



Wannalancit Mills
650 Suffolk Street
Lowell, MA 01854

978.970.5600 PHONE
978.453.1995 FAX

www.TRCSolutions.com

TRC Project Number: 115058

June 2, 2009

Massachusetts Department of Environmental Protection
Southeast Regional Office
20 Riverside Drive
Lakeville, Massachusetts 02347

RE: Immediate Response Action (IRA) Completion Report and Imminent Hazard Evaluation – HH-13 Area Arsenic and Chromium Impacted Surface Soil
New Bedford High School
Parker and Hunter Streets, New Bedford, Massachusetts
Release Tracking Number (RTN) 4-21872

To Whom It May Concern:

Consistent with the requirements of the Massachusetts Contingency Plan (MCP; 310 CMR 40.0000), specifically 310 CMR 40.0427, attached please find an Immediate Response Action (IRA) Completion Report for the above-referenced IRA condition in New Bedford, Massachusetts.

If you have any questions concerning the IRA Completion Report or transmittal forms, please do not hesitate to contact me at 978-656-3565 or via e-mail at dsullivan@trcsolutions.com.

Sincerely,

David M. Sullivan, LSP, CHMM
Senior Project Manager

Attachment

cc. D. Fredette, S. Alfonse; Department of Environmental Stewardship
M. Cote, G. Martin; MassDEP Southeast Regional Office



IMMEDIATE RESPONSE ACTION COMPLETION REPORT AND IMMINENT HAZARD EVALUATION

HH-13 Area Arsenic and Chromium Impacted Surface Soil

New Bedford High School
230 Hathaway Boulevard
New Bedford, Massachusetts
Release Tracking Number (RTN) 4-21872

Prepared for:

Department of Environmental Stewardship
City of New Bedford
133 William Street
New Bedford, Massachusetts 02740

Prepared by:

TRC Environmental Corporation
Wannalancit Mills
650 Suffolk Street
Lowell, Massachusetts 01854
(978) 970-5600

June 2009

**Immediate Response Action Completion Report
and
Imminent Hazard Evaluation**

HH-13 Area Arsenic and Chromium Impacted Surface Soil

New Bedford High School
Parker and Hunter Streets
New Bedford, Massachusetts

Release Tracking Number (RTN) 4-21872

TRC Project Number: 115058

May 27, 2009

TRC Environmental Corporation (TRC) is submitting this Immediate Response Action (IRA) Completion Report to the Massachusetts Department of Environmental Protection (MassDEP) on behalf of the City of New Bedford (City). This IRA Completion Report addresses the detection of arsenic and chromium in surface soil at a spot location identified as HH-13 near the A-Block of the New Bedford High School (NBHS) grounds (the Site) in concentrations indicating a condition that could pose an Imminent Hazard (IH) as defined in 310 CMR 40.0321(2)(b) of the Massachusetts Contingency Plan (MCP). The potential IH condition is associated with the compound, concentration, depth below surface, proximity to a school or residential dwelling, and accessibility of the soil samples containing arsenic and total chromium above the potential IH evaluation threshold. The potential IH condition triggered a 2-hour regulatory reporting obligation to the MassDEP in accordance with 310 CMR 40.0321(2) (b) and 310 CMR 40.0311(7). TRC reported the condition to MassDEP via telephone on April, 2, 2009. MassDEP orally approved IRA assessment activities and assigned Release Tracking Number (RTN) 4-21872.

This IRA Completion Report is organized as follows: Section I (Background) briefly summarizes information on TRC's involvement with the Site and the circumstances associated with the detection of the release condition; Section II (IRA Completion Report) provides the information required for an IRA Completion Report under the MCP, specifically 310 CMR 40.0427; Section III (References) lists information sources relied upon in the preparation of this IRA Completion Report. In addition, Attachment A provides an Imminent Hazard Evaluation, Attachment B contains public notification letters, Attachment C contains soil boring logs, and Attachment D contains copies of relevant laboratory reports.

I. BACKGROUND

Introduction

In December 2004, soil sampling was conducted at NBHS located at 230 Hathaway Boulevard in New Bedford, Massachusetts (Figure 1) by BETA Group, Incorporated of Norwood,

Massachusetts (BETA) as part of an investigation of the Parker Street Waste Site (PSWS; RTN 4-15685), which includes the NBHS campus. The results of this soil sampling were examined by TRC as a part of ongoing environmental investigations of the PSWS. Soil sample results for soil boring HH-13 (1.5 to 3 feet below ground surface [bgs]) indicated concentrations of polyaromatic hydrocarbons (PAHs; specifically benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, indeno(1,2,3-cd)pyrene, naphthalene, and phenanthrene) and metals (i.e., arsenic, barium, cadmium, total chromium, and lead) at concentrations in excess of applicable S-1 Method 1 soil cleanup standards. TRC conducted additional soil sampling to further characterize/delineate soil contamination in this area to support remedial planning.

Summary of Work

TRC's environmental investigation consisted of direct push soil borings using a truck-mounted drill rig to sample soil and observe subsurface soil conditions. Drilling services and equipment were provided by New England Geotech, LLC of Jamestown, Rhode Island. Surface soil samples were also collected by TRC using hand tools as part of the IRA Assessment Activities.

On March 11, 2009, delineation sampling of four "inner ring" soil borings within ten feet of the original HH-13 sampling location to the northwest, southwest, southeast, and northeast (designated HH-13A through HH-13D) was conducted. Four "outer ring" borings were also drilled approximately twenty feet from the original HH-13 sampling location (designated HH-13E through HH-13H). The inner and outer "ring" borings are illustrated on Figure 2, and soil boring logs are included as Attachment C. TRC collected soil samples from each of the eight locations from 0 to 1 foot bgs to assess the extent of the potential IH condition and to support the preparation of an IH evaluation. Data collected from additional depth intervals (e.g., 1-3 feet bgs) and soil samples collected in the area of HH-13 will be included in additional comprehensive response action reports for the PSWS.

TRC initially authorized the laboratory to proceed with the analysis of the four "inner ring" soil samples for PAH, total PCBs, and selected metals (arsenic, barium, cadmium, total chromium, and lead) analyses as part of the characterization/delineation effort to support remedial planning. The laboratory was instructed to hold the "outer ring" soil samples pending "inner ring" analytical results. Based on the results of the "inner ring" samples, TRC instructed the laboratory to proceed with the analysis of the four "outer ring" samples for the same metals suite as the "inner ring" samples.

Con-Test Analytical Laboratory (Contest) of East Longmeadow, Massachusetts conducted PAH and metals analyses. Northeast Analytical Laboratories (NEA) of Schenectady, New York conducted PCB analysis.

Initial metals results indicated concentrations of arsenic (40 milligrams per kilogram [mg/kg]) and total chromium (1,960 mg/kg) in the top foot of soil at soil sampling location HH-13B. These concentrations equal (in the case of arsenic) or exceed (in the case of total chromium) the threshold concentrations for a condition that "could pose" an Imminent Hazard (310 CMR 0321[2] [b]). The potential IH threshold value for chromium (200 mg/kg within 1 foot of

surface) is based on the more toxic hexavalent form of chromium. In the absence of hexavalent chromium speciation data, the speciation threshold applies to total chromium. Therefore, on April 10, 2009, TRC collected four soil samples from 0 to 1 foot below ground surface in the area of HH-13B (see Figure 2) to assess the type of chromium in the soil (sample designations SS-HH-13-B1,-B2,-B3, and -B4. These soil samples were collected using hand tools and were analyzed for total chromium, hexavalent chromium, pH and oxidation reduction potential (ORP).

Summary of Analytical Results Indicating a Potential Imminent Hazard

The results of laboratory analysis of soil samples collected from the area immediately to the north of House #2 of the NBHS in March and April 2009 are summarized in Tables 1 and 2.

Arsenic- One soil sample collected (HH-13B [0-1]) contained a concentration equal to the MassDEP threshold for arsenic that could pose an IH of 40 mg/kg in the top twelve inches of soil (310 CMR 40.0321[2][b]).

Chromium- One soil sample collected (HH-13B[0-1]) contained a concentration of chromium (1,960 mg/kg) above the MassDEP threshold for chromium that could pose an IH of 200 mg/kg in the top twelve inches of soil (310 CMR 40.0321[2][b]).

None of the remaining soil samples in this area had concentrations at or above the MassDEP threshold that could pose an IH per 310 CMR 40.0321 (2)(b).

II. IRA COMPLETION REPORT (310 CMR 40.0424)

This IRA Completion Report is organized according to the information needs set forth under 310 CMR 40.0427(4)(a) through (f) of the MCP.

(a) Description of Release, Threat of Release, Site Conditions, and Surrounding Receptors

Description of Release/Threat of Release

The condition that could pose an IH at the Site was identified on April 2, 2009 for the detection of arsenic at 40 mg/kg and chromium above 200 mg/kg in surface soil (0 to 1 feet in depth) to the north of House #2 at the NBHS. The elevated arsenic and chromium concentrations appear to be related to the PSWS. TRC has performed an IH evaluation, which is provided in Attachment A.

Site Conditions

The area of concern is located to the north of House #2 at NBHS. This area may be accessed by students, staff and child and adult visitors at the high school. The area is vegetated and periodically maintained by mowing. For the purposes of this IH evaluation, exposures are assumed to occur to a young child for one hour a day, five days a week, for 24 weeks.

Surrounding Receptors

The condition that could pose an IH per 310 CMR 40.0321(2)(b) was detected in surface soil on a school property and within 500 feet of recreation areas.

Groundwater categories at NBHS include actual or potential GW-2, depending upon proximity to occupied structures (groundwater is less than 15 feet below ground surface based on data from nearby locations), and GW-3 (applies to all groundwater throughout the state). However, groundwater impacts from metal contaminants associated with this area at NBHS are not expected. For example, recent groundwater monitoring conducted at the MW-HH-13 on April 23, 2009 did not detect site contaminants above groundwater standards or MCP Reportable Concentrations (RCs). These results are presented on Table 2.

Based on review of on-line MassDEP Priority Resource Map data available from Massachusetts Geographic Information System (MassGIS), the Site is not located with a Current or Potential Drinking Water Source Area (MassGIS, 2008).

NBHS is not located in a wetland resource area. No other documented sensitive ecological receptor areas (e.g., Areas of Critical Environmental Concern [ACECs]) are known to be located at or near the release Site.

(b) Description of any Immediate Response Actions Undertaken to Date at the Site

At the time of oral notification, MassDEP approved the following response action as an IRA:

- Additional assessment

See Section I (Background) for a description of data collection activities conducted to date by TRC. Also, an IH evaluation was initiated within 14 days of obtaining knowledge of the potential IH condition, which is provided in Attachment A. TRC's risk assessment specialist conducted the IH calculations using an Upper Confidence Limit (UCL) on the arithmetic mean as the Exposure Point Concentration (EPC) for arsenic, and the maximum detected concentration as the EPC for chromium. The IH calculations also assume that all chromium is entirely present as chromium (VI). This is a conservative approach since soil sampling conducted around HH-13B (e.g., SSHH-13B1, SSHH-13B2, SSHH-13B3, and SSHH-13B4) indicated that the chromium detected at HH-13 is present in the less toxic trivalent form.

TRC performed the IH analysis on August 14, 2009, satisfying the IH evaluation initiation timeline under the MCP. The risk assessment calculations indicate that no IH condition exists at the HH-13 area of the NBHS campus.

Please see Attachment A (Imminent Hazard Evaluation Summary) for additional details.

(c) Statement of IRA Findings and Conclusions

The estimated cancer risk and noncarcinogenic hazard for the young child recreational user do not exceed the MCP risk limits for an IH of an excess lifetime cancer risk (ELCR) of 1E-05 or a hazard index (HI) of 10.

(d) Management of Remediation Waste, Remedial Waste Water, and/or Remedial Additives

No remediation waste or remedial waste water has been generated, and no remedial additives were used.

(e) Ongoing Activities

The objective of this IRA was to assess and delineate the potential IH condition. This work has been completed.

The condition that could pose an IH and gave rise to the IRA was determined to not present an IH based on conservative calculations discussed herein. The diagnosis, remedy, and closure of the release condition will be addressed as part of the comprehensive response actions for the PSWS under Special Project status and in accordance with the MCP. The Site will also be linked under RTN 4-15685 and become folded into the Special Project.

Future activities planned to be implemented at the Site include the following:

- As needed delineation of the area of impacted soil to support remedial design.

(f) Such Other Information that the Department May Deem Appropriate and Necessary

See Attachment A for the Imminent Hazard Evaluation. See Attachment D for the results of laboratory analyses from TRC's investigation of the HH-13 area.

Public Involvement

As required by 310 CMR 40.1403(3)(b) and (c), the Mayor and the Board of Health for the City of New Bedford have been notified of the IRA activities and the availability of this IRA Completion Statement. Copies of the notification letters sent to the Mayor and Board of Health are provided in Appendix B.

III. REFERENCES USED TO PREPARE THIS IRA PLAN

MassGIS 2008 Massachusetts Geographic Information System (MassGIS), On-line MassDEP Priority Resource Map. Accessed May 21, 2009.
<http://maps.massgis.state.ma.us/21e/viewer.htm>

TABLES

Table 1
Summary of Analytical Results for Surface Soil Samples - 2004 and 2009
New Bedford High School HH-13 Area
New Bedford, Massachusetts

| Analysis | Analyte | Sample Location: | | | | | HH13 | HH-13A | HH-13B | HH-13C | HH-13D | HH-13E | HH-13F | HH-13G | HH-13H | SSHH-13B1 | | SSHH-13B2 | SSHH-13B3 | SSHH-13B4 | |
|---------------------------------|------------------------|---------------------|----------|----------|----------|----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----|
| | | Sample Depth (ft.): | | | | | 1.5-3 | 0-1 | 0-1 | 0-1 | 0-1 | 0-1 | 0-1 | 0-1 | 0-1 | 0-1 | 0-1 | 0-1 | 0-1 | 0-1 | |
| | | S-1/GW-2 | S-1/GW-3 | S-2/GW-2 | S-2/GW-3 | RC S-1** | 12/29/2004 | 3/11/2009 | 3/11/2009 | 3/11/2009 | 3/11/2009 | 3/11/2009 | 3/11/2009 | 3/11/2009 | 3/11/2009 | 4/10/2009 | 4/10/2009 | 4/10/2009 | 4/10/2009 | 4/10/2009 | |
| PAHs (mg/kg) | Dibenzofuran | 10^ | 10^ | NS | NS | 100 | 28 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| | 2-Methylnaphthalene | 80 | 300 | 80 | 500 | 0.7 | 17 | 0.196 U | 0.222 U | 0.193 U | 0.192 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | Acenaphthene | 1,000 | 1,000 | 3,000 | 3,000 | 4 | 46 | 0.196 U | 0.222 U | 0.193 U | 0.192 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | Acenaphthylene | 600 | 10 | 600 | 10 | 1 | 13 U | 0.196 U | 0.222 U | 0.193 U | 0.192 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | Anthracene | 1,000 | 1,000 | 3,000 | 3,000 | 1,000 | 150 | 0.196 U | 0.294 | 0.193 U | 0.192 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | Benzo(a)anthracene | 7 | 7 | 40 | 40 | 7 | 400 | 0.196 U | 0.621 | 0.193 U | 0.192 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | Benzo(a)pyrene | 2 | 2 | 4 | 4 | 2 | 360 | 0.196 U | 0.528 | 0.193 U | 0.192 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | Benzo(b)fluoranthene | 7 | 7 | 40 | 40 | 7 | 460 | 0.196 U | 0.672 | 0.193 U | 0.192 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | Benzo(g,h,i)perylene | 1,000 | 1,000 | 3,000 | 3,000 | 1,000 | 140 | 0.196 U | 0.281 | 0.193 U | 0.192 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | Benzo(k)fluoranthene | 70 | 70 | 400 | 400 | 70 | 200 | 0.196 U | 0.250 | 0.193 U | 0.192 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | Chrysene | 70 | 70 | 400 | 400 | 70 | 280 | 0.196 U | 0.621 | 0.193 U | 0.192 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | Dibenz(a,h)anthracene | 0.7 | 0.7 | 4 | 4 | 0.7 | 13 U | 0.196 U | 0.222 U | 0.193 U | 0.192 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | Fluoranthene | 1,000 | 1,000 | 3,000 | 3,000 | 1,000 | 790 | 0.196 U | 1.09 | 0.193 U | 0.192 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | Fluorene | 1,000 | 1,000 | 3,000 | 3,000 | 1,000 | 46 | 0.196 U | 0.222 U | 0.193 U | 0.192 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | Indeno(1,2,3-cd)pyrene | 7 | 7 | 40 | 40 | 7 | 140 | 0.196 U | 0.341 | 0.193 U | 0.192 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | Naphthalene | 40 | 500 | 40 | 1,000 | 4 | 53 | 0.196 U | 0.222 U | 0.193 U | 0.192 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | Phenanthrene | 500 | 500 | 1,000 | 1,000 | 10 | 1,000 | 0.196 U | 1.23 | 0.193 U | 0.192 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | Pyrene | 1,000 | 1,000 | 3,000 | 3,000 | 1,000 | 780 | 0.196 U | 1.08 | 0.193 U | 0.192 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| PCBs (mg/kg) | Aroclor 1016/1242 | 2 | 2 | 3 | 3 | 2 | 0.065 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| | Aroclor 1016 | 2 | 2 | 3 | 3 | 2 | NA | 0.0585 U | 0.0636 U | 0.0556 U | 0.0546 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| | Aroclor 1221 | 2 | 2 | 3 | 3 | 2 | 0.129 U | 0.0585 U | 0.0636 U | 0.0556 U | 0.0546 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| | Aroclor 1232 | 2 | 2 | 3 | 3 | 2 | 0.065 U | 0.0585 U | 0.0636 U | 0.0556 U | 0.0546 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| | Aroclor 1242 | 2 | 2 | 3 | 3 | 2 | NA | 0.0585 U | 0.0636 U | 0.0556 U | 0.0546 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| | Aroclor 1248 | 2 | 2 | 3 | 3 | 2 | 0.065 U | 0.0585 U | 0.0636 U | 0.0556 U | 0.0546 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| | Aroclor 1254 | 2 | 2 | 3 | 3 | 2 | 1.21 | 0.104 * | 0.833 * | 0.142 * | 0.67 * | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| | Aroclor 1260 | 2 | 2 | 3 | 3 | 2 | 0.065 U | 0.0585 U | 0.0636 U | 0.0556 U | 0.0546 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| | Aroclor 1262 | 2 | 2 | 3 | 3 | 2 | 0.065 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| | Aroclor 1268 | 2 | 2 | 3 | 3 | 2 | 0.065 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| Total PCBs | 2 | 2 | 3 | 3 | 2 | 1.21 | 0.104 | 0.833 | 0.142 | 0.67 | NA | NA | NA | NA | NA | NA | NA | NA | NA | | |
| Metals, total (mg/kg) | Arsenic | 20 | 20 | 20 | 20 | 20 | 25 | 2.94 U | 40.0 | 2.90 U | 2.88 U | 2.93 U | 2.86 U | 3.62 | 3.10 | NA | NA | NA | NA | NA | |
| | Barium | 1,000 | 1,000 | 3,000 | 3,000 | 1,000 | 2,910 | 20.0 | 7,920 | 41.9 | 27.7 | 232 | 110 | 226 | 48.3 | NA | NA | NA | NA | NA | |
| | Cadmium | 2 | 2 | 30 | 30 | 2 | 4.81 | 0.30 U | 2.01 | 0.29 U | 0.48 | 0.30 U | 0.29 U | 0.49 | NA | NA | NA | NA | NA | NA | |
| | Chromium | 30 | 30 | 200 | 200 | 30 | 1,100 | 4.57 | 1,960 | 6.74 | 5.52 | 10.6 | 12.0 | 15.1 | 42.4 | 6.58 | 6.05 | 5.12 | 4.93 | 5.81 | |
| | Lead | 300 | 300 | 300 | 300 | 300 | 333 | 10.0 | 543 | 21.9 | 18.4 | 36.2 | 32.6 | 146 | 79.4 | NA | NA | NA | NA | NA | |
| | Mercury | 20 | 20 | 30 | 30 | 20 | 0.38 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| | Selenium | 400 | 400 | 800 | 800 | 400 | 0.75 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| | Silver | 100 | 100 | 200 | 200 | 100 | 0.38 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| Chromium (VI) | 30 | 30 | 200 | 200 | 30 | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.37 U | 0.39 U | 0.38 U | 0.38 U | 0.38 U | | |
| pH (s.u.) | pH | N/A | N/A | N/A | N/A | N/A | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5.81 | 5.87 | 5.97 | 5.93 | 5.93 | |

Notes:
mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).
s.u. - standard units

NA - Sample not analyzed for the listed analyte.

