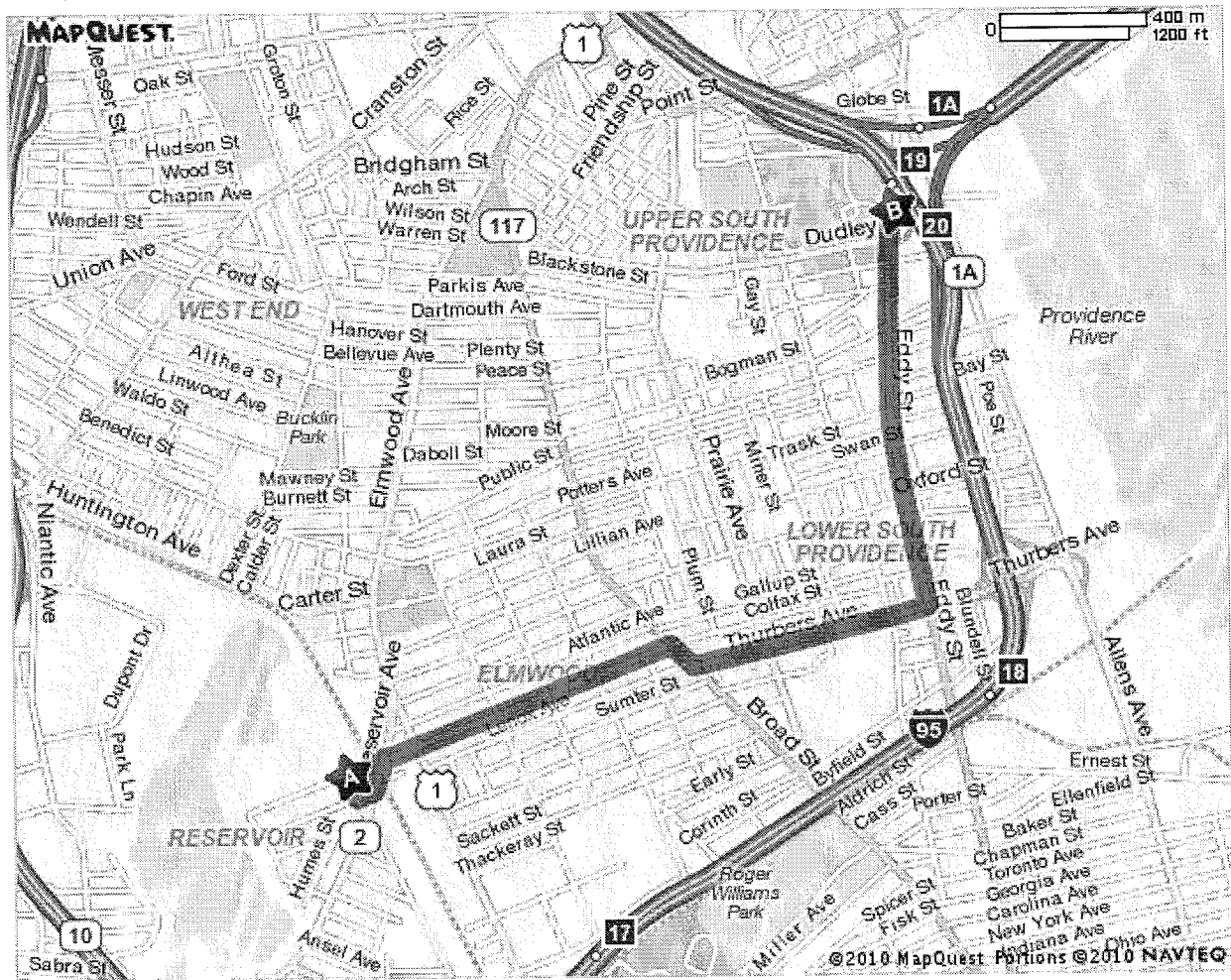


Rhode Island Hospital - (401) 444-4000

593 Eddy St, Providence, RI 02903

Total Travel Estimate : 2.11 miles - about 8 minutes

Route Map [Hide](#)