N/A - Not applicable.

NS - No MassDEP GW-2 standards exist for this compound.

U - Compound was not detected at specified quantitation limit.

Values in Bold indicate the compound was detected.

Values shown in Bold and shaded type exceed one or more of the listed Method 1 standards.

PAHs - Polynuclear Aromatic Hydrocarbons.

PCBs - Polychlorinated Biphenyls.

RC - Reportable Concentration.

TCLP - Toxicity Characteristic Leaching Procedure.

TSCA - Toxic Substances Control Act criteria.

* - The sample exhibits altered PCB pattern; best possible Aroclor match reported.

** - For reference purpose only.

^ - TRC developed Method 1 standards.

TABLE 2
Summary of Analytical Results for Groundwater - April 2009
New Bedford High School HH-13 Area
New Bedford, Massachusetts

| Analysis | Analyte | Sample ID: | | MW-HH-13 | |
|------------------------------------|------------------------|--------------|--------|--------------|--------------|
| | | Sample Date: | | 4/23/2009 | 4/23/2009 |
| | | GW-2 | GW-3 | | Field Dup |
| PAHs (ug/L) | Acenaphthene | NS | 6,000 | 0.30 U | 0.30 U |
| | Acenaphthylene | 10,000 | 40 | 0.30 U | 0.30 U |
| | Anthracene | NS | 30 | 0.20 U | 0.20 U |
| | Benzo(a)anthracene | NS | 1,000 | 0.05 U | 0.05 U |
| | Benzo(a)pyrene | NS | 500 | 0.10 U | 0.10 U |
| | Benzo(b)fluoranthene | NS | 400 | 0.05 U | 0.05 U |
| | Benzo(g,h,i)perylene | NS | 20 | 0.50 U | 0.50 U |
| | Benzo(k)fluoranthene | NS | 100 | 0.20 U | 0.20 U |
| | Chrysene | NS | 70 | 0.20 U | 0.20 U |
| | Dibenz(a,h)anthracene | NS | 40 | 0.20 U | 0.20 U |
| | Fluoranthene | NS | 200 | 0.50 U | 0.50 U |
| | Fluorene | NS | 40 | 1.0 U | 1.0 U |
| | Indeno(1,2,3-cd)pyrene | NS | 100 | 0.20 U | 0.20 U |
| | 2-Methylnaphthalene | 2,000 | 20,000 | 1.0 U | 1.0 U |
| | Naphthalene | 1,000 | 20,000 | 1.0 U | 1.0 U |
| | Phenanthrene | NS | 10,000 | 0.05 U | 0.05 U |
| Pyrene | NS | 20 | 1.0 U | 1.0 U | |
| PCBs (ug/L) | Aroclor 1016 | 5 | 10 | 0.050 U | NA |
| | Aroclor 1221 | 5 | 10 | 0.050 U | NA |
| | Aroclor 1232 | 5 | 10 | 0.050 U | NA |
| | Aroclor 1242 | 5 | 10 | 0.050 U | NA |
| | Aroclor 1248 | 5 | 10 | 0.050 U | NA |
| | Aroclor 1254 | 5 | 10 | 0.050 U | NA |
| | Aroclor 1260 | 5 | 10 | 0.050 U | NA |
| | Total PCBs | 5 | 10 | 0.050 U | NA |
| Metals, dissolved (ug/L) | Antimony | NS | 8,000 | 40.0 U | 40.0 U |
| | Arsenic | NS | 900 | 5.0 U | 5.0 U |
| | Barium | NS | 50,000 | 5,340 | 5,490 |
| | Beryllium | NS | 200 | 2.0 U | 2.0 U |
| | Cadmium | NS | 4 | 2.5 U | 2.5 U |
| | Chromium | NS | 300 | 5.0 U | 5.0 U |
| | Lead | NS | 10 | 7.5 U | 7.5 U |
| | Mercury | NS | 20 | 0.10 U | 0.10 U |
| | Nickel | NS | 200 | 5.0 U | 5.0 U |
| | Selenium | NS | 100 | 30.0 U | 30.0 U |
| | Silver | NS | 7 | 3.0 U | 3.0 U |
| | Thallium | NS | 3,000 | 30.0 U | 30.0 U |
| | Vanadium | NS | 4,000 | 25.0 U | 25.0 U |
| | Zinc | NS | 900 | 14.0 | 15.0 |
| Metals, total (ug/L) | Antimony | NS | 8,000 | 40.0 U | 40.0 U |
| | Arsenic | NS | 900 | 5.0 U | 5.0 U |
| | Barium | NS | 50,000 | 5,570 | 5,710 |
| | Beryllium | NS | 200 | 2.0 U | 2.0 U |
| | Cadmium | NS | 4 | 2.5 U | 2.5 U |
| | Chromium | NS | 300 | 5.0 U | 5.0 U |
| | Lead | NS | 10 | 7.5 U | 7.5 U |
| | Mercury | NS | 20 | 0.10 U | 0.10 U |
| | Nickel | NS | 200 | 5.0 U | 5.0 U |
| | Selenium | NS | 100 | 30.0 U | 30.0 U |
| | Silver | NS | 7 | 3.0 U | 3.0 U |
| | Thallium | NS | 3,000 | 30.0 U | 30.0 U |
| | Vanadium | NS | 4,000 | 25.0 U | 25.0 U |
| | Zinc | NS | 900 | 17.0 | 20.0 |

Note:

ug/L - micrograms per liter.

NA - Sample not analyzed for the listed analyte.

U - Compound was not detected at specified quantitation limit.

Values in Bold indicate the compound was detected.

Values shown in Bold and shaded type exceed one or more of the listed MCLP Method 1 standards.

PAHs - Polynuclear Aromatic Hydrocarbons.

PCBs - Polychlorinated Biphenyls.

FIGURES



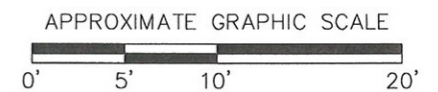
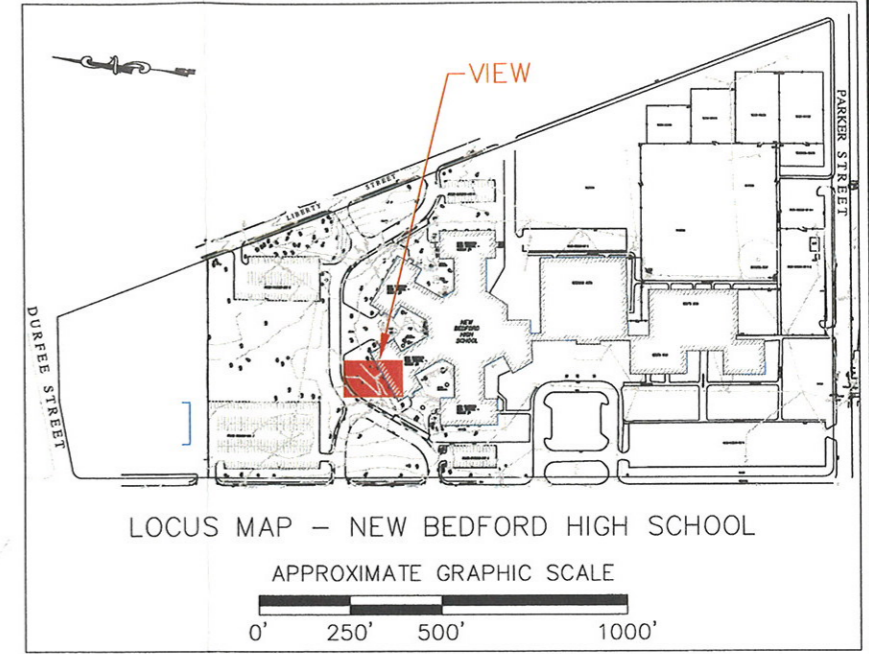
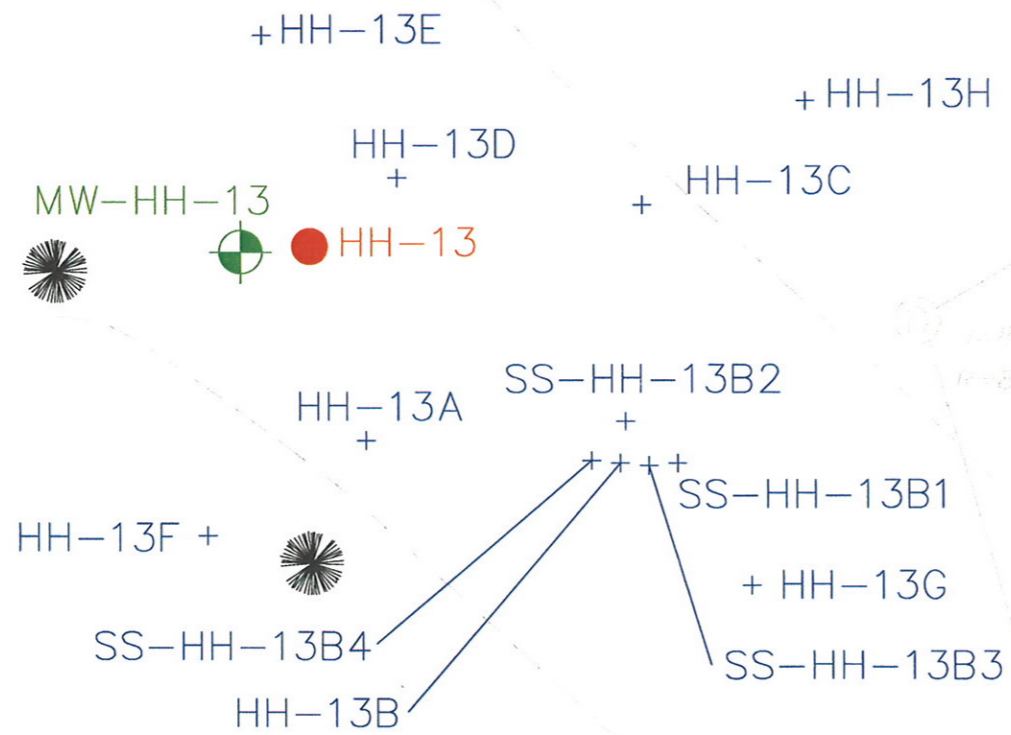
R:\Projects\GIS 2007\54634_NB\Bedford\FIG2_nbhs2.mxd

Parcels
 2007 Orthophotography.
 0 50 100 200
 Feet






 650 Suffolk St.
 Wannalancit Mills
 Lowell, MA 01854

FIGURE 1
 SITE AERIAL PHOTOGRAPH
 NEW BEDFORD HIGH SCHOOL
 NEW BEDFORD, MASSACHUSETTS

FILE: T:\E_CAD\115058\NBHS_HH-13.dwg



LEGEND

-  BETA BORING (APPROXIMATE)
-  TRC INNER AND OUTER RING BORINGS
-  TRC MONITORING WELL
-  DRAIN MANHOLE

NEW BEDFORD HIGH SCHOOL
 NEW BEDFORD, MASSACHUSETTS
 HH-13 AREA ARSENIC AND
 CHROMIUM IMPACTED SURFACE SOIL

SITE PLAN

 Wannalancit Mills
 650 Suffolk Street
 Lowell, MA 01854
 (978) 970-5600

FIGURE 2

DRAWN BY: HWB DATE:
 CHECKED BY: NSB MAY 2008

ATTACHMENT A
IMMINENT HAZARD EVALUATION

**IMMINENT HAZARD EVALUATION
HH-13 SURFACE SOIL
NEW BEDFORD HIGH SCHOOL
NEW BEDFORD, MASSACHUSETTS**

Due to the potential Imminent Hazard (IH) condition that was triggered at the Site on April 2, 2009 for the detection of arsenic and chromium in surface soil (0 to 1 foot in depth) at the HH-13 area of the New Bedford High School (NBHS) campus, an IH evaluation has been performed. The potential IH condition was discovered during additional investigation to delineate the extent of elevated levels of polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), arsenic, barium, cadmium, chromium and lead in soil surrounding the four academic wings (called House 1 through House 4) on the NBHS campus and to determine the extent of potential soil removal necessary to achieve a condition of no significant risk for the top three feet of soil within these areas. The HH-13 sampling location had been identified as one of three areas requiring further delineation sampling in the area surrounding the Houses.

The protocol for the delineation sampling called for the collection of four "inner ring" soil borings (0 to 1 foot and 1 to 3 feet in depth) within ten feet of the original HH-13 sampling location to the northwest, southwest, southeast, and northeast (designated "A" through "D"). The protocol further called for the collection of four additional "outer ring" borings twenty feet from the original HH-13 sampling location (designated "E" through "H"). "Outer ring" samples were also collected from the 0 to 1 and 1 to 3 feet intervals. All samples were collected on March 11, 2009 and the "A" through "D" samples were authorized for PAH, total PCBs, and selected metals analysis. The "E" through "H" samples were held at the laboratory, pending the results of the "A" through "D" sample analysis.

PAHs and total PCB concentrations were below the Method 1 S-1/GW-2 and S-1/GW-3 standards at all four 0 to 1 foot locations. Arsenic, barium, cadmium, chromium and lead concentrations were also below the applicable Method 1 soil standards at three of the four initial 0 to 1 foot locations (HH-13A, HH-13C and HH-13D). However, at location HH-13B (0 to 1 foot), concentrations of all five metals exceeded applicable Method 1 soil standards and arsenic and chromium were detected at concentrations equal to or exceeding the MCP Imminent Hazard Reporting Thresholds (Table 1). Due to the detection of arsenic and chromium at levels equal to or exceeding the MCP Imminent Hazard Reporting Thresholds at the HH-13B location, the potential IH condition was reported and the "E" through "H" samples were immediately authorized for selected metals analysis to determine the extent of the elevated surficial arsenic and chromium. Samples HH-13E, HH-13G and HH-13J were authorized primarily to determine the extent of metals in the 1 to 3 foot interval, while HH-13F, which flanked HH-13B, was authorized to determine the extent of surficial metals at the HH-13B location. In addition, four 0 to 1 foot soil samples were collected in close proximity to the HH-13B location for chromium speciation.

The metals results for HH-13E through HH-13H were reported by the laboratory on April 3, 2009. The concentrations of arsenic, barium, cadmium, chromium and lead in the HH-13E through HH-13H 0 to 1 foot samples were less than the Method 1 S-1 standards except for the

chromium result at location HH-13H (42.4 mg/kg) which slightly exceeded the Method 1 S-1 standard (30 mg/kg). These results confirmed that the extent of the surficial arsenic and chromium contamination that triggered an IH conditions had been delineated. Sample-specific results for the HH-13 0 to 1 foot samples are presented in Table 1.

This IH evaluation reflects surface soil sampling conducted to date for the HH-13 area. The surface soil sample results are summarized in Table 2. PAHs were not considered further because their maximum detected concentrations were less than their Massachusetts Department of Environmental Protection (MassDEP) background concentrations for natural soil. Arithmetic mean concentrations were used as exposure point concentrations (EPCs) for total PCBs, arsenic, barium and lead. However, because the maximum detected chromium concentration (1,960 mg/kg) is more than 10-fold greater than its Method 1 S-1 standard, averaging of the 0 to 1 foot chromium concentrations from the HH-13 area is not appropriate. Therefore, the maximum detected concentration or a 95 percent upper confidence limit (95% UCL) on the arithmetic mean concentration may be used as the EPC to determine whether an IH condition exists at the site. Due to the variability in the data set, the calculated 95% UCL was greater than the maximum detected concentration. Therefore, the maximum detected concentration was used as the EPC for chromium.

Chromium speciation data collected in close proximity to the HH-13B locations indicated that chromium (VI) was not present at concentrations above the analytical reporting limit in the samples (Table 3). Therefore, chromium has been evaluated as chromium (III). However, to conservatively evaluate the chromium data and the associated risk and hazard, chromium was also evaluated as chromium (VI).

The area of concern is located immediately to the north of House 2. This area may be accessed by students, staff and child and adult visitors at the high school. The area is vegetated and periodically maintained by mowing. For the purposes of this IH evaluation, exposures are assumed to occur over 24 weeks, during the spring and fall when the ground is not frozen and school is in session. During this 24-week period, exposures are assumed to occur 5 days per week for 1 hour per day. These values are conservative because their use assumes that: (1) a child always contacts this small area when at the school; (2) children go to this area even during inclement weather; and (3) children remain at this location for 1 hour per day which is unlikely to occur due to small size and lack of attractive potential of this area.

To estimate exposures, a young child (age 1 to 6) was selected for evaluation because this age group may be present at this location, accompanying parents or older siblings on their way to and from school. Incidental ingestion of and dermal contact with impacted soils are assumed to occur while the young child plays at this location. The inhalation of fugitive dust generated while the child plays at this location is also considered a complete exposure pathway, even though the area is vegetated. Older children may also be exposed to the HH-13 surface soils, but a young child is evaluated as the most sensitive receptor due to their higher soil intake rate, lower body weight, and sensitive developmental stage.

Exposure assumptions applicable to the young child are provided on the risk calculation spreadsheets (Tables 4 through 11). Exposure assumptions selected for use are consistent with

those used by MassDEP in the park visitor IH shortform, adjusted to be applicable to the 24-week exposure period of concern. For the fugitive dust pathway, methods and assumptions consistent with the MassDEP Technical Update "Characterization of Risks Due to Inhalation of Particulates by Construction Workers" (July 2008) were used including a PM_{10} of $60 \mu\text{g}/\text{m}^3$. Inhalation rates used are age-specific values provided by MassDEP in the 1995 risk assessment guidance document.

Tables 4 through 7 provide risk calculations assuming chromium is entirely present as chromium (III). The hazard index (HI) of 1 is less than the MCP noncarcinogenic IH limit of 10. The excess lifetime cancer risk (ELCR) of $3\text{E}-06$ is less than the MCP carcinogenic IH limit of $1\text{E}-05$. Tables 8 through 11 present risk calculations assuming chromium is entirely present as chromium (VI). The HI of 2 and the ELCR of $6\text{E}-06$ are also less than the MCP noncarcinogenic and carcinogenic IH limits of 10 and $1\text{E}-05$, respectively. Therefore, no IH condition exists at the HH-13 area of the NBHS campus.

Table 1. Summary of Analytical Results for Surface Soil Samples - HH-13 Area
New Bedford, Massachusetts

| Analysis | Analyte | Sample Location: | | HH-13A | HH-13B | HH-13C | HH-13D | HH-13E | HH-13F | HH-13G | HH-13H |
|--------------------------|------------------------|---------------------|----------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | Sample Depth (ft.): | | 0-1 | 0-1 | 0-1 | 0-1 | 0-1 | 0-1 | 0-1 | 0-1 |
| | | Sample Date: | | 3/11/2009 | 3/11/2009 | 3/11/2009 | 3/11/2009 | 3/11/2009 | 3/11/2009 | 3/11/2009 | 3/11/2009 |
| | | S-1/GW-2 | S-1/GW-3 | | | | | | | | |
| PAHs (mg/kg) | 2-Methylnaphthalene | 80 | 300 | 0.196 U | 0.222 U | 0.193 U | 0.192 U | NA | NA | NA | NA |
| | Acenaphthene | 1,000 | 1,000 | 0.196 U | 0.222 U | 0.193 U | 0.192 U | NA | NA | NA | NA |
| | Acenaphthylene | 600 | 10 | 0.196 U | 0.222 U | 0.193 U | 0.192 U | NA | NA | NA | NA |
| | Anthracene | 1,000 | 1,000 | 0.196 U | 0.294 | 0.193 U | 0.192 U | NA | NA | NA | NA |
| | Benzo(a)anthracene | 7 | 7 | 0.196 U | 0.621 | 0.193 U | 0.192 U | NA | NA | NA | NA |
| | Benzo(a)pyrene | 2 | 2 | 0.196 U | 0.528 | 0.193 U | 0.192 U | NA | NA | NA | NA |
| | Benzo(b)fluoranthene | 7 | 7 | 0.196 U | 0.672 | 0.193 U | 0.192 U | NA | NA | NA | NA |
| | Benzo(g,h,i)perylene | 1,000 | 1,000 | 0.196 U | 0.281 | 0.193 U | 0.192 U | NA | NA | NA | NA |
| | Benzo(k)fluoranthene | 70 | 70 | 0.196 U | 0.250 | 0.193 U | 0.192 U | NA | NA | NA | NA |
| | Chrysene | 70 | 70 | 0.196 U | 0.621 | 0.193 U | 0.192 U | NA | NA | NA | NA |
| | Dibenz(a,h)anthracene | 0.7 | 0.7 | 0.196 U | 0.222 U | 0.193 U | 0.192 U | NA | NA | NA | NA |
| | Fluoranthene | 1,000 | 1,000 | 0.196 U | 1.09 | 0.193 U | 0.192 U | NA | NA | NA | NA |
| | Fluorene | 1,000 | 1,000 | 0.196 U | 0.222 U | 0.193 U | 0.192 U | NA | NA | NA | NA |
| | Indeno(1,2,3-cd)pyrene | 7 | 7 | 0.196 U | 0.341 | 0.193 U | 0.192 U | NA | NA | NA | NA |
| | Naphthalene | 40 | 500 | 0.196 U | 0.222 U | 0.193 U | 0.192 U | NA | NA | NA | NA |
| | Phenanthrene | 500 | 500 | 0.196 U | 1.23 | 0.193 U | 0.192 U | NA | NA | NA | NA |
| Pyrene | 1,000 | 1,000 | 0.196 U | 1.08 | 0.193 U | 0.192 U | NA | NA | NA | NA | |
| PCBs (mg/kg) | Total PCBs | 2 | 2 | 0.104 | 0.833 | 0.142 | 0.670 | NA | NA | NA | NA |
| Metals (mg/kg) | Mercury | 20 | 20 | NA | NA | NA | NA | NA | NA | NA | NA |
| | Antimony | 20 | 20 | NA | NA | NA | NA | NA | NA | NA | NA |
| | Arsenic | 20 | 20 | 2.94 U | 40.0 | 2.90 U | 2.88 U | 2.93 U | 2.86 U | 3.62 | 3.10 |
| | Barium | 1,000 | 1,000 | 20.0 | 7,920 | 41.9 | 27.7 | 232 | 110 | 226 | 48.3 |
| | Beryllium | 100 | 100 | NA | NA | NA | NA | NA | NA | NA | NA |
| | Cadmium | 2 | 2 | 0.30 U | 2.01 | 0.29 U | 0.48 | 0.30 U | 0.29 U | 0.49 | 0.49 |
| | Chromium | 30 | 30 | 4.57 | 1,960 | 6.74 | 5.52 | 10.6 | 12.0 | 15.1 | 42.4 |
| | Lead | 300 | 300 | 10.0 | 543 | 21.9 | 18.4 | 36.2 | 32.6 | 146 | 79.4 |
| | Nickel | 20 | 20 | NA | NA | NA | NA | NA | NA | NA | NA |
| | Selenium | 400 | 400 | NA | NA | NA | NA | NA | NA | NA | NA |
| | Silver | 100 | 100 | NA | NA | NA | NA | NA | NA | NA | NA |
| | Thallium | 8 | 8 | NA | NA | NA | NA | NA | NA | NA | NA |
| | Vanadium | 600 | 600 | NA | NA | NA | NA | NA | NA | NA | NA |
| | Zinc | 2,500 | 2,500 | NA | NA | NA | NA | NA | NA | NA | NA |

Notes:

All units in mg/kg unless otherwise specified.

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).

NA - Sample not analyzed for the listed analyte.

N/A - Not applicable.

U - Compound was not detected at specified quantitation limit.

Values in Bold indicate the compound was detected.

Values shown in Bold and shaded type exceed one or more of the listed Method 1 standards.

PAHs - Polynuclear Aromatic Hydrocarbons.

PCBs - Polychlorinated Biphenyls.

Table 2. Summary of Analytical Results for Surface Soil Samples - HH-13 Area
 NBHS
 New Bedford, Massachusetts

| Analysis | Analyte | | | | # of Samples | # of Detects | Freq. of Detects | Min. of Detects (mg/kg) | Max. of Detects (mg/kg) | Location of Max. Detected | Min. of Non-Detects (mg/kg) | Max. of Non-Detects (mg/kg) | Mean Concentration (mg/kg) | EPC (mg/kg) | EPC Rationale |
|----------|------------------------|----------|----------|------------|--------------|--------------|------------------|-------------------------|-------------------------|---------------------------|-----------------------------|-----------------------------|----------------------------|----------------|------------------|
| | | S-1/GW-2 | S-1/GW-3 | Background | | | | | | | | | | | |
| PAHs | Anthracene | 1,000 | 1,000 | 1 | 4 | 1 | 25.0% | 0.294 | 0.294 | HH-13B | 0.192 | 0.196 | 1.5E-01 | NA | Below background |
| | Benzo(a)anthracene | 7 | 7 | 2 | 4 | 1 | 25.0% | 0.621 | 0.621 | HH-13B | 0.192 | 0.196 | 2.3E-01 | NA | Below background |
| | Benzo(a)pyrene | 2 | 2 | 2 | 4 | 1 | 25.0% | 0.528 | 0.528 | HH-13B | 0.192 | 0.196 | 2.0E-01 | NA | Below background |
| | Benzo(b)fluoranthene | 7 | 7 | 2 | 4 | 1 | 25.0% | 0.672 | 0.672 | HH-13B | 0.192 | 0.196 | 2.4E-01 | NA | Below background |
| | Benzo(g,h,i)perylene | 1,000 | 1,000 | 1 | 4 | 1 | 25.0% | 0.281 | 0.281 | HH-13B | 0.192 | 0.196 | 1.4E-01 | NA | Below background |
| | Benzo(k)fluoranthene | 70 | 70 | 1 | 4 | 1 | 25.0% | 0.25 | 0.25 | HH-13B | 0.192 | 0.196 | 1.4E-01 | NA | Below background |
| | Chrysene | 70 | 70 | 2 | 4 | 1 | 25.0% | 0.621 | 0.621 | HH-13B | 0.192 | 0.196 | 2.3E-01 | NA | Below background |
| | Fluoranthene | 1,000 | 1,000 | 4 | 4 | 1 | 25.0% | 1.09 | 1.09 | HH-13B | 0.192 | 0.196 | 3.5E-01 | NA | Below background |
| | Indeno(1,2,3-cd)pyrene | 7 | 7 | 1 | 4 | 1 | 25.0% | 0.341 | 0.341 | HH-13B | 0.192 | 0.196 | 1.6E-01 | NA | Below background |
| | Phenanthrene | 500 | 500 | 3 | 4 | 1 | 25.0% | 1.23 | 1.23 | HH-13B | 0.192 | 0.196 | 3.8E-01 | NA | Below background |
| | Pyrene | 1,000 | 1,000 | 4 | 4 | 1 | 25.0% | 1.08 | 1.08 | HH-13B | 0.192 | 0.196 | 3.4E-01 | NA | Below background |
| PCBs | Total PCBs | 2 | 2 | NA | 4 | 4 | 100.0% | 0.104 | 0.833 | HH-13B | -- | -- | 4.4E-01 | 4.4E-01 | Mean |
| Metals | Arsenic | 20 | 20 | 20 | 8 | 3 | 37.5% | 3.1 | 40 | HH-13B | 2.86 | 2.94 | 6.7E+00 | 6.7E+00 | Mean |
| | Barium | 1,000 | 1,000 | 50 | 8 | 8 | 100.0% | 20 | 7920 | HH-13B | -- | -- | 1.1E+03 | 1.1E+03 | Mean |
| | Cadmium | 2 | 2 | 2 | 8 | 4 | 50.0% | 0.48 | 2.01 | HH-13B | 0.29 | 0.3 | 5.1E-01 | 5.1E-01 | Mean |
| | Chromium | 30 | 30 | 30 | 8 | 8 | 100.0% | 4.57 | 1960 | HH-13B | -- | -- | 2.6E+02 | 2.0E+03 | Maximum |
| | Lead | 300 | 300 | 100 | 8 | 8 | 100.0% | 10 | 543 | HH-13B | -- | -- | 1.1E+02 | 1.1E+02 | Mean |

Notes:

All units in mg/kg unless otherwise specified.

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).

NA - Not applicable or not available.

Values in Bold indicate the compound was detected.

Values shown in Bold and shaded type exceed one or more of the listed Method 1 standards.

PAHs - Polynuclear Aromatic Hydrocarbons.

PCBs - Polychlorinated Biphenyls.

**Table 3. Chromium Speciation Data - HH-13 Area
NBHS
New Bedford, Massachusetts**

| Analysis | Analyte | Sample Location: | | SSHH-13B1 | SSHH-13B2 | SSHH-13B3 | SSHH-13B4 | |
|--------------------------|---------------|---------------------|----------|-------------|-------------|-------------|-------------|-------------|
| | | Sample Depth (ft.): | | 0-1 | 0-1 | 0-1 | 0-1 | |
| | | Sample Date: | | 4/10/2009 | 4/10/2009 | 4/10/2009 | 4/10/2009 | |
| | | S-1/GW-2 | S-1/GW-3 | Field Dup | | | | |
| Metals (mg/kg) | Chromium | 30 | 30 | 6.58 | 6.05 | 5.12 | 4.93 | 5.81 |
| | Chromium (VI) | 30 | 30 | 0.37 U | 0.39 U | 0.38 U | 0.38 U | 0.38 U |
| pH (s.u.) | pH | N/A | N/A | 5.81 | 5.87 | 5.97 | 5.93 | 5.93 |

Notes:

mg/kg - milligrams per kilogram (dry weight) or parts per million (ppm).

U - Compound was not detected at specified quantitation limit.

Values in **Bold** indicate the compound was detected.

Table 4
 Visitor - Child
 Incidental Ingestion of Surface Soil
 HH13 - New Bedford High School (Chromium as Chromium III)
 New Bedford, Massachusetts

| Constituent | EPC | Exposure Estimates | | | | Toxicity Values | | Risk Estimates | |
|------------------------|---------|------------------------------------|--------------------------|-----------------------|-----------------------------|-------------------------|--|--|-----------------|
| | | Surface Soil Concentration (mg/kg) | RAF Ingestion Cancer (-) | LADD Cancer (mg/kg-d) | RAF Ingestion Noncancer (-) | ADD Noncancer (mg/kg-d) | Cancer Slope Factor (Oral) (mg/kg-d) ⁻¹ | Subchronic Reference Dose (Oral) (mg/kg-d) | Cancer Risk (-) |
| 1336-36-3 Total PCBs | 4.4E-01 | 8.5E-01 | 5.9E-08 | 8.5E-01 | 2.5E-06 | 2.0E+00 | 5.0E-05 | 1E-07 | 5.0E-02 |
| Metals | | | | | | | | | |
| 7440-38-2 Arsenic | 6.7 | 1.0E+00 | 1.1E-06 | 1.0E+00 | 4.5E-05 | 1.5E+00 | 3.0E-04 | 2E-06 | 1.5E-01 |
| 7440-39-3 Barium | 1078 | NC | NA | 1.0E+00 | 7.2E-03 | NA | 7.0E-02 | NA | 1.0E-01 |
| 7440-43-9 Cadmium | 0.51 | NC | NA | 1.0E+00 | 3.4E-06 | NA | 5.0E-04 | NA | 6.8E-03 |
| 16065-83-1 Chromium +3 | 1960 | NC | NA | 1.0E+00 | 1.3E-02 | NA | 1.5E+00 | NA | 8.7E-03 |
| 18540-29-9 Chromium +6 | 0 | NC | NA | 1.0E+00 | 0.0E+00 | NA | 2.0E-02 | NA | 0.0E+00 |
| 7439-92-1 Lead | 110.9 | NC | NA | 5.0E-01 | 3.7E-04 | NA | 7.5E-04 | NA | 4.9E-01 |

| | Cancer Risk | Hazard Index |
|--------|-------------|--------------|
| TOTAL: | 2E-06 | 8E-01 |

NA = Not Applicable
 NC = No Criteria
 Where:

$LADD_{cancer} = \text{[Soil Concentration} \times UC \times RAF \times IR \times EF \times ED \times EP] / [BW \times AP_{cancer}]$
 $ADD_{non-cancer} = \text{[Soil Concentration} \times UC \times RAF \times IR \times EF \times ED \times EP] / [BW \times AP_{non-cancer}]$
 $Cancer Risk = LADD_{cancer} \times Slope Factor$
 $Hazard Quotient = ADD_{non-cancer} / Reference Dose$
 Unit Conversion (UC) = 1.0E-06 kg/mg
 Relative Absorption Factor (RAF) = CS (unitless) [1]
 Ingestion Rate (IR) = 100 mg/d [1]
 Exposure Duration (ED) = 1 day/event [1]
 Exposure Frequency (EF) - Noncancer = 0.714 event/day [2] - 5 days/week
 Exposure Frequency (EF) - Cancer = 0.329 event/day [2] - 5 days/week for 24 weeks
 Exposure Period (EP) - Noncancer = 0.460 years [2] - 24 weeks
 Exposure Period (EP) - Cancer = 5 years [1]
 Body Weight (BW) - Noncancer = 10.7 kg (1-2 year old) [1]
 Body Weight (BW) - Cancer = 15 kg (1-6 year old) [1]
 Averaging Period Cancer (AP_{cancer}) = 70 years [1]
 Averaging Period Noncancer (AP_{noncancer}) = 0.460 years [2]

Bold = Cancer Risk > 1.0E-05 or Hazard Quotient > 1.0E+00

[1] MassDEP, 2007; Park User Soil Imminent Hazard Short-form
 [2] Site-specific information for practices and games during 18-week sport season (includes pre-season and playoffs)