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Hazardous Substance Fact Sheets for Suspected Site Contaminants



September 2005

NIOSH Publication Number 2005-149

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Arsenic (inorganic compounds, as As)					
Synonyms & Trade Names Arsenic metal: Arsenia Other synonyms vary depending upon the specific As compound. [Note: OSHA considers "Inorganic Arsenic" to mean copper acetoarsenic and all inorganic compounds containing arsenic except ARSINE.]					
CAS No. 7440-38-2 (metal)		RTECS No. CG0525000 (metal) (/niosh-rtecs/CG802C8.html)		DOT ID & Guide 1558 152 ☞ (http://wwwapps.tc.gc.ca/saf-sec-sur/3/erg-gmu/erg/guidepage.aspx?guide=152) (metal) 1562 152 ☞ (http://wwwapps.tc.gc.ca/saf-sec-sur/3/erg-gmu/erg/guidepage.aspx?guide=152) (dust)	
Formula As (metal)		Conversion		IDLH Ca [5 mg/m³ (as As)] See: 7440382 (/niosh/idlh/7440382.html)	
Exposure Limits NIOSH REL : Ca C 0.002 mg/m ³ [15-minute] See Appendix A (nengapdx.html) OSHA PEL : [1910.1018] TWA 0.010 mg/m ³			Measurement Methods NIOSH 7300 ☞ (/niosh/docs/2003-154/pdfs/7300.pdf), 7301 ☞ (/niosh/docs/2003-154/pdfs/7301.pdf), 7303 ☞ (/niosh/docs/2003-154/pdfs/7303.pdf), 7900 ☞ (/niosh/docs/2003-154/pdfs/7900.pdf), 9102 ☞ (/niosh/docs/2003-154/pdfs/9102.pdf); OSHA ID105 ☞ (http://www.osha.gov/dts/sltc/methods/inorganic/id105/id105.html) See: NMAM (/niosh/docs/2003-154/) or OSHA Methods ☞ (http://www.osha.gov/dts/sltc/methods/index.html)		
Physical Description Metal: Silver-gray or tin-white, brittle, odorless solid.					
MW: 74.9	BP: Sublimes	MLT: 1135°F (Sublimes)	Sol: Insoluble	VP: 0 mmHg (approx)	IP: NA
Sp.Gr: 5.73 (metal)	FLP: NA	UEL: NA	LEL: NA		
Metal: Noncombustible Solid in bulk form, but a slight explosion hazard in the form of dust when exposed to flame.					
Incompatibilities & Reactivities Strong oxidizers, bromine azide [Note: Hydrogen gas can react with inorganic arsenic to form the highly toxic gas arsine.]					
Exposure Routes inhalation, skin absorption, skin and/or eye contact, ingestion					
Symptoms Ulceration of nasal septum, dermatitis, gastrointestinal disturbances, peripheral neuropathy, resp irritation, hyperpigmentation of skin, [potential occupational carcinogen]					
Target Organs Liver, kidneys, skin, lungs, lymphatic system					
Cancer Site [lung & lymphatic cancer]					
Personal Protection/Sanitation (See protection codes (protect.html))			First Aid (See procedures (firstaid.html)) Eye: Irrigate immediately		

Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: When contaminated/Daily
Remove: When wet or contaminated
Change: Daily
Provide: Eyewash, Quick drench

Skin: Soap wash immediately
Breathing: Respiratory support
Swallow: Medical attention immediately

Respirator Recommendations
(See Appendix E) ([nengapdx.html](#))

NIOSH

At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted acid gas canister having an N100, R100, or P100 filter.

[Click here \(pgintrod.html#nrp\)](#) for information on selection of N, R, or P filters.
Any appropriate escape-type, self-contained breathing apparatus

[Important additional information about respirator selection \(pgintrod.html#mustread\)](#)

See also: [INTRODUCTION \(/niosh/npg/pgintrod.html\)](#)

Page last reviewed: February 3, 2009

Page last updated: February 3, 2009

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Lead

Synonyms & Trade Names **Lead metal, Plumbum**

CAS No. 7439-92-1	RTECS No. OF7525000 (/niosh-rtecs/OF72D288.html)	DOT ID & Guide
Formula Pb	Conversion	IDLH 100 mg/m³ (as Pb) See: 7439921 (/niosh/idlh/7439921.html)

Exposure Limits

NIOSH REL *: TWA (8-hour) 0.050 mg/m³ See [Appendix C \(nengapdxc.html\)](#) [*Note: The REL also applies to other lead compounds (as Pb) -- see Appendix C.]