Table 5
Visitor - Child
Dermal Contact with Surface Soil
HH13 - New Bedford High School (Chromium as Chromium III)
New Bedford, Massachusetts

| Constituent | EPC | Exposure Estimates | | | | Toxicity Values | | Risk Estimates | |
|------------------------|------------------------------------|-----------------------|-----------------------|--------------------------|-------------------------|--|--|-----------------|---------------------|
| | Surface Soil Concentration (mg/kg) | RAF Dermal Cancer (-) | LADD Cancer (mg/kg-d) | RAF Dermal Noncancer (-) | ADD Noncancer (mg/kg-d) | Cancer Slope Factor (Oral) (mg/kg-d) ⁻¹ | Subchronic Noncancer Reference Dose (Oral) (mg/kg-d) | Cancer Risk (-) | Hazard Quotient (-) |
| 1336-36-3 Total PCBs | 0.44 | 0.16 | 8.7E-08 | 0.16 | 2.7E-06 | 2.0E+00 | 5.0E-05 | 2E-07 | 5.5E-02 |
| Metals | | | | | | | | | |
| 7440-38-2 Arsenic | 6.7 | 0.03 | 2.5E-07 | 0.03 | 7.8E-06 | 1.5E+00 | 3.0E-04 | 4E-07 | 2.6E-02 |
| 7440-39-3 Barium | 1078 | NC | NA | 0.05 | 2.1E-03 | NA | 7.0E-02 | NA | 3.0E-02 |
| 7440-43-9 Cadmium | 0.51 | NC | NA | 0.14 | 2.8E-06 | NA | 5.0E-04 | NA | 5.6E-03 |
| 16065-83-1 Chromium +3 | 1960 | NC | NA | 0.04 | 3.1E-03 | NA | 1.5E+00 | NA | 2.0E-03 |
| 18540-29-9 Chromium +6 | 0 | NC | NA | 0.09 | 0.0E+00 | NA | 2.0E-02 | NA | 0.0E+00 |
| 7439-92-1 Lead | 110.9 | NC | NA | 0.006 | 2.6E-05 | NA | 7.5E-04 | NA | 3.5E-02 |

NA = Not Applicable
 NC = No Criteria

Where:

LADD_{cancer} = Soil Concentration x UC1 x SA x SAF x RAF x EF x ED x EP / (BW x AP_{cancer})
 ADD_{non-cancer} = Soil Concentration x UC1 x SA x SAF x RAF x EF x ED x EP / (BW x AP_{non-cancer})
 Cancer Risk = LADD_{cancer} x Slope Factor
 Hazard Quotient = ADD_{non-cancer} / Reference Dose

Unit Conversion (UC1) = 1E-06 kg/mg
 Skin Surface Area (SA) - Noncancer = 1670 cm²/d [1] - (1-2 year old)
 Skin Surface Area (SA) - Cancer = 2231 cm²/d [1] - (1-6 year old)
 Soil Adherence Factor (SAF) = 0.35 mg/cm² [1]
 Relative Absorption Factor (RAF) = CS (unitless) [1]
 Exposure Duration (ED) = 1 day/event [1]
 Exposure Frequency (EF) - Noncancer = 0.714 event/day [2] - 5 days/week
 Exposure Frequency (EF) - Cancer = 0.329 event/day [2] - 5 days/week for 24 weeks
 Exposure Period (EP) - Noncancer = 0.460 years [2] - 24 weeks
 Exposure Period (EP) - Cancer = 5 years [1]
 Body Weight (BW) - Noncancer = 10.7 kg (1-2 year old) [1]
 Body Weight (BW) - Cancer = 15 kg (1-6 year old) [1]
 Averaging Period Cancer (AP_{cancer}) = 70 years [1]
 Averaging Period Noncancer (AP_{noncancer}) = 0.460 years [2]

[1] MassDEP, 2007; Park User Soil Imminent Hazard Short-form

[2] Site-specific information for practices and games during 18-week sport season (includes pre-season and playoffs)

| | | |
|---------------|--------------|--------------|
| | Cancer Risk | Hazard Index |
| TOTAL: | 5E-07 | 2E-01 |

Bold = Cancer Risk > 1.0E-05 or Hazard Quotient > 1.0E+00

Table 6
Visitor - Child
Inhalation of Fugitive Dusts - Exposure Via the Lungs
HRI13 - New Bedford High School (Chromium as Chromium III)
New Bedford, Massachusetts

| Constituent | Surface Soil Concentration (mg/kg) | Exposure Estimates | | Toxicity Values | | Risk Estimates | |
|------------------------|------------------------------------|---|---|---|---|-----------------|---------------------|
| | | LADE _{10h} Cancer (ug/m ³) | ADE _{10h} Noncancer (ug/m ³) | Unit Risk Factor (Inh) (ug/m ³) ⁻¹ | Subchronic Noncancer Reference Conc. (Inh) (ug/m ³) | Cancer Risk (-) | Hazard Quotient (-) |
| 1336-36-3 Total PCBs | 0.44 | 6.5E-08 | 1.6E-06 | 1.0E-04 | 2.0E-02 | 6E-12 | 3.2E-05 |
| Metals | | | | | | | |
| 7440-38-2 Arsenic | 6.7 | 9.9E-07 | 2.5E-05 | 4.3E-03 | 2.5E-03 | 4E-09 | 1.0E-02 |
| 7440-39-3 Barium | 1078 | 1.6E-04 | 4.0E-03 | NA | 5.0E+00 | NA | 8.1E-04 |
| 7440-43-9 Cadmium | 0.51 | 7.5E-08 | 1.9E-06 | 1.8E-03 | 2.0E-02 | 1E-10 | 9.6E-05 |
| 16065-83-1 Chromium +3 | 1960 | 2.9E-04 | 7.4E-03 | NA | 3.0E-01 | NA | 2.5E-02 |
| 18540-29-9 Chromium +6 | 0 | 0.0E+00 | 0.0E+00 | 1.2E-02 | 3.0E-01 | 0E+00 | 0.0E+00 |
| 7439-92-1 Lead | 110.9 | 1.6E-05 | 4.2E-04 | NA | 1.0E+00 | NA | 4.2E-04 |

NA = Not Applicable

Where:

LADE_{10h}cancer = (OHM x 0.5 X PM10 x IR x RAF x EF x ED x EP x UCI / (AP_{cancer} x BW)) x (BW assumed/IR assumed)
 ADE_{10h}non-cancer = (OHM x 0.5 X PM10 x IR x RAF x EF x ED x EP x UCI / AP_{non-cancer} x BW) x (BW assumed/IR assumed)
 Cancer Risk = LADE_{10h}cancer x Cancer Slope Factor
 Hazard Quotient = ADE_{10h}non-cancer / Reference Dose

| | | |
|---------------|-------------|--------------|
| | Cancer Risk | Hazard Index |
| TOTAL: | 4E-09 | 4E-02 |

Bold = Cancer Risk > 1.0E-05 or Hazard Quotient > 1.0E+00

Respirable Dust (PM₁₀) = 60 ug/m3 [4]
 Relative Absorption Factor (RAF) = 1 unitless
 Inhalation Rate (IR) - Noncancer (1-2 year old) = 8.92 l/min [4] - heavy exertion; 1-2 year old; average of male/female
 Inhalation Rate (IR) - Cancer (1-6 year old) = 14.77 l/min [4] - heavy exertion; 1-6 year old; average of male/female
 Exposure Frequency (EF) - Noncancer = 0.714 event/day [5] - 5 days/week
 Exposure Frequency (EF) - Cancer = 0.329 event/day [5] - 5 days/week for 24 weeks
 Exposure Duration (ED) = 1 hours/event [3]
 Exposure Period (EP) - Noncancer = 168 days [5] - 24 weeks
 Exposure Period (EP) - Cancer = 1825 days [1]
 Body Weight (BW) - Noncancer = 10.7 kg (1-2 year old) [1]
 Body Weight (BW) - Cancer = 14.8 kg (1-6 year old) [1]
 Averaging Period Cancer (AP_{cancer}) = 25550 days [1]
 Averaging Period Noncancer (AP_{noncancer}) = 168 days [5]
 Inhalation Rate assumed (IR assumed) = 20 m3/day [2] - for adjustment of toxicity value
 Body Weight (BW assumed) = 70 kg [2] - for adjustment of toxicity value
 Unit Conversion (UC) = 6.00E-11 (60 min/hour; 1 x 10⁻⁹ kg/ug; 0.001 m3/l)

- [1] MassDEP, 2007; Park User Soil Imminent Hazard Short-form
- [2] MassDEP, 2008; Characterization of Risk Due to Inhalation of Particulates by Construction Workers
- [3] Professional Judgment
- [4] MassDEP, 1995; Guidance for Disposal Site Risk Characterization
- [5] Site-specific information for practices and games during 18-week sport season (includes pre-season and playoffs)

Table 7
 Visitor - Child
 Inhalation of Fugitive Dusts - Exposure Via the GI Tract
 HH13 - New Bedford High School (Chromium as Chromium III)
 New Bedford, Massachusetts

| Constituent | Surface Soil Concentration (mg/kg) | Exposure Estimates | | | | Toxicity Values | | Risk Estimates | |
|------------------------|------------------------------------|--------------------|---|-----------------------|---|--|--|-----------------|---------------------|
| | | RAF-Cancer Ing (-) | LADD _{GI-125} Cancer (mg/kg-day) | RAF-Noncancer Ing (-) | ADD _{GI-125} Noncancer (mg/kg-day) | Cancer Slope Factor (Oral) (mg/kg-day) ⁻¹ | Subchronic Reference Dose (Oral) (mg/kg-day) | Cancer Risk (-) | Hazard Quotient (-) |
| 1336-36-3 Total PCBs | 0.44 | 8.5E-01 | 4.70E-11 | 8.50E-01 | 1.20E-09 | 2.0E+00 | 5.0E-05 | 9E-11 | 2.4E-05 |
| Metals | | | | | | | | | |
| 7440-38-2 Arsenic | 6.70 | 1.0E+00 | 8.48E-10 | 1.00E+00 | 2.15E-08 | 1.5E+00 | 3.0E-04 | 1E-09 | 7.2E-05 |
| 7440-39-3 Barium | 1078 | NC | NA | 1.00E+00 | 3.47E-06 | NA | 7.0E-02 | NA | 5.0E-05 |
| 7440-43-9 Cadmium | 0.51 | NC | NA | 1.00E+00 | 1.64E-09 | NA | 5.0E-04 | NA | 3.3E-06 |
| 16065-83-1 Chromium +3 | 1960 | NC | NA | 1.00E+00 | 6.30E-06 | NA | 1.5E+00 | NA | 4.2E-06 |
| 18540-29-9 Chromium +6 | 0 | NC | NA | 1.00E+00 | 0.00E+00 | NA | 2.0E-02 | NA | 0.0E+00 |
| 7439-92-1 Lead | 110.9 | NC | NA | 5.00E-01 | 1.78E-07 | NA | 7.5E-04 | NA | 2.4E-04 |

NA = Not Applicable

Where:

LADD_{cancer} = (OHM x 1.5 X PM10 x IR x RAF x EF x ED x EP x UC1 / (AP_{cancer} x BW))
 ADDE_{non-cancer} = (OHM x 1.5 X PM10 x IR x RAF x EF x ED x EP x UC1 / AP_{non-cancer} x BW)
 Cancer Risk = LADD_{cancer} x Cancer Slope Factor
 Hazard Quotient = ADDE_{non-cancer} / Reference Dose

| | | |
|--|----------|--|
| Respirable Dust (PM ₁₀) = | 60 | ug/m3 [1] |
| Inhalation Rate (IR) - Noncancer (1-2 year old) = | 8.92 | l/min [4] - heavy exertion; 1-2 year old; average of male/female |
| Inhalation Rate (IR) - Cancer (1-6 year old) = | 14.77 | l/min [4] - heavy exertion; 1-6 year old; average of male/female |
| Exposure Frequency (EF) - Noncancer = | 0.714 | event/day [5] - 5 days/week |
| Exposure Frequency (EF) - Cancer = | 0.329 | event/day [5] - 5 days/week for 24 weeks |
| Exposure Duration (ED) = | 1 | hours/event [3] |
| Exposure Period (EP) - Noncancer = | 168 | days [5] - 24 weeks |
| Exposure Period (EP) - Cancer = | 1825 | days [1] |
| Body Weight (BW) - Noncancer = | 10.7 | kg (1-2 year old) [1] |
| Body Weight (BW) - Cancer = | 14.8 | kg (1-6 year old) [1] |
| Averaging Period Cancer (AP _{cancer}) = | 25550 | days [1] |
| Averaging Period Noncancer (AP _{non-cancer}) = | 168 | days [5] |
| Unit Conversion (UC1) = | 6.09E-11 | (60 min/hour; 1 x 10 ⁻⁹ kg/ug; 0.001 m3/l) |

- [1] MassDEP, 2007; Park User Soil Imminent Hazard Short-form
- [2] MassDEP, 2008; Characterization of Risk Due to Inhalation of Particulates by Construction Workers
- [3] Professional Judgment
- [4] MassDEP, 1995; Guidance for Disposal Site Risk Characterization
- [5] Site-specific information for practices and games during 18-week sport season (includes pre-season and playoffs)

| | | |
|---------------|-------------|--------------|
| | Cancer Risk | Hazard Index |
| TOTAL: | 1E-09 | 4E-04 |

Bold = Cancer Risk > 1.0E-05 or Hazard Quotient > 1.0E+00

Table 8
Visitor - Child
Incidental Ingestion of Surface Soil
HH13 - New Bedford High School (Chromium as Chromium VI)
New Bedford, Massachusetts

| Constituent | EPC | Exposure Estimates | | | | Toxicity Values | | Risk Estimates | |
|------------------------|------------------------------------|--------------------------|-----------------------|-----------------------------|-------------------------|--|--|-----------------|---------------------|
| | Surface Soil Concentration (mg/kg) | RAF Ingestion Cancer (-) | LADD Cancer (mg/kg-d) | RAF Ingestion Noncancer (-) | ADD Noncancer (mg/kg-d) | Cancer Slope Factor (Oral) (mg/kg-d) ⁻¹ | Subchronic Noncancer Reference Dose (Oral) (mg/kg-d) | Cancer Risk (-) | Hazard Quotient (-) |
| 1336-36-3 Total PCBs | 4.4E-01 | 8.5E-01 | 5.9E-08 | 8.5E-01 | 2.5E-06 | 2.0E+00 | 5.0E-05 | 1E-07 | 5.0E-02 |
| Metals | | | | | | | | | |
| 7440-38-2 Arsenic | 6.7 | 1.0E+00 | 1.1E-06 | 1.0E+00 | 4.5E-05 | 1.5E+00 | 3.0E-04 | 2E-06 | 1.5E-01 |
| 7440-39-3 Barium | 1078 | NC | NA | 1.0E+00 | 7.2E-03 | NA | 7.0E-02 | NA | 1.0E-01 |
| 7440-43-9 Cadmium | 0.51 | NC | NA | 1.0E+00 | 3.4E-06 | NA | 5.0E-04 | NA | 6.8E-03 |
| 16065-83-1 Chromium +3 | 0 | NC | NA | 1.0E+00 | 0.0E+00 | NA | 1.5E+00 | NA | 0.0E+00 |
| 18540-29-9 Chromium +6 | 1960 | NC | NA | 1.0E+00 | 1.3E-02 | NA | 2.0E-02 | NA | 6.5E-01 |
| 7439-92-1 Lead | 110.9 | NC | NA | 5.0E-01 | 3.7E-04 | NA | 7.5E-04 | NA | 4.9E-01 |

| | | |
|---------------|-------------|--------------|
| | Cancer Risk | Hazard Index |
| TOTAL: | 2E-06 | 1E+00 |

NA = Not Applicable
 NC = No Criteria
 Where:

$LADD_{cancer} = [Soil\ Concentration \times UC \times RAF \times IR \times EF \times ED \times EP] / [BW \times AP_{cancer}]$
 $ADD_{non-cancer} = [Soil\ Concentration \times UC \times RAF \times IR \times EF \times ED \times EP] / [BW \times AP_{non-cancer}]$
 $Cancer\ Risk = LADD_{cancer} \times Slope\ Factor$
 $Hazard\ Quotient = ADD_{non-cancer} / Reference\ Dose$
 Unit Conversion (UC) = 1.0E-06 kg/mg
 Relative Absorption Factor (RAF) = CS (unitless) [1]
 Ingestion Rate (IR) = 100 mg/d [1]
 Exposure Duration (ED) = 1 day/event [1]
 Exposure Frequency (EF) - Noncancer = 0.714 event/day [2] - 5 days/week
 Exposure Frequency (EF) - Cancer = 0.329 event/day [2] - 5 days/week for 24 weeks
 Exposure Period (EP) - Noncancer = 0.460 years [2] - 24 weeks
 Exposure Period (EP) - Cancer = 5 years [1]
 Body Weight (BW) - Noncancer = 10.7 kg (1-2 year old)[1]
 Body Weight (BW) - Cancer = 15 kg (1-6 year old) [1]
 Averaging Period Cancer (AP_{cancer}) = 70 years [1]
 Averaging Period Noncancer (AP_{noncancer}) = 0.460 years [2]

Bold = Cancer Risk >1.0E-05 or Hazard Quotient > 1.0E+00

[1] MassDEP, 2007; Park User Soil Imminent Hazard Short-form
 [2] Site-specific information for practices and games during 18-week sport season (includes pre-season and playoffs)

Table 9
Visitor - Child
Dermal Contact with Surface Soil
HH13 - New Bedford High School (Chromium as Chromium VI)
New Bedford, Massachusetts

| Constituent | EPC | | Exposure Estimates | | | Toxicity Values | | Risk Estimates | |
|------------------------|------------------------------------|-----------------------|-----------------------|--------------------------|-------------------------|--|--|-----------------|---------------------|
| | Surface Soil Concentration (mg/kg) | RAF Dermal Cancer (-) | LADD Cancer (mg/kg-d) | RAF Dermal Noncancer (-) | ADD Noncancer (mg/kg-d) | Cancer Slope Factor (Oral) (mg/kg-d) ⁻¹ | Subchronic Noncancer Reference Dose (Oral) (mg/kg-d) | Cancer Risk (-) | Hazard Quotient (-) |
| 1336-36-3 Total PCBs | 0.44 | 0.16 | 8.7E-08 | 0.16 | 2.7E-06 | 2.0E+00 | 5.0E-05 | 2E-07 | 5.5E-02 |
| Metals | | | | | | | | | |
| 7440-38-2 Arsenic | 6.7 | 0.03 | 2.5E-07 | 0.03 | 7.8E-06 | 1.5E+00 | 3.0E-04 | 4E-07 | 2.6E-02 |
| 7440-39-3 Barium | 1078 | NC | NA | 0.05 | 2.1E-03 | NA | 7.0E-02 | NA | 3.0E-02 |
| 7440-43-9 Cadmium | 0.51 | NC | NA | 0.14 | 2.8E-06 | NA | 5.0E-04 | NA | 5.6E-03 |
| 16065-83-1 Chromium +3 | 0 | NC | NA | 0.04 | 0.0E+00 | NA | 1.5E+00 | NA | 0.0E+00 |
| 18540-29-9 Chromium +6 | 1960 | NC | NA | 0.09 | 6.9E-03 | NA | 2.0E-02 | NA | 3.4E-01 |
| 7439-92-1 Lead | 110.9 | NC | NA | 0.006 | 2.6E-05 | NA | 7.5E-04 | NA | 3.5E-02 |

NA = Not Applicable
 NC = No Criteria

Where:

LADD_{cancer} = Soil Concentration x UC1 x SA x SAF x RAF x EF x ED x EP / (BW x AP_{cancer})
 ADD_{non-cancer} = Soil Concentration x UC1 x SA x SAF x RAF x EF x ED x EP / (BW x AP_{non-cancer})
 Cancer Risk = LADD_{cancer} x Slope Factor
 Hazard Quotient = ADD_{non-cancer} / Reference Dose

| | | |
|---|-------|--|
| Unit Conversion (UC1) = | 1E-06 | kg/mg |
| Skin Surface Area (SA) - Noncancer = | 1670 | cm ² /d [1] - (1-2 year old) |
| Skin Surface Area (SA) - Cancer = | 2231 | cm ² /d [1] - (1-6 year old) |
| Soil Adherence Factor (SAF) = | 0.35 | mg/cm ² [1] |
| Relative Absorption Factor (RAF) = | CS | (unitless) [1] |
| Exposure Duration (ED) = | 1 | day/event [1] |
| Exposure Frequency (EF) - Noncancer = | 0.714 | event/day [2] - 5 days/week |
| Exposure Frequency (EF) - Cancer = | 0.329 | event/day [2] - 5 days/week for 24 weeks |
| Exposure Period (EP) - Noncancer = | 0.460 | years [2] - 24 weeks |
| Exposure Period (EP) - Cancer = | 5 | years [1] |
| Body Weight (BW) - Noncancer = | 10.7 | kg (1-2 year old)[1] |
| Body Weight (BW) - Cancer = | 15 | kg (1-6 year old) [1] |
| Averaging Period Cancer (AP _{cancer}) = | 70 | years [1] |
| Averaging Period Noncancer (AP _{noncancer}) = | 0.460 | years [2] |

[1] MassDEP, 2007; Park User Soil Imminent Hazard Short-form
 [2] Site-specific information for practices and games during 18-week sport season (includes pre-season and playoffs)

| | | |
|---------------|-------------|--------------|
| | Cancer Risk | Hazard Index |
| TOTAL: | 5E-07 | 5E-01 |

Bold = Cancer Risk > 1.0E-05 or Hazard Quotient > 1.0E+00

Table 10
 Visitor - Child
 Inhalation of Fugitive Dusts - Exposure Via the Lungs
 HH13 - New Bedford High School (Chromium as Chromium VI)
 New Bedford, Massachusetts

| Constituent | Surface Soil Concentration (mg/kg) | Exposure Estimates | | Toxicity Values | | Risk Estimates | |
|------------------------|------------------------------------|---|---|---|---|-----------------|---------------------|
| | | LADE _{inh} Cancer (ug/m ³) | ADE _{inh} Noncancer (ug/m ³) | Unit Risk Factor (Inh) (ug/m ³) ⁻¹ | Subchronic Reference Conc. (Inh) (ug/m ³) | Cancer Risk (-) | Hazard Quotient (-) |
| 1336-36-3 Total PCBs | 0.44 | 6.5E-08 | 1.6E-06 | 1.0E-04 | 2.0E-02 | 6E-12 | 8.2E-05 |
| Metals | | | | | | | |
| 7440-38-2 Arsenic | 6.7 | 9.9E-07 | 2.5E-05 | 4.3E-03 | 2.5E-03 | 4E-09 | 1.0E-02 |
| 7440-39-3 Barium | 1078 | 1.6E-04 | 4.0E-03 | NA | 5.0E+00 | NA | 8.1E-04 |
| 7440-43-9 Cadmium | 0.51 | 7.5E-08 | 1.9E-06 | 1.8E-03 | 2.0E-02 | 1E-10 | 9.6E-05 |
| 16065-83-1 Chromium +3 | 0 | 0.0E+00 | 0.0E+00 | NA | 3.0E-01 | NA | 0.0E+00 |
| 18540-29-9 Chromium +6 | 1960 | 2.9E-04 | 7.4E-03 | 1.2E-02 | 3.0E-01 | 3E-06 | 2.5E-02 |
| 7439-92-1 Lead | 110.9 | 1.6E-05 | 4.2E-04 | NA | 1.0E+00 | NA | 4.2E-04 |

NA = Not Applicable

Where:

LADE_{cancer} = (OHM x 0.5 X PM10 x IR x RAF x EF x ED x EP x UC1 / (AP_{cancer} x BW)) x (BW assumed/IR assumed)
 ADE_{non-cancer} = (OHM x 0.5 X PM10 x IR x RAF x EF x ED x EP x UC1 / AP_{non-cancer} x BW) x (BW assumed/IR assumed)
 Cancer Risk = LADE_{cancer} x Cancer Slope Factor
 Hazard Quotient = ADE_{non-cancer} / Reference Dose

| | | |
|---------------|-------------|--------------|
| | Cancer Risk | Hazard Index |
| TOTAL: | 3E-06 | 4E-02 |

Bold = Cancer Risk > 1.0E-05 or Hazard Quotient > 1.0E+00

Respirable Dust (PM₁₀) = 60 ug/m³ [4]
 Relative Absorption Factor (RAF) = 1 unitless
 Inhalation Rate (IR) - Noncancer (1-2 year old) = 8.92 l/min [4] - heavy exertion; 1-2 year old; average of male/female
 Inhalation Rate (IR) - Cancer (1-6 year old) = 14.77 l/min [4] - heavy exertion; 1-6 year old; average of male/female
 Exposure Frequency (EF) - Noncancer = 0.714 event/day [5] - 5 days/week
 Exposure Frequency (EF) - Cancer = 0.329 event/day [5] - 5 days/week for 24 weeks
 Exposure Duration (ED) = 1 hours/event [3]
 Exposure Period (EP) - Noncancer = 168 days [5] - 24 weeks
 Exposure Period (EP) - Cancer = 1825 days [1]
 Body Weight (BW) - Noncancer = 10.7 kg (1-2 year old) [1]
 Body Weight (BW) - Cancer = 14.8 kg (1-6 year old) [1]
 Averaging Period Cancer (AP_{cancer}) = 25550 days [1]
 Averaging Period Noncancer (AP_{non-cancer}) = 168 days [5]
 Inhalation Rate assumed (IR assumed) = 20 m³/day [2] - for adjustment of toxicity value
 Body Weight (BW assumed) = 70 kg [2] - for adjustment of toxicity value
 Unit Conversion (UC) = 6.00E-11 (60 min/hour; 1 x 10⁻⁹ kg/ug; 0.001 m³/l)

- [1] MassDEP, 2007; Park User Soil Imminent Hazard Short-form
- [2] MassDEP, 2008; Characterization of Risk Due to Inhalation of Particulates by Construction Workers
- [3] Professional Judgment
- [4] MassDEP, 1995; Guidance for Disposal Site Risk Characterization
- [5] Site-specific information for practices and games during 18-week sport season (includes pre-season and playoffs)

Table 11
 Visitor - Child
 Inhalation of Fugitive Dusts - Exposure Via the GI Tract
 HH13 - New Bedford High School (Chromium as Chromium VI)
 New Bedford, Massachusetts

| Constituent | Surface Soil Concentration (mg/kg) | Exposure Estimates | | | | Toxicity Values | | Risk Estimates | |
|------------------------|------------------------------------|--------------------|--|-----------------------|--|---|--|-----------------|---------------------|
| | | RAF Cancer Ing (-) | LADD _{GI-Soil} Cancer (mg/kg-day) | RAF Noncancer Ing (-) | ADD _{GI-Soil} Noncancer (mg/kg-day) | Cancer Slope Factor (Oral) ¹ (mg/kg-day) ⁻¹ | Subchronic Noncancer Reference Dose (Oral) (mg/kg-day) | Cancer Risk (-) | Hazard Quotient (-) |
| 1336-36-3 Total PCBs | 0.44 | 8.5E-01 | 4.70E-11 | 8.50E-01 | 1.20E-09 | 2.0E+00 | 5.0E-05 | 9E-11 | 2.4E-05 |
| Metals | | | | | | | | | |
| 7440-38-2 Arsenic | 6.70 | 1.0E+00 | 8.48E-10 | 1.00E+00 | 2.15E-08 | 1.5E+00 | 3.0E-04 | 1E-09 | 7.2E-05 |
| 7440-39-3 Barium | 1078 | NC | NA | 1.00E+00 | 3.47E-06 | NA | 7.0E-02 | NA | 5.0E-05 |
| 7440-43-9 Cadmium | 0.51 | NC | NA | 1.00E+00 | 1.64E-09 | NA | 5.0E-04 | NA | 3.3E-06 |
| 16065-83-1 Chromium +3 | 0 | NC | NA | 1.00E+00 | 0.00E+00 | NA | 1.5E+00 | NA | 0.0E+00 |
| 18540-29-9 Chromium +6 | 1960 | NC | NA | 1.00E+00 | 6.30E-06 | NA | 2.0E-02 | NA | 3.2E-04 |
| 7439-92-1 Lead | 110.9 | NC | NA | 5.00E-01 | 1.78E-07 | NA | 7.5E-04 | NA | 2.4E-04 |

NA = Not Applicable

Where:

LADD_{cancer} = (OHM x 1.5 X PM10 x IR x RAF x EF x ED x EP x UC1 / (AP_{cancer} x BW))
 ADD_{non-cancer} = (OHM x 1.5 X PM10 x IR x RAF x EF x ED x EP x UC1 / AP_{non-cancer} x BW)
 Cancer Risk = LADD_{cancer} x Cancer Slope Factor
 Hazard Quotient = ADD_{non-cancer} / Reference Dose

| | | |
|---|----------|---|
| Respirable Dust (PM ₁₀) = | 60 | ug/m ³ [1] |
| Inhalation Rate (IR) - Noncancer (1-2 year old) = | 8.92 | l/min [4] - heavy exertion; 1-2 year old; average of male/female |
| Inhalation Rate (IR) - Cancer (1-6 year old) = | 14.77 | l/min [4] - heavy exertion; 1-6 year old; average of male/female |
| Exposure Frequency (EF) - Noncancer = | 0.714 | event/day [5] - 5 days/week |
| Exposure Frequency (EF) - Cancer = | 0.329 | event/day [5] - 5 days/week for 24 weeks |
| Exposure Duration (ED) = | 1 | hours/event [3] |
| Exposure Period (EP) - Noncancer = | 168 | days [5] - 24 weeks |
| Exposure Period (EP) - Cancer = | 1825 | days [1] |
| Body Weight (BW) - Noncancer = | 10.7 | kg (1-2 year old)[1] |
| Body Weight (BW) - Cancer = | 14.8 | kg (1-6 year old) [1] |
| Averaging Period Cancer (AP _{cancer}) = | 25550 | days [1] |
| Averaging Period Noncancer (AP _{noncancer}) = | 168 | days [5] |
| Unit Conversion (UC1) = | 6.00E-11 | (60 min/hour; 1x 10 ⁻⁹ kg/ug; 0.001 m ³ /l) |

- [1] MassDEP, 2007; Park User Soil Imminent Hazard Short-form
- [2] MassDEP, 2008; Characterization of Risk Due to Inhalation of Particulates by Construction Workers
- [3] Professional Judgment
- [4] MassDEP, 1995; Guidance for Disposal Site Risk Characterization
- [5] Site-specific information for practices and games during 18-week sport season (includes pre-season and playoffs)

| | | |
|---------------|-------------|--------------|
| | Cancer Risk | Hazard Index |
| TOTAL: | 1E-09 | 7E-04 |

Bold = Cancer Risk > 1.0E-05 or Hazard Quotient > 1.0E+00

ATTACHMENT B
PUBLIC NOTIFICATION LETTERS



Wannalancit Mills
650 Suffolk Street, Suite 200
Lowell, MA 01854

978.970.5600 PHONE
978.453.1995 FAX

www.TRCSolutions.com

May 29, 2009

TRC Reference Number: 115058.0000

Mayor Scott W. Lang
City Hall, Room 311
133 William Street
New Bedford, MA 02740

RE: Notice of Immediate Response Action Completion Report
New Bedford High School – Impacted Soil at the HH-13 Area, New Bedford,
Massachusetts; MassDEP RTN 4-21847

Mayor Lang:

On behalf of the City of New Bedford, Massachusetts, and pursuant to 310 CMR 40.1403 of the Massachusetts Contingency Plan (MCP), TRC Environmental Corporation (TRC) has prepared this letter to inform you of the submittal of an Immediate Response Action Completion Report pertaining to soils containing elevated concentrations of arsenic and chromium at the New Bedford High School in New Bedford, Massachusetts. This submittal will be made to the Massachusetts Department of Environmental Protection (MassDEP) by June 1, 2009.

A copy of this document can be obtained from David Fredette in the Department of Environmental Stewardship. If you have any questions concerning this letter please contact me at (978) 656-3565.

Sincerely,
TRC Environmental Corporation

A handwritten signature in cursive script that reads "David M. Sullivan".

David M. Sullivan, CHMM, LSP
Sr. Project Manager

Cc: David Fredette, New Bedford Department of Environmental Stewardship



Wannalancit Mills
650 Suffolk Street, Suite 200
Lowell, MA 01854

978.970.5600 PHONE
978.453.1995 FAX

www.TRCSolutions.com

May 29, 2009

TRC Reference Number: 115058.0000

Marianne B. De Souza
Health Department
1213 Purchase Street
First Floor
New Bedford, MA 02740

RE: Notice of Immediate Response Action Completion Report
New Bedford High School – Impacted Soil at the HH-13 Area, New Bedford,
Massachusetts; MassDEP RTN 4-21847

Ms. De Souza:

On behalf of the City of New Bedford, Massachusetts, and pursuant to 310 CMR 40.1403 of the Massachusetts Contingency Plan (MCP), TRC Environmental Corporation (TRC) has prepared this letter to inform you of the submittal of an Immediate Response Action Completion Report pertaining to soils containing elevated concentrations of arsenic and chromium at the New Bedford High School in New Bedford, Massachusetts. This submittal will be made to the Massachusetts Department of Environmental Protection (MassDEP) by June 1, 2009.

A copy of this document can be obtained from David Fredette in the Department of Environmental Stewardship. If you have any questions concerning this letter please contact me at (978) 656-3565.

Sincerely,
TRC Environmental Corporation

A handwritten signature in cursive script that reads "David M. Sullivan".

David M. Sullivan, CHMM, LSP
Sr. Project Manager

Cc: David Fredette, New Bedford Department of Environmental Stewardship

ATTACHMENT C
SOIL BORING LOGS



Wannalancit Mills
 650 Suffolk Street
 Lowell MA
 Telephone: 978-970-5600
 Fax: 978-453-1995

BORING/WELL CONSTRUCTION LOG

CLIENT/PROJECT NUMBER City of New Bedford (NBHS)/115058 SCREEN TYPE/SLOT 0.010 2-inch slotted PVC: 4-14 feet
 BORING/WELL NUMBER MW-HH-13 FILTER PACK TYPE Sand
 TRC GEOLOGIST J. Saunders SEAL TYPE Bentonite
 DRILLING CONTRACTOR/FOREMAN New England Geotech/Steve Perry DEPTH TO WATER (Approximate Feet) 6.5
 DATE DRILLED 4/3/09 TOTAL DEPTH (Feet) 14
 LOCATION NBHS - North of House #2 (C-block) GROUND ELEVATION (Feet, NAVD 88) TBD
 SAMPLING METHOD 48" Macrocore REFERENCE ELEVATION (Feet, NAVD 88) TBD
 DRILLING METHOD Direct Push/6620 DT Track Rig
 NOTES Samples collected analyzed for Dibenzofuran

| DEPTH (ft. BGL) | BLOW COUNTS | PEN/REC (INCHES) | CORE # | TRC ID | GRAPHIC LOG | LITHOLOGIC DESCRIPTION | Field Testing (ppm) | SAMPLE ID/TIME | WELL DIAGRAM |
|-----------------|-------------|------------------|--------|--------|-------------|---|---------------------|--------------------|---|
| 1 | NA | 48/22 | | S-1 | | 12" Dark brown SILT and fine SAND, trace roots and fine gravel, moist, no odor, no staining. | | HH-13(0-1) 1515 | <p>Concrete Seal/Roadbox 2-inch PVC Riser in Sand 1 foot Bentonite Seal 2-inch PVC Riser in Sand 0.010 Slotted PVC Screen in Sand</p> |
| 2 | | | | | | 1" Pulverized GRAVEL. | | | |
| 2 | | | | | | 9" FILL (silty matrix with ash, trace to little coal, brick, plastic and wood debris), moist, no odor, no staining. | 0.0 | HH-13(1-3) 1520 | |
| 4 | NA | 48/20 | | S-2 | | 18" Dark brown to black organic PEAT, wet, no odor, no staining. | | | |
| 6 | | | | | | 2" Gray fine SAND and GRAVEL, wet, no odor, no staining. | 0.0 | | |
| 8 | NA | 48/25 | | S-3 | | 28" Gray fine SAND, little silt, wet, no odor, no staining. | | | |
| 12 | | NA | | NA | | No Sample Collected | | | |
| 13 | | | | | | | NA | | |
| 14 | | | | | | End of Boring - Terminated at 14 feet | | | |



Wannalancit Mills
 650 Suffolk Street
 Lowell MA
 Telephone: 978-970-5600
 Fax: 978-453-1995

BORING/WELL CONSTRUCTION LOG

CLIENT/PROJECT NUMBER City of New Bedford (NBHS)/115058 SCREEN TYPE/SLOT NA
 BORING/WELL NUMBER HH-13A FILTER PACK TYPE NA
 TRC GEOLOGIST J. Saunders SEAL TYPE NA
 DRILLING CONTRACTOR/FOREMAN New England Geotech/Bill Meadows DEPTH TO WATER (Approximate Feet) NA
 DATE DRILLED 3/11/09 TOTAL DEPTH (Feet) 4
 LOCATION NBHS - Approximately 10 feet North of center point GROUND ELEVATION (Feet, NAVD 88) TBD
 SAMPLING METHOD 48" Macrocore REFERENCE ELEVATION (Feet, NAVD 88) NA
 DRILLING METHOD Direct Push/5400 Truck Rig
 NOTES Samples analyzed for PCBs, PAHs, and Metals



| DEPTH (ft. BGL) | BLOW COUNTS | PEN/REC (INCHES) | CORE # | TRC ID | GRAPHIC LOG | LITHOLOGIC DESCRIPTION | Field Testing (ppm) | SAMPLE ID/TIME | WELL DIAGRAM |
|-----------------|-------------|------------------|--------|--------|-------------|---|---------------------|---------------------|------------------------------|
| 1 | NA | 48/30 | | S-1 | | 10" Dark brown organic TOPSOIL, trace roots, grass, and fine gravel, moist, no odor, no staining. | | HH-13A(0-1) 1720 | No Monitoring Well Installed |
| | | | | | | 6" Tan to brown fine SAND, little silt and medium to coarse sand. | | | |
| 2 | | | | | | 14" Dark brown silty sand matrix with FILL (wood debris, ash, trace glass, plastic and slag), moist, slight waste-like odor, no staining. | 0.0 | HH-13A(1-3) 1725 | |
| 4 | | | | | | End of Boring - Terminated at 4 feet | | | |