OSHA PEL *: [1910.1025] TWA 0.050 mg/m³ See [Appendix C \(nengapdxc.html\)](#) [*Note: The PEL also applies to other lead compounds (as Pb) -- see Appendix C.]

Measurement Methods

NIOSH 7082 (/niosh/docs/2003-154/pdf (/niosh/docs/2003-154/pdfs/7105.pdf), **7300** (/niosh/docs/2003-154/pdfs/7300.pdf), **7301** (/niosh/docs/2003-154/pdfs/7301.pdf), **7303** (/niosh/docs/2003-154/pdfs/7303.pdf), **7700** (/niosh/docs/2003-154/pdfs/7700.pdf), **7701** (/niosh/docs/2003-154/pdfs/7701.pdf), **7702** (/niosh/docs/2003-154/pdfs/7702.pdf), **9100** (/niosh/docs/2003-154/pdfs/9100.pdf), **9102** (/niosh/docs/2003-154/pdfs/9102.pdf), **9105** (/niosh/docs/2003-154/pdfs/9105.pdf);

OSHA ID121 (<http://www.osha.gov/dts/sltc/methods/inorgaID121>)
ID125G (<http://www.osha.gov/dts/sltc/methods/inorgaID125G>)
ID206 (<http://www.osha.gov/dts/sltc/methods/inorgaID206>)
See: **NMAM** (/niosh/docs/2003-154/) or **OSI** (<http://www.osha.gov/dts/sltc/methods/index>).

Physical Description **A heavy, ductile, soft, gray solid.**

MW: 207.2	BP: 3164° F	MLT: 621°F	Sol: Insoluble	VP: 0 mmHg (approx)
Sp.Gr: 11.34	FLP: NA	UEL: NA	LEL: NA	

Noncombustible Solid in bulk form.

Incompatibilities & Reactivities Strong oxidizers, hydrogen peroxide, acids

Exposure Routes inhalation, ingestion, skin and/or eye contact

Symptoms lassitude (weakness, exhaustion), insomnia; facial pallor; anorexia, weight loss, maln abdominal pain, colic; anemia; gingival lead line; tremor; paralysis wrist, ankles; encephalopat irritation eyes; hypertension

Target Organs Eyes, gastrointestinal tract, central nervous system, kidneys, blood, gingival tissue

Personal Protection/Sanitation (See protection codes (protect.html)) Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: Daily Remove: When wet or contaminated Change: Daily	First Aid (See procedures (firstaid.html)) Eye: Irrigate immediately Skin: Soap flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
---	--

Respirator Recommendations
 (See Appendix E) ([nengapdx.html](#))
NIOSH/OSHA

Up to 0.5 mg/m³:
 (APF = 10) Any air-purifying respirator with an N100, R100, or P100 filter (including N100, R facepieces) except quarter-mask respirators.
[Click here \(pgintrod.html#nrp\)](#) for information on selection of N, R, or P filters.
 (APF = 10) Any supplied-air respirator

Up to 1.25 mg/m³:
 (APF = 25) Any supplied-air respirator operated in a continuous-flow mode
 (APF = 25) Any powered, air-purifying respirator with a high-efficiency particulate filter.

Up to 2.5 mg/m³:
 (APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.
[Click here \(pgintrod.html#nrp\)](#) for information on selection of N, R, or P filters.
 (APF = 50) Any supplied-air respirator that has a tight-fitting facepiece and is operated in a co
 (APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece and a high-
 (APF = 50) Any self-contained breathing apparatus with a full facepiece
 (APF = 50) Any supplied-air respirator with a full facepiece

Up to 50 mg/m³:
 (APF = 1000) Any supplied-air respirator operated in a pressure-demand or other positive-pre

Up to 100 mg/m³:

(APF = 2000) Any supplied-air respirator that has a full facepiece and is operated in a pressurized positive-pressure mode

Emergency or planned entry into unknown concentrations or IDLH conditions:

(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in demand or other positive-pressure mode

(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressurized positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:

(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.