Wannalancit Mills
 650 Suffolk Street
 Lowell MA
 Telephone: 978-970-5600
 Fax: 978-453-1995

BORING/WELL CONSTRUCTION LOG

CLIENT/PROJECT NUMBER City of New Bedford (NBHS)/115058 SCREEN TYPE/SLOT NA
 BORING/WELL NUMBER HH-13B FILTER PACK TYPE NA
 TRC GEOLOGIST J. Saunders SEAL TYPE NA
 DRILLING CONTRACTOR/FOREMAN New England Geotech/Bill Meadows DEPTH TO WATER (Approximate Feet) NA
 DATE DRILLED 3/11/09 TOTAL DEPTH (Feet) 4
 LOCATION NBHS - Approximately 10 feet West of center point GROUND ELEVATION (Feet, NAVD 88) TBD
 SAMPLING METHOD 48" Macrocore REFERENCE ELEVATION (Feet, NAVD 88) NA
 DRILLING METHOD Direct Push/5400 Truck Rig
 NOTES Samples analyzed for PCBs, PAHs, and Metals

| DEPTH (ft. BGL) | BLOW COUNTS | PEN/REC (INCHES) | CORE # | TRC ID | GRAPHIC LOG | LITHOLOGIC DESCRIPTION | Field Testing (ppm) | SAMPLE ID/TIME | WELL DIAGRAM |
|-----------------|-------------|------------------|--------|--------|--|--|---------------------|---------------------|------------------------------|
| 1 | NA | 48/30 | | S-1 |  | 12" Dark brown SILT and fine SAND, trace fine gravel, roots and grass, moist, no odor, no staining. | | HH-13B(0-1) 1555 | No Monitoring Well Installed |
| 2 | | | | |  | 18" FILL (ash, coal, slag, trace glass, and fibrous material (at approximately 30 inches)), moist, no odor, no staining. | 0.0 | HH-13B(1-3) 1600 | |
| 3 | | | | | | | | | |
| 4 | | | | | | End of Boring - Terminated at 4 feet | | | |



Wannalancit Mills
 650 Suffolk Street
 Lowell MA
 Telephone: 978-970-5600
 Fax: 978-453-1995

BORING/WELL CONSTRUCTION LOG

CLIENT/PROJECT NUMBER City of New Bedford (NBHS)/115058 SCREEN TYPE/SLOT NA
 BORING/WELL NUMBER HH-13C FILTER PACK TYPE NA
 TRC GEOLOGIST J. Saunders SEAL TYPE NA
 DRILLING CONTRACTOR/FOREMAN New England Geotech/Bill Meadows DEPTH TO WATER (Approximate Feet) NA
 DATE DRILLED 3/11/09 TOTAL DEPTH (Feet) 4
 LOCATION NBHS - Approximately 10 feet South of center point GROUND ELEVATION (Feet, NAVD 88) TBD
 SAMPLING METHOD 48" Macrocore REFERENCE ELEVATION (Feet, NAVD 88) NA
 DRILLING METHOD Direct Push/5400 Truck Rig
 NOTES Samples analyzed for PCBs, PAHs, and Metals

| DEPTH (ft. BGL) | BLOW COUNTS | PEN/REC (INCHES) | CORE # | TRC ID | GRAPHIC LOG | LITHOLOGIC DESCRIPTION | Field Testing (ppm) | SAMPLE ID/TIME | WELL DIAGRAM |
|-----------------|-------------|------------------|--------|--------|-------------|---|---------------------|------------------------------------|------------------------------|
| | NA | 48/24 | | S-1 | | 8" Dark brown organic TOPSOIL, trace roots, grass and fine to medium gravel, moist, no odor, no staining. | | HH-13C(0-1) 1650 Plus MS/DUP | No Monitoring Well Installed |
| 1 | | | | | | 10" Tan fine SAND, little silt, moist, no odor, no staining. | | | |
| 2 | | | | | | 6" FILL (ash, slag, trace coal, glass, and metal), moist, no odor, no staining. | 0.0 | HH-13C(1-3) 1655 | |
| 4 | | | | | | End of Boring - Terminated at 4 feet | | | |



Wannalancit Mills
 650 Suffolk Street
 Lowell MA
 Telephone: 978-970-5600
 Fax: 978-453-1995

BORING/WELL CONSTRUCTION LOG

CLIENT/PROJECT NUMBER City of New Bedford (NBHS)115058 SCREEN TYPE/SLOT NA
 BORING/WELL NUMBER HH-13D FILTER PACK TYPE NA
 TRC GEOLOGIST J. Saunders SEAL TYPE NA
 DRILLING CONTRACTOR/FOREMAN New England Geotech/Bill Meadows DEPTH TO WATER (Approximate Feet) NA
 DATE DRILLED 3/11/09 TOTAL DEPTH (Feet) 4
 LOCATION NBHS - Approximately 10 feet East of center point GROUND ELEVATION (Feet, NAVD 88) TBD
 SAMPLING METHOD 48" Macrocore REFERENCE ELEVATION (Feet, NAVD 88) NA
 DRILLING METHOD Direct Push/5400 Truck Rig
 NOTES Samples analyzed for PCBs, PAHs, and Metals

| DEPTH (ft. BGL) | BLOW COUNTS | PEN/REC (INCHES) | CORE # | TRC ID | GRAPHIC LOG | LITHOLOGIC DESCRIPTION | Field Testing (ppm) | SAMPLE ID/TIME | WELL DIAGRAM |
|-----------------|-------------|------------------|--------|--------|-------------|---|---------------------|---|------------------------------|
| 1 | NA | 48/36 | | S-1 | | 6" Dark brown organic TOPSOIL, trace grass, roots, and fine gravel, moist, no odor, no staining. 4" Gray-brown fine SAND, little silt, trace glass, moist, no odor, no staining. 26" FILL (silty matrix with ash and slag, trace glass and wood debris), moist, no odor, no staining. | | HH-13D(0-1) 1610 | No Monitoring Well Installed |
| 2 | | | | | | | 0.0 | HH-13D(1-3) 1615 HH-113D(1-3) 1715 | |
| 3 | | | | | | | | | |
| 4 | | | | | | End of Boring - Terminated at 4 feet | | | |



Wanna'ancit Mills
 650 Suffolk Street
 Lowell MA
 Telephone: 978-970-5600
 Fax: 978-453-1995

BORING/WELL CONSTRUCTION LOG

CLIENT/PROJECT NUMBER City of New Bedford (NBHS)/115058 SCREEN TYPE/SLOT NA
 BORING/WELL NUMBER HH-13E FILTER PACK TYPE NA
 TRC GEOLOGIST J. Saunders SEAL TYPE NA
 DRILLING CONTRACTOR/FOREMAN New England Geotech/Bill Meadows DEPTH TO WATER (Approximate Feet) NA
 DATE DRILLED 3/11/09 TOTAL DEPTH (Feet) 4
 LOCATION NBHS - Approximately 20 feet East of center point GROUND ELEVATION (Feet, NAVD 88) TBD
 SAMPLING METHOD 48" Macrocore REFERENCE ELEVATION (Feet, NAVD 88) NA
 DRILLING METHOD Direct Push/5400 Truck Rig
 NOTES Samples analyzed for PCBs (Hold), PAHs (Hold), and Metals (Hold)

| DEPTH (ft. BGL) | BLOW COUNTS | PEN/REC (INCHES) | CORE # | TRC ID | GRAPHIC LOG | LITHOLOGIC DESCRIPTION | Field Testing (ppm) | SAMPLE ID/ TIME | WELL DIAGRAM |
|-----------------|-------------|------------------|--------|--------|-------------|--|---------------------|---------------------|------------------------------|
| 1 | NA | 48/30 | | S-1 | | 8" Dark brown organic TOPSOIL, trace grass, roots, and fine gravel, slightly moist, no odor, no staining. 2" Tan fine SAND, moist, no odor, no staining. 20" FILL (silty matrix with brick, ash/cinders, trace glass and rubber (in cutting shoe)), moist, no odor, no staining. | | HH-13E(0-1) 1630 | No Monitoring Well Installed |
| 2 | | | | | | | 0.0 | HH-13E(1-3) 1635 | |
| 3 | | | | | | | | | |
| 4 | | | | | | End of Boring - Terminated at 4 feet | | | |



Wannalancit Mills
 650 Suffolk Street
 Lowell MA
 Telephone: 978-970-5600
 Fax: 978-453-1995

BORING/WELL CONSTRUCTION LOG

CLIENT/PROJECT NUMBER City of New Bedford (NBHS)/115058 SCREEN TYPE/SLOT NA
 BORING/WELL NUMBER HH-13F FILTER PACK TYPE NA
 TRC GEOLOGIST J. Saunders SEAL TYPE NA
 DRILLING CONTRACTOR/FOREMAN New England Geotech/Bill Meadows DEPTH TO WATER (Approximate Feet) NA
 DATE DRILLED 3/11/09 TOTAL DEPTH (Feet) 4
 LOCATION NBHS - Approximately 20 feet North of center point GROUND ELEVATION (Feet, NAVD 88) TBD
 SAMPLING METHOD 48" Macrocore REFERENCE ELEVATION (Feet, NAVD 88) NA
 DRILLING METHOD Direct Push/5400 Truck Rig
 NOTES Samples analyzed for PCBs (Hold), PAHs (Hold), and Metals (Hold)

| DEPTH (ft. BGL) | BLOW COUNTS | PEN/REC (INCHES) | CORE # | TRC ID | GRAPHIC LOG | LITHOLOGIC DESCRIPTION | Field Testing (ppm) | SAMPLE ID/TIME | WELL DIAGRAM |
|-----------------|-------------|------------------|--------|--------|--------------------------------------|--|---------------------|---------------------|------------------------------|
| 1 | NA | 48/30 | | S-1 | | 6" Dark brown organic TOPSOIL, trace grass and roots, moist, no odor, no staining. | 0.0 | HH-13F(0-1) 1730 | No Monitoring Well Installed |
| | | | | | | 6" Tan to brown fine SAND, little silt, trace fine gravel, moist, no odor, no staining. | | | |
| | | | | | | 8" Dark brown SILT, moist, no odor, no staining. | | | |
| | | | | | | 5" Gray-brown fine to medium SAND, trace coarse sand and fine gravel, moist, no odor, no staining. | | | |
| | | | | | | 5" Dark gray FILL (ash, wood, trace coal, slag and metal), moist, slight waste like odor, no staining. | | | |
| 4 | | | | | End of Boring - Terminated at 4 feet | | | | |



Wannalancit Mills
 650 Suffolk Street
 Lowell MA
 Telephone: 978-970-5600
 Fax: 978-453-1995

BORING/WELL CONSTRUCTION LOG

CLIENT/PROJECT NUMBER City of New Bedford (NBHS)/115058 SCREEN TYPE/SLOT NA
 BORING/WELL NUMBER HH-13G FILTER PACK TYPE NA
 TRC GEOLOGIST J. Saunders SEAL TYPE NA
 DRILLING CONTRACTOR/FOREMAN New England Geotech/Bill Meadows DEPTH TO WATER (Approximate Feet) NA
 DATE DRILLED 3/11/09 TOTAL DEPTH (Feet) 4
 LOCATION NBHS - Approximately 20 feet West of center point GROUND ELEVATION (Feet, NAVD 88) TBD
 SAMPLING METHOD 48" Macrocore REFERENCE ELEVATION (Feet, NAVD 88) NA
 DRILLING METHOD Direct Push/5400 Truck Rig
 NOTES Samples analyzed for PCBs (Hold), PAHs (Hold), and Metals (Hold)

| DEPTH (ft. BGL) | BLOW COUNTS | PEN/REC (INCHES) | CORE # | TRC ID | GRAPHIC LOG | LITHOLOGIC DESCRIPTION | Field Testing (ppm) | SAMPLE ID/TIME | WELL DIAGRAM |
|-----------------|-------------|------------------|--------|--------|-------------|---|---------------------|---------------------|-------------------------|
| 1 | NA | 48/30 | | S-1 | | 24" Dark brown SILT and fine SAND, trace roots and grass, little fill (coal, slag, and glass), moist, no odor, no staining. | | HH-13G(0-1) 1545 | No Monitoring Installed |
| 2 | | | | | | 6" FILL (ash, coal, slag and glass, trace wood debris), moist, no odor, no staining. | 0.0 | HH-13G(1-3) 1550 | |
| 4 | | | | | | End of Boring - Terminated at 4 feet | | | |



Wannalancit Mills
 650 Suffolk Street
 Lowell MA
 Telephone: 978-970-5600
 Fax: 978-453-1995

BORING/WELL CONSTRUCTION LOG

CLIENT/PROJECT NUMBER City of New Bedford (NBHS)/115058 SCREEN TYPE/SLOT NA
 BORING/WELL NUMBER HH-13H FILTER PACK TYPE NA
 TRC GEOLOGIST J. Saunders SEAL TYPE NA
 DRILLING CONTRACTOR/FOREMAN New England Geotech/Bill Meadows DEPTH TO WATER (Approximate Feet) NA
 DATE DRILLED 3/11/09 TOTAL DEPTH (Feet) 4
 LOCATION NBHS - Approximately 20 feet South of center point GROUND ELEVATION (Feet, NAVD 88) TBD
 SAMPLING METHOD 48" Macrocore REFERENCE ELEVATION (Feet, NAVD 88) NA
 DRILLING METHOD Direct Push/5400 Truck Rig
 NOTES Samples analyzed for PCBs (Hold), PAHs (Hold), and Metals (Hold)

| DEPTH (ft. BGL) | BLOW COUNTS | PEN/REC (INCHES) | CORE # | TRC ID | GRAPHIC LOG | LITHOLOGIC DESCRIPTION | Field Testing (ppm) | SAMPLE ID/TIME | WELL DIAGRAM |
|-----------------|-------------|------------------|--------|--------|-------------|---|---------------------|---------------------|------------------------------|
| 1 | NA | 48/34 | | S-1 | | 12" Dark brown organic TOPSOIL, trace roots, grass, and fine to medium gravel, moist, no odor, no staining. | | HH-13H(0-1) 1640 | No Monitoring Well Installed |
| 2 | | | | | | 18" Tan fine SAND, little silt, trace medium sand, moist, no odor, no staining. | 0.0 | HH-13H(1-3) 1645 | |
| 3 | | | | | | 4" Rusty colored FILL (ash, slag, trace metal and glass), moist, no odor, no staining. | | | |
| 4 | | | | | | End of Boring - Terminated at 4 feet | | | |

ATTACHMENT D

**SAMPLE RESULTS FROM LABORATORY
REPORTS**

**1D-1
PCB ANALYSIS DATA SHEET**

| | |
|--|-----------------------------------|
| Laboratory Name: <u>Northeast Analytical, Inc.</u> | SDG No: <u>09030065</u> |
| ELAP ID No: <u>11078</u> | LRF ID: <u>09030065-07</u> |
| Matrix: <u>Soil</u> | Client ID: <u>HH-13B (0-1)</u> |
| Sample wt(Dry)/vol: <u>7.8675 g</u> | Lab Sample ID: <u>AM02267</u> |
| Percent Moisture: <u>24.3</u> | Date Received: <u>03/13/2009</u> |
| Extraction: <u>SOXHLET</u> | Date Extracted: <u>03/16/2009</u> |
| Conc. Extract Volume: <u>25000 uL</u> | Date Analyzed: <u>03/18/2009</u> |
| Method: <u>SW-846 8082 (PCB)</u> | Dilution Factor: <u>1</u> |
| | Sulfur Cleanup: <u>YES</u> |

Column 1 Information:

GC Column: PHENOMENEX, NARROWBORE CAPILLARY, ZB-5, 30M; ID: 0.25 mm
 Injection Volume: 1.0 uL
 Lab File ID: GC20B-342-12

Column 2 Information:

GC Column: J&W, NARROWBORE CAPILLARY, DB-1, 30M; ID: 0.25 mm
 Injection Volume: 1.0 uL
 Lab File ID: GC20F-381-12

| Column Number | CAS NO | COMPOUND NAME | CONCENTRATION | |
|---------------|------------|---------------|---------------|----|
| | | | UG/G | Q |
| 1 | 12674-11-2 | Aroclor 1016 | 0.0636 | U |
| 1 | 11104-28-2 | Aroclor 1221 | 0.0636 | U |
| 1 | 11141-16-5 | Aroclor 1232 | 0.0636 | U |
| 1 | 53469-21-9 | Aroclor 1242 | 0.0636 | U |
| 1 | 12672-29-6 | Aroclor 1248 | 0.0636 | U |
| 1 | 11097-69-1 | Aroclor 1254 | 0.833 | AF |
| 1 | 11096-82-5 | Aroclor 1260 | 0.0636 | U |

Laboratory Qualifiers:

AF-Aroclor 1254 is being reported as the best Aroclor match. The sample exhibits an altered PCB pattern.
 U - Denotes analyte not detected at concentration greater than or equal to the Practical Quantitation Limit (PQL). PQLs are adjusted for sample weight/volume and dilution factors.

**1D-1
PCB ANALYSIS DATA SHEET**

| | |
|--|-----------------------------------|
| Laboratory Name: <u>Northeast Analytical, Inc.</u> | SDG No: <u>09030065</u> |
| ELAP ID No: <u>11078</u> | LRF ID: <u>09030065-09</u> |
| Matrix: <u>Soil</u> | Client ID: <u>HH-13D (0-1)</u> |
| Sample wt(Dry)/vol: <u>9.1510 g</u> | Lab Sample ID: <u>AM02269</u> |
| Percent Moisture: <u>13.8</u> | Date Received: <u>03/13/2009</u> |
| Extraction: <u>SOXHLET</u> | Date Extracted: <u>03/16/2009</u> |
| Conc. Extract Volume: <u>25000 uL</u> | Date Analyzed: <u>03/18/2009</u> |
| Method: <u>SW-846 8082 (PCB)</u> | Dilution Factor: <u>1</u> |
| | Sulfur Cleanup: <u>YES</u> |

Column 1 Information:

GC Column: J&W, NARROWBORE CAPILLARY, DB-1, 30M; ID: 0.25 mm
 Injection Volume: 1.0 uL
 Lab File ID: GC20F-381-14

Column 2 Information:

GC Column: PHENOMENEX, NARROWBORE CAPILLARY, ZB-5, 30M; ID: 0.25 mm
 Injection Volume: 1.0 uL
 Lab File ID: GC20B-342-14

| Column Number | CAS NO | COMPOUND NAME | CONCENTRATION | Q |
|---------------|------------|---------------|---------------|----|
| | | | UG/G | |
| 1 | 12674-11-2 | Aroclor 1016 | 0.0546 | U |
| 1 | 11104-28-2 | Aroclor 1221 | 0.0546 | U |
| 1 | 11141-16-5 | Aroclor 1232 | 0.0546 | U |
| 1 | 53469-21-9 | Aroclor 1242 | 0.0546 | U |
| 1 | 12672-29-6 | Aroclor 1248 | 0.0546 | U |
| 1 | 11097-69-1 | Aroclor 1254 | 0.670 | AF |
| 1 | 11096-82-5 | Aroclor 1260 | 0.0546 | U |

Laboratory Qualifiers:

AF-Aroclor 1254 is being reported as the best Aroclor match. The sample exhibits an altered PCB pattern.
 U - Denotes analyte not detected at concentration greater than or equal to the Practical Quantitation Limit (PQL). PQLs are adjusted for sample weight/volume and dilution factors.

**1D-1
PCB ANALYSIS DATA SHEET**

| | |
|--|-----------------------------------|
| Laboratory Name: <u>Northeast Analytical, Inc.</u> | SDG No: <u>09030065</u> |
| ELAP ID No: <u>11078</u> | LRF ID: <u>09030065-16</u> |
| Matrix: <u>Soil</u> | Client ID: <u>HH-13C (0-1)</u> |
| Sample wt(Dry)/vol: <u>8.9852 g</u> | Lab Sample ID: <u>AM02276</u> |
| Percent Moisture: <u>17.4</u> | Date Received: <u>03/13/2009</u> |
| Extraction: <u>SOXHLET</u> | Date Extracted: <u>03/16/2009</u> |
| Conc. Extract Volume: <u>25000 uL</u> | Date Analyzed: <u>03/18/2009</u> |
| Method: <u>SW-846 8082 (PCB)</u> | Dilution Factor: <u>1</u> |
| | Sulfur Cleanup: <u>YES</u> |

Column 1 Information:

GC Column: PHENOMENEX, NARROWBORE CAPILLARY, ZB-5, 30M; ID: 0.25 mm
 Injection Volume: 1.0 uL
 Lab File ID: GC20B-342-17

Column 2 Information:

GC Column: J&W, NARROWBORE CAPILLARY, DB-1, 30M; ID: 0.25 mm
 Injection Volume: 1.0 uL
 Lab File ID: GC20F-381-17

| Column Number | CAS NO | COMPOUND NAME | CONCENTRATION | |
|---------------|------------|---------------|---------------|----|
| | | | UG/G | Q |
| 1 | 12674-11-2 | Aroclor 1016 | 0.0556 | U |
| 1 | 11104-28-2 | Aroclor 1221 | 0.0556 | U |
| 1 | 11141-16-5 | Aroclor 1232 | 0.0556 | U |
| 1 | 53469-21-9 | Aroclor 1242 | 0.0556 | U |
| 1 | 12672-29-6 | Aroclor 1248 | 0.0556 | U |
| 1 | 11097-69-1 | Aroclor 1254 | 0.142 | AF |
| 1 | 11096-82-5 | Aroclor 1260 | 0.0556 | U |

Laboratory Qualifiers:

AF-Aroclor 1254 is being reported as the best Aroclor match. The sample exhibits an altered PCB pattern.
 U - Denotes analyte not detected at concentration greater than or equal to the Practical Quantitation Limit (PQL). PQLs are adjusted for sample weight/volume and dilution factors.

**1D-1
PCB ANALYSIS DATA SHEET**

| | | | |
|-----------------------|-----------------------------------|------------------|---------------------|
| Laboratory Name: | <u>Northeast Analytical, Inc.</u> | SDG No: | <u>09030065</u> |
| ELAP ID No: | <u>11078</u> | LRF ID: | <u>09030065-18</u> |
| Matrix: | <u>Soil</u> | Client ID: | <u>HH-13A (0-1)</u> |
| Sample wt(Dry)/vol: | <u>8.5455 g</u> | Lab Sample ID: | <u>AM02278</u> |
| Percent Moisture: | <u>15.6</u> | Date Received: | <u>03/13/2009</u> |
| Extraction: | <u>SOXHLET</u> | Date Extracted: | <u>03/16/2009</u> |
| Conc. Extract Volume: | <u>25000 uL</u> | Date Analyzed: | <u>03/19/2009</u> |
| Method: | <u>SW-846 8082 (PCB)</u> | Dilution Factor: | <u>1</u> |
| | | Sulfur Cleanup: | <u>YES</u> |

Column 1 Information:

GC Column: PHENOMENEX, NARROWBORE CAPILLARY, ZB-5, 30M; ID: 0.25 mm
 Injection Volume: 1.0 uL
 Lab File ID: GC20B-342-22

Column 2 Information:

GC Column: J&W, NARROWBORE CAPILLARY, DB-1, 30M; ID: 0.25 mm
 Injection Volume: 1.0 uL
 Lab File ID: GC20F-381-22

| Column Number | CAS NO | COMPOUND NAME | CONCENTRATION | Q |
|---------------|------------|---------------|---------------|----|
| | | | UG/G | |
| 1 | 12674-11-2 | Aroclor 1016 | 0.0585 | U |
| 1 | 11104-28-2 | Aroclor 1221 | 0.0585 | U |
| 1 | 11141-16-5 | Aroclor 1232 | 0.0585 | U |
| 1 | 53469-21-9 | Aroclor 1242 | 0.0585 | U |
| 1 | 12672-29-6 | Aroclor 1248 | 0.0585 | U |
| 1 | 11097-69-1 | Aroclor 1254 | 0.104 | AF |
| 1 | 11096-82-5 | Aroclor 1260 | 0.0585 | U |

Laboratory Qualifiers:

AF-Aroclor 1254 is being reported as the best Aroclor match. The sample exhibits an altered PCB pattern.
 U - Denotes analyte not detected at concentration greater than or equal to the Practical Quantitation Limit (PQL). PQLs are adjusted for sample weight/volume and dilution factors.



39 Spruce Street ° East Longmeadow, MA 01028 ° FAX 413/525-6405 ° TEL. 413/525-2332

DAVID SULLIVAN
 TRC SOLUTIONS - LOWELL
 650 SUFFOLK STREET
 LOWELL, MA 01852

3/19/2009
 Page 4 of 33

Purchase Order No.:

Project Location: CITY OF NEW BEDFORD (NBHS)
 Date Received: 3/12/2009
 Field Sample #: HH-113D (1-3)
 Sample ID : 09B07545
 Sample Matrix: SOIL

LIMS-BAT #: LIMIT-23901
 Job Number: 115058

‡Sampled : 3/11/2009
 Not Specified

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|---------|--------------|---------|---------------|---------|------|------------|----|------|
| | | | | | | Lo | Hi | |
| Arsenic | mg/kg dry wt | 14.5 | 03/18/09 | OP | 3.22 | | | |

Field Sample #: HH-13A (0-1)

Sample ID : 09B07548
 Sample Matrix: SOIL

‡Sampled : 3/11/2009
 Not Specified

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|---------|--------------|---------|---------------|---------|------|------------|----|------|
| | | | | | | Lo | Hi | |
| Arsenic | mg/kg dry wt | ND | 03/18/09 | OP | 2.94 | | | |

Field Sample #: HH-13A (1-3)

Sample ID : 09B07549
 Sample Matrix: SOIL

‡Sampled : 3/11/2009
 Not Specified

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|---------|--------------|---------|---------------|---------|------|------------|----|------|
| | | | | | | Lo | Hi | |
| Arsenic | mg/kg dry wt | 10.9 | 03/18/09 | OP | 2.89 | | | |

Field Sample #: HH-13B (0-1)

Sample ID : 09B07541
 Sample Matrix: SOIL

‡Sampled : 3/11/2009
 Not Specified

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|---------|--------------|---------|---------------|---------|------|------------|----|------|
| | | | | | | Lo | Hi | |
| Arsenic | mg/kg dry wt | 40.0 | 03/18/09 | OP | 3.33 | | | |

Field Sample #: HH-13B (1-3)

Sample ID : 09B07542
 Sample Matrix: SOIL

‡Sampled : 3/11/2009
 Not Specified

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|---------|--------------|---------|---------------|---------|------|------------|----|------|
| | | | | | | Lo | Hi | |
| Arsenic | mg/kg dry wt | ND | 03/18/09 | OP | 2.97 | | | |

RL = Reporting Limit

ND = Not Detected at or above the Reporting Limit

NM = Not Measured

* = See end of report for comments and notes applying to this sample

‡ = See attached chain-of-custody record for time sampled

SPEC LIMIT = a client specified recommended or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.



39 Spruce Street ° East Longmeadow, MA 01028 ° FAX 413/525-6405 ° TEL. 413/525-2332

DAVID SULLIVAN
 TRC SOLUTIONS - LOWELL
 650 SUFFOLK STREET
 LOWELL, MA 01852

3/19/2009
 Page 6 of 33

Purchase Order No.:

Project Location: CITY OF NEW BEDFORD (NBHS)
 Date Received: 3/12/2009
 Field Sample #: HH-113D (1-3)

LIMS-BAT #: LIMT-23901
 Job Number: 115058

Sample ID: 09B07545 ‡Sampled: 3/11/2009
 Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|--------|--------------|---------|---------------|---------|------|------------|----|------|
| | | | | | | Lo | Hi | |
| Barium | mg/kg dry wt | 3330 | 03/18/09 | OP | 6.43 | | | |

Field Sample #: HH-13A (0-1)

Sample ID: 09B07548 ‡Sampled: 3/11/2009
 Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|--------|--------------|---------|---------------|---------|------|------------|----|------|
| | | | | | | Lo | Hi | |
| Barium | mg/kg dry wt | 20.0 | 03/18/09 | OP | 5.87 | | | |

Field Sample #: HH-13A (1-3)

Sample ID: 09B07549 ‡Sampled: 3/11/2009
 Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|--------|--------------|---------|---------------|---------|------|------------|----|------|
| | | | | | | Lo | Hi | |
| Barium | mg/kg dry wt | 1280 | 03/18/09 | OP | 5.77 | | | |

Field Sample #: HH-13B (0-1)

Sample ID: 09B07541 ‡Sampled: 3/11/2009
 Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|--------|--------------|---------|---------------|---------|------|------------|----|------|
| | | | | | | Lo | Hi | |
| Barium | mg/kg dry wt | 7920 | 03/19/09 | OP | 6.65 | | | |

Field Sample #: HH-13B (1-3)

Sample ID: 09B07542 ‡Sampled: 3/11/2009
 Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|--------|--------------|---------|---------------|---------|------|------------|----|------|
| | | | | | | Lo | Hi | |
| Barium | mg/kg dry wt | 142 | 03/18/09 | OP | 5.93 | | | |

RL = Reporting Limit

ND = Not Detected at or above the Reporting Limit

NM = Not Measured

* = See end of report for comments and notes applying to this sample

‡ = See attached chain-of-custody record for time sampled

SPEC LIMIT = a client specified recommended or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.



39 Spruce Street ° East Longmeadow, MA 01028 ° FAX 413/525-6405 ° TEL. 413/525-2332

DAVID SULLIVAN
TRC SOLUTIONS - LOWELL
650 SUFFOLK STREET
LOWELL, MA 01852

3/19/2009
Page 7 of 33

Purchase Order No.:

Project Location: CITY OF NEW BEDFORD (NBHS)
Date Received: 3/12/2009
Field Sample # : HH-13C (0-1) QC

LIMS-BAT #: LIMT-23901
Job Number: 115058

Sample ID : 09B07546 ‡Sampled : 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit Lo Hi | P/ F |
|--------|--------------|---------|---------------|---------|------|---------------------|------|
| Barium | mg/kg dry wt | 41.9 | 03/18/09 | OP | 5.79 | | |

Field Sample # : HH-13C (1-3)

Sample ID : 09B07547 ‡Sampled : 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit Lo Hi | P/ F |
|--------|--------------|---------|---------------|---------|------|---------------------|------|
| Barium | mg/kg dry wt | 6780 | 03/19/09 | OP | 8.07 | | |

Field Sample # : HH-13D (0-1)

Sample ID : 09B07543 ‡Sampled : 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit Lo Hi | P/ F |
|--------|--------------|---------|---------------|---------|------|---------------------|------|
| Barium | mg/kg dry wt | 27.7 | 03/18/09 | OP | 5.75 | | |

Field Sample # : HH-13D (1-3)

Sample ID : 09B07544 ‡Sampled : 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit Lo Hi | P/ F |
|--------|--------------|---------|---------------|---------|------|---------------------|------|
| Barium | mg/kg dry wt | 3850 | 03/18/09 | OP | 6.14 | | |

Analytical Method:
SW846 3050/6010

SAMPLES ARE DIGESTED WITH NITRIC ACID AND THEN ANALYZED BY
INDUCTIVELY COUPLED PLASMA EMISSION SPECTROSCOPY.

RL = Reporting Limit

ND = Not Detected at or above the Reporting Limit

NM = Not Measured

* = See end of report for comments and notes applying to this sample

‡ = See attached chain-of-custody record for time sampled

SPEC LIMIT = a client specified recommended or
regulatory level for comparison with data to
determine PASS (P) or FAIL (F) condition of results.



39 Spruce Street ° East Longmeadow, MA 01028 ° FAX 413/525-6405 ° TEL. 413/525-2332

DAVID SULLIVAN
TRC SOLUTIONS - LOWELL
650 SUFFOLK STREET
LOWELL, MA 01852

3/19/2009
Page 8 of 33

Purchase Order No.:

Project Location: CITY OF NEW BEDFORD (NBHS)
Date Received: 3/12/2009
Field Sample #: HH-113D (1-3)

LIMS-BAT #: LIMIT-23901
Job Number: 115058

Sample ID : 09B07545 ‡Sampled : 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|---------|--------------|---------|---------------|---------|------|------------|----|------|
| | | | | | | Lo | Hi | |
| Cadmium | mg/kg dry wt | 8.09 | 03/18/09 | OP | 0.33 | | | |

Field Sample #: HH-13A (0-1)

Sample ID : 09B07548 ‡Sampled : 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|---------|--------------|---------|---------------|---------|------|------------|----|------|
| | | | | | | Lo | Hi | |
| Cadmium | mg/kg dry wt | ND | 03/18/09 | OP | 0.30 | | | |

Field Sample #: HH-13A (1-3)

Sample ID : 09B07549 ‡Sampled : 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|---------|--------------|---------|---------------|---------|------|------------|----|------|
| | | | | | | Lo | Hi | |
| Cadmium | mg/kg dry wt | 0.63 | 03/18/09 | OP | 0.29 | | | |

Field Sample #: HH-13B (0-1)

Sample ID : 09B07541 ‡Sampled : 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|---------|--------------|---------|---------------|---------|------|------------|----|------|
| | | | | | | Lo | Hi | |
| Cadmium | mg/kg dry wt | 2.01 | 03/18/09 | OP | 0.34 | | | |

Field Sample #: HH-13B (1-3)

Sample ID : 09B07542 ‡Sampled : 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|---------|--------------|---------|---------------|---------|------|------------|----|------|
| | | | | | | Lo | Hi | |
| Cadmium | mg/kg dry wt | 0.37 | 03/18/09 | OP | 0.30 | | | |

RL = Reporting Limit

ND = Not Detected at or above the Reporting Limit

NM = Not Measured

* = See end of report for comments and notes applying to this sample

‡ = See attached chain-of-custody record for time sampled

SPEC LIMIT = a client specified recommended or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.



39 Spruce Street ° East Longmeadow, MA 01028 ° FAX 413/525-6405 ° TEL. 413/525-2332

DAVID SULLIVAN
TRC SOLUTIONS - LOWELL
650 SUFFOLK STREET
LOWELL, MA 01852

3/19/2009
Page 10 of 33

Purchase Order No.:

Project Location: CITY OF NEW BEDFORD (NBHS)
Date Received: 3/12/2009
Field Sample #: HJ-10C (1-3)

LIMS-BAT #: LIMIT-23901
Job Number: 115058

Sample ID: 09B07536 ‡Sampled: 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit Lo Hi | P/ F |
|---------|--------------|---------|---------------|---------|------|------------------|------|
| Cadmium | mg/kg dry wt | 14.9 | 03/18/09 | OP | 0.33 | | |

Field Sample #: HJ-10D (0-1)

Sample ID: 09B07539 ‡Sampled: 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit Lo Hi | P/ F |
|---------|--------------|---------|---------------|---------|------|------------------|------|
| Cadmium | mg/kg dry wt | 0.55 | 03/18/09 | OP | 0.32 | | |

Field Sample #: HJ-10D (1-3)

Sample ID: 09B07540 ‡Sampled: 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit Lo Hi | P/ F |
|---------|--------------|---------|---------------|---------|------|------------------|------|
| Cadmium | mg/kg dry wt | 19.2 | 03/18/09 | OP | 0.35 | | |

Field Sample #: HJ-10F (0-1)

Sample ID: 09B07537 ‡Sampled: 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit Lo Hi | P/ F |
|---------|--------------|---------|---------------|---------|------|------------------|------|
| Cadmium | mg/kg dry wt | 3.06 | 03/18/09 | OP | 0.35 | | |

Field Sample #: HJ-10F (1-3)

Sample ID: 09B07538 ‡Sampled: 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit Lo Hi | P/ F |
|---------|--------------|---------|---------------|---------|------|------------------|------|
| Cadmium | mg/kg dry wt | ND | 03/18/09 | OP | 0.34 | | |

RL = Reporting Limit

ND = Not Detected at or above the Reporting Limit

NM = Not Measured

* = See end of report for comments and notes applying to this sample

‡ = See attached chain-of-custody record for time sampled

SPEC LIMIT = a client specified recommended or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.