[Click here \(pgintrod.html#nrp\)](#) for information on selection of N, R, or P filters.

Any appropriate escape-type, self-contained breathing apparatus

[Important additional information about respirator selection \(pgintrod.html#mustread\)](#)

See also: [INTRODUCTION \(/niosh/npg/pgintrod.html\)](#) See ICSC CARD: [0052 \(/niosh/ipcsneng/0052.html\)](#)
[MEDICAL TESTS: 0127 \(/niosh/docs/2005-110/nmedo127.html\)](#)

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Page last updated: February 3, 2009

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Coal tar pitch volatiles

Synonyms & Trade Names Synonyms vary depending upon the specific compound (e.g., pyrene, phenanthrene, acridine, chrysene, anthracene & benzo(a)pyrene). [Note: NIOSH considers coal tar, coal tar pitch, and creosote to be coal tar products.]

CAS No. 65996-93-2	RTECS No. GF8655000 (/niosh-rtecs/GF841098.html)	DOT ID & Guide 2713 153 ↗ (http://wwwapps.tc.gc.ca/saf-sec-sur/3/erg-gmu/erg/guidepage.aspx?guide=153) (acridine)
--------------------	--	--

Conversion	IDLH Ca [80 mg/m ³] See: 65996932 (/niosh/idlh/65996932.html)
------------	--

<p>Exposure Limits</p> <p>NIOSH REL : Ca TWA 0.1 mg/m³ (cyclohexane-extractable fraction) See Appendix A (nengapdx.html) See Appendix C (nengapdx.html)</p> <p>OSHA PEL : TWA 0.2 mg/m³ (benzene-soluble fraction) [1910.1002] See Appendix C (nengapdx.html)</p>	<p>Measurement Methods</p> <p>OSHA 58 ↗ (http://www.osha.gov/dts/sltc/methods/organic/org058/org058.html) See: NMAM (/niosh/docs/2003-154/) or OSHA Methods ↗ (http://www.osha.gov/dts/sltc/methods/index.html)</p>
--	---

Physical Description Black or dark-brown amorphous residue.

Properties vary depending upon the specific compound.				
---	--	--	--	--

Combustible Solids

Incompatibilities & Reactivities Strong oxidizers

Exposure Routes inhalation, skin and/or eye contact

Symptoms dermatitis, bronchitis, [potential occupational carcinogen]

Target Organs respiratory system, skin, bladder, kidneys	
Cancer Site [lung, kidney & skin cancer]	
Personal Protection/Sanitation (See protection codes (protect.html)) Skin: Prevent skin contact Eyes: Prevent eye contact Wash skin: Daily Remove: No recommendation Change: Daily	First Aid (See procedures (firstaid.html)) Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
Respirator Recommendations NIOSH At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration: (APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode (APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus Escape: (APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister having an N100, R100, or P100 filter. Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters. Any appropriate escape-type, self-contained breathing apparatus <u>Important additional information about respirator selection (pgintrod.html#mustread)</u>	
See also: INTRODUCTION (/niosh/npg/pgintrod.html) See ICSC CARD: 1415 (/niosh/ipcsneng/neng1415.html) See MEDICAL TESTS: 0054 (/niosh/docs/2005-110/nmed0054.html)	

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Appendix D – Operation Log Template

Parcel C, Former Gorham Manufacturing Property
425 Adelaide Avenue, Providence, Rhode Island
DAILY OPERATIONS LOG SUMMARY

NAME:

WEATHER:

DATE & TIME:

WIND:

GENERAL CONSTRUCTION ACTIVITY:

-

EARTHWORK ACTIVITY:

-

SOIL AND EROSION MONITORING:

-

DUST MONITORING:

-

HEALTH AND SAFETY MONITORING:

-

CONVERSATION NOTES:

-