39 Spruce Street ° East Longmeadow, MA 01028 ° FAX 413/525-6405 ° TEL. 413/525-2332

DAVID SULLIVAN
TRC SOLUTIONS - LOWELL
650 SUFFOLK STREET
LOWELL, MA 01852

3/19/2009
Page 17 of 33

Purchase Order No.:

Project Location: CITY OF NEW BEDFORD (NBHS)
Date Received: 3/12/2009
Field Sample #: HH-13A (0-1)

LIMS-BAT #: LIMIT-23901
Job Number: 115058

Sample ID : 09B07548 ‡Sampled : 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|------------------------|--------------|-----------|---------------|---------|-------|------------|----|------|
| | | | | | | Lo | Hi | |
| Acenaphthene | mg/kg dry wt | ND | 03/18/09 | BGL | 0.196 | | | |
| Acenaphthylene | mg/kg dry wt | ND | 03/18/09 | BGL | 0.196 | | | |
| Anthracene | mg/kg dry wt | ND | 03/18/09 | BGL | 0.196 | | | |
| Benzo(a)anthracene | mg/kg dry wt | ND | 03/18/09 | BGL | 0.196 | | | |
| Benzo(a)pyrene | mg/kg dry wt | ND | 03/18/09 | BGL | 0.196 | | | |
| Benzo(b)fluoranthene | mg/kg dry wt | ND | 03/18/09 | BGL | 0.196 | | | |
| Benzo(g,h,i)perylene | mg/kg dry wt | ND | 03/18/09 | BGL | 0.196 | | | |
| Benzo(k)fluoranthene | mg/kg dry wt | ND | 03/18/09 | BGL | 0.196 | | | |
| Chrysene | mg/kg dry wt | ND | 03/18/09 | BGL | 0.196 | | | |
| Dibenz(a,h)anthracene | mg/kg dry wt | ND | 03/18/09 | BGL | 0.196 | | | |
| Fluoranthene | mg/kg dry wt | ND | 03/18/09 | BGL | 0.196 | | | |
| Fluorene | mg/kg dry wt | ND | 03/18/09 | BGL | 0.196 | | | |
| Indeno(1,2,3-cd)pyrene | mg/kg dry wt | ND | 03/18/09 | BGL | 0.196 | | | |
| 2-Methylnaphthalene | mg/kg dry wt | ND | 03/18/09 | BGL | 0.196 | | | |
| Naphthalene | mg/kg dry wt | ND | 03/18/09 | BGL | 0.196 | | | |
| Phenanthrene | mg/kg dry wt | ND | 03/18/09 | BGL | 0.196 | | | |
| Pyrene | mg/kg dry wt | ND | 03/18/09 | BGL | 0.196 | | | |
| Extraction Date 8270 | | 3/16/2009 | 03/18/09 | BGL | | | | |

Analytical Method:
SW846 8270

SAMPLES ARE EXTRACTED IN METHYLENE CHLORIDE/ACETONE AND FOLLOWED BY GC/MS TARGET COMPOUND ANALYSIS.

RL = Reporting Limit

ND = Not Detected at or above the Reporting Limit

NM = Not Measured

* = See end of report for comments and notes applying to this sample

‡ = See attached chain-of-custody record for time sampled

SPEC LIMIT = a client specified recommended or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.



39 Spruce Street ° East Longmeadow, MA 01028 ° FAX 413/525-6405 ° TEL. 413/525-2332

DAVID SULLIVAN
TRC SOLUTIONS - LOWELL
650 SUFFOLK STREET
LOWELL, MA 01852

3/19/2009
Page 21 of 33

Purchase Order No.:

Project Location: CITY OF NEW BEDFORD (NBHS)

LIMS-BAT #: LIMIT-23901

Date Received: 3/12/2009

Job Number: 115058

Field Sample #: HH-13C (0-1) QC

Sample ID: 09B07546

‡Sampled: 3/11/2009

Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/F |
|------------------------|--------------|-----------|---------------|---------|-------|------------|----|-----|
| | | | | | | Lo | Hi | |
| Acenaphthene | mg/kg dry wt | ND | 03/19/09 | BGL | 0.193 | | | |
| Acenaphthylene | mg/kg dry wt | ND | 03/19/09 | BGL | 0.193 | | | |
| Anthracene | mg/kg dry wt | ND | 03/19/09 | BGL | 0.193 | | | |
| Benzo(a)anthracene | mg/kg dry wt | ND | 03/19/09 | BGL | 0.193 | | | |
| Benzo(a)pyrene | mg/kg dry wt | ND | 03/19/09 | BGL | 0.193 | | | |
| Benzo(b)fluoranthene | mg/kg dry wt | ND | 03/19/09 | BGL | 0.193 | | | |
| Benzo(g,h,i)perylene | mg/kg dry wt | ND | 03/19/09 | BGL | 0.193 | | | |
| Benzo(k)fluoranthene | mg/kg dry wt | ND | 03/19/09 | BGL | 0.193 | | | |
| Chrysene | mg/kg dry wt | ND | 03/19/09 | BGL | 0.193 | | | |
| Dibenz(a,h)anthracene | mg/kg dry wt | ND | 03/19/09 | BGL | 0.193 | | | |
| Fluoranthene | mg/kg dry wt | ND | 03/19/09 | BGL | 0.193 | | | |
| Fluorene | mg/kg dry wt | ND | 03/19/09 | BGL | 0.193 | | | |
| Indeno(1,2,3-cd)pyrene | mg/kg dry wt | ND | 03/19/09 | BGL | 0.193 | | | |
| 2-Methylnaphthalene | mg/kg dry wt | ND | 03/19/09 | BGL | 0.193 | | | |
| Naphthalene | mg/kg dry wt | ND | 03/19/09 | BGL | 0.193 | | | |
| Phenanthrene | mg/kg dry wt | ND | 03/19/09 | BGL | 0.193 | | | |
| Pyrene | mg/kg dry wt | ND | 03/19/09 | BGL | 0.193 | | | |
| Extraction Date 8270 | | 3/16/2009 | 03/19/09 | BGL | | | | |

Analytical Method:

SW846 8270

SAMPLES ARE EXTRACTED IN METHYLENE CHLORIDE/ACETONE AND FOLLOWED BY GC/MS TARGET COMPOUND ANALYSIS.

RL = Reporting Limit

ND = Not Detected at or above the Reporting Limit

NM = Not Measured

* = See end of report for comments and notes applying to this sample

‡ = See attached chain-of-custody record for time sampled

SPEC LIMIT = a client specified recommended or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.



39 Spruce Street ° East Longmeadow, MA 01028 ° FAX 413/525-6405 ° TEL. 413/525-2332

DAVID SULLIVAN
TRC SOLUTIONS - LOWELL
650 SUFFOLK STREET
LOWELL, MA 01852

3/19/2009
Page 23 of 33

Purchase Order No.:

Project Location: CITY OF NEW BEDFORD (NBHS)
Date Received: 3/12/2009
Field Sample #: HH-13D (0-1)

LIMS-BAT #: LIMT-23901
Job Number: 115058

Sample ID : 09B07543 ‡Sampled : 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|------------------------|--------------|-----------|---------------|---------|-------|------------|----|------|
| | | | | | | Lo | Hi | |
| Acenaphthene | mg/kg dry wt | ND | 03/17/09 | BGL | 0.192 | | | |
| Acenaphthylene | mg/kg dry wt | ND | 03/17/09 | BGL | 0.192 | | | |
| Anthracene | mg/kg dry wt | ND | 03/17/09 | BGL | 0.192 | | | |
| Benzo(a)anthracene | mg/kg dry wt | ND | 03/17/09 | BGL | 0.192 | | | |
| Benzo(a)pyrene | mg/kg dry wt | ND | 03/17/09 | BGL | 0.192 | | | |
| Benzo(b)fluoranthene | mg/kg dry wt | ND | 03/17/09 | BGL | 0.192 | | | |
| Benzo(g,h,i)perylene | mg/kg dry wt | ND | 03/17/09 | BGL | 0.192 | | | |
| Benzo(k)fluoranthene | mg/kg dry wt | ND | 03/17/09 | BGL | 0.192 | | | |
| Chrysene | mg/kg dry wt | ND | 03/17/09 | BGL | 0.192 | | | |
| Dibenz(a,h)anthracene | mg/kg dry wt | ND | 03/17/09 | BGL | 0.192 | | | |
| Fluoranthene | mg/kg dry wt | ND | 03/17/09 | BGL | 0.192 | | | |
| Fluorene | mg/kg dry wt | ND | 03/17/09 | BGL | 0.192 | | | |
| Indeno(1,2,3-cd)pyrene | mg/kg dry wt | ND | 03/17/09 | BGL | 0.192 | | | |
| 2-Methylnaphthalene | mg/kg dry wt | ND | 03/17/09 | BGL | 0.192 | | | |
| Naphthalene | mg/kg dry wt | ND | 03/17/09 | BGL | 0.192 | | | |
| Phenanthrene | mg/kg dry wt | ND | 03/17/09 | BGL | 0.192 | | | |
| Pyrene | mg/kg dry wt | ND | 03/17/09 | BGL | 0.192 | | | |
| Extraction Date 8270 | | 3/16/2009 | 03/17/09 | BGL | | | | |

Analytical Method:

SW846 8270

SAMPLES ARE EXTRACTED IN METHYLENE CHLORIDE/ACETONE AND FOLLOWED BY GC/MS TARGET COMPOUND ANALYSIS.

RL = Reporting Limit

ND = Not Detected at or above the Reporting Limit

NM = Not Measured

* = See end of report for comments and notes applying to this sample

‡ = See attached chain-of-custody record for time sampled

SPEC LIMIT = a client specified recommended or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.



39 Spruce Street ° East Longmeadow, MA 01028 ° FAX 413/525-6405 ° TEL. 413/525-2332

DAVID SULLIVAN
TRC SOLUTIONS - LOWELL
650 SUFFOLK STREET
LOWELL, MA 01852

3/19/2009
Page 25 of 33

Purchase Order No.:

Project Location: CITY OF NEW BEDFORD (NBHS)
Date Received: 3/12/2009
Field Sample #: HH-113D (1-3)

LIMS-BAT #: LIMT-23901
Job Number: 115058

Sample ID: 09B07545 ‡Sampled: 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit Lo Hi | P/ F |
|------|--------------|---------|---------------|---------|------|------------------|------|
| Lead | mg/kg dry wt | 982 | 03/18/09 | OP | 0.97 | | |

Field Sample #: HH-13A (0-1)

Sample ID: 09B07548 ‡Sampled: 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit Lo Hi | P/ F |
|------|--------------|---------|---------------|---------|------|------------------|------|
| Lead | mg/kg dry wt | 10.0 | 03/18/09 | OP | 0.89 | | |

Field Sample #: HH-13A (1-3)

Sample ID: 09B07549 ‡Sampled: 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit Lo Hi | P/ F |
|------|--------------|---------|---------------|---------|------|------------------|------|
| Lead | mg/kg dry wt | 216 | 03/18/09 | OP | 0.87 | | |

Field Sample #: HH-13B (0-1)

Sample ID: 09B07541 ‡Sampled: 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit Lo Hi | P/ F |
|------|--------------|---------|---------------|---------|------|------------------|------|
| Lead | mg/kg dry wt | 543 | 03/18/09 | OP | 1.00 | | |

Field Sample #: HH-13B (1-3)

Sample ID: 09B07542 ‡Sampled: 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit Lo Hi | P/ F |
|------|--------------|---------|---------------|---------|------|------------------|------|
| Lead | mg/kg dry wt | 72.3 | 03/18/09 | OP | 0.89 | | |

RL = Reporting Limit

ND = Not Detected at or above the Reporting Limit

NM = Not Measured

* = See end of report for comments and notes applying to this sample

‡ = See attached chain-of-custody record for time sampled

SPEC LIMIT = a client specified recommended or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.



39 Spruce Street ° East Longmeadow, MA 01028 ° FAX 413/525-6405 ° TEL. 413/525-2332

DAVID SULLIVAN
TRC SOLUTIONS - LOWELL
650 SUFFOLK STREET
LOWELL, MA 01852

3/19/2009
Page 26 of 33

Purchase Order No.:

Project Location: CITY OF NEW BEDFORD (NBHS)

LIMS-BAT #: LIMIT-23901

Date Received: 3/12/2009

Job Number: 115058

Field Sample #: HH-13C (0-1) QC

Sample ID: 09B07546 ‡Sampled: 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|------|--------------|---------|---------------|---------|------|------------|----|------|
| | | | | | | Lo | Hi | |
| Lead | mg/kg dry wt | 21.9 | 03/18/09 | OP | 0.87 | | | |

Field Sample #: HH-13C (1-3)

Sample ID: 09B07547 ‡Sampled: 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|------|--------------|---------|---------------|---------|------|------------|----|------|
| | | | | | | Lo | Hi | |
| Lead | mg/kg dry wt | 3250 | 03/18/09 | OP | 1.21 | | | |

Field Sample #: HH-13D (0-1)

Sample ID: 09B07543 ‡Sampled: 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|------|--------------|---------|---------------|---------|------|------------|----|------|
| | | | | | | Lo | Hi | |
| Lead | mg/kg dry wt | 18.4 | 03/18/09 | OP | 0.87 | | | |

Field Sample #: HH-13D (1-3)

Sample ID: 09B07544 ‡Sampled: 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|------|--------------|---------|---------------|---------|------|------------|----|------|
| | | | | | | Lo | Hi | |
| Lead | mg/kg dry wt | 987 | 03/18/09 | OP | 0.93 | | | |

Field Sample #: HJ-10C (0-1)

Sample ID: 09B07535 ‡Sampled: 3/11/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|------|--------------|---------|---------------|---------|------|------------|----|------|
| | | | | | | Lo | Hi | |
| Lead | mg/kg dry wt | 98.5 | 03/18/09 | OP | 0.89 | | | |

RL = Reporting Limit

ND = Not Detected at or above the Reporting Limit

NM = Not Measured

* = See end of report for comments and notes applying to this sample

‡ = See attached chain-of-custody record for time sampled

SPEC LIMIT = a client specified recommended or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.



39 Spruce Street ° East Longmeadow, MA 01028 ° FAX 413/525-6405 ° TEL. 413/525-2332

DAVID SULLIVAN
TRC SOLUTIONS - LOWELL
650 SUFFOLK STREET
LOWELL, MA 01852

4/15/2009
Page 8 of 29

Purchase Order No.:

Project Location: CITY OF NEW BEDFORD(NBHS)
Date Received: 4/10/2009
Field Sample #: SSHH-113B1(0-1)

LIMS-BAT #: LIMIT-24666
Job Number: 115058

Sample ID: 09B11442 ‡Sampled: 4/10/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/F |
|----------------------|--------------|-----------|---------------|---------|------|------------|----|-----|
| | | | | | | Lo | Hi | |
| Chromium (+6) | mg/kg dry wt | ND | 04/14/09 | AED | 0.39 | | | |
| Extraction Date CR+6 | | 4/13/2009 | 04/14/09 | AED | | | | |

Analytical Method:

SW846 7196

ALKALINE DIGESTION BY SW846 3060A OF SOLID FOLLOWED BY COLORIMETRIC ANALYSIS WITH S-DIPHENYLCARBAZIDE.

RL = Reporting Limit

ND = Not Detected at or above the Reporting Limit

NM = Not Measured

* = See end of report for comments and notes applying to this sample

‡ = See attached chain-of-custody record for time sampled

SPEC LIMIT = a client specified recommended or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.



39 Spruce Street ° East Longmeadow, MA 01028 ° FAX 413/525-6405 ° TEL. 413/525-2332

DAVID SULLIVAN
TRC SOLUTIONS - LOWELL
650 SUFFOLK STREET
LOWELL, MA 01852

4/15/2009
Page 11 of 29

Project Location: CITY OF NEW BEDFORD(NBHS)
Date Received: 4/10/2009
Field Sample #: SSHH-113B1(0-1)

Purchase Order No.:
LIMS-BAT #: LIMIT-24666
Job Number: 115058

Sample ID : 09B11442 ‡Sampled : 4/10/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit Lo Hi | P/ F |
|----------|--------------|---------|---------------|---------|------|---------------------|------|
| Chromium | mg/kg dry wt | 6.05 | 04/13/09 | OP | 0.60 | | |

Analytical Method:

SW846 3050/6010

SAMPLES ARE DIGESTED WITH NITRIC ACID AND THEN ANALYZED BY
INDUCTIVELY COUPLED PLASMA EMISSION SPECTROSCOPY.

RL = Reporting Limit

ND = Not Detected at or above the Reporting Limit

NM = Not Measured

* = See end of report for comments and notes applying to this sample

‡ = See attached chain-of-custody record for time sampled

SPEC LIMIT = a client specified recommended or
regulatory level for comparison with data to
determine PASS (P) or FAIL (F) condition of results.



39 Spruce Street ° East Longmeadow, MA 01028 ° FAX 413/525-6405 ° TEL. 413/525-2332

DAVID SULLIVAN
TRC SOLUTIONS - LOWELL
650 SUFFOLK STREET
LOWELL, MA 01852

4/15/2009
Page 21 of 29

Purchase Order No.:

Project Location: CITY OF NEW BEDFORD(NBHS)
Date Received: 4/10/2009
Field Sample #: SSHH-013B1(0-1)

LIMS-BAT #: LIMIT-24666
Job Number: 115058

Sample ID: *09B11441 ‡Sampled: 4/10/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|----|-------|---------|---------------|---------|----|------------|----|------|
| | | | | | | Lo | Hi | |
| pH | units | 5.81 | 04/10/09 | LL | | | | |

Field Sample #: SSHH-013B2(0-1)QC

Sample ID: *09B11443 ‡Sampled: 4/10/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|----|-------|---------|---------------|---------|----|------------|----|------|
| | | | | | | Lo | Hi | |
| pH | units | 5.97 | 04/10/09 | LL | | | | |

Field Sample #: SSHH-013B3(0-1)

Sample ID: *09B11444 ‡Sampled: 4/10/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|----|-------|---------|---------------|---------|----|------------|----|------|
| | | | | | | Lo | Hi | |
| pH | units | 5.93 | 04/10/09 | LL | | | | |

Field Sample #: SSHH-013B4(0-1)

Sample ID: *09B11445 ‡Sampled: 4/10/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|----|-------|---------|---------------|---------|----|------------|----|------|
| | | | | | | Lo | Hi | |
| pH | units | 5.93 | 04/10/09 | LL | | | | |

Field Sample #: SSHH-113B1(0-1)

Sample ID: *09B11442 ‡Sampled: 4/10/2009
Not Specified

Sample Matrix: SOIL

| | Units | Results | Date Analyzed | Analyst | RL | SPEC Limit | | P/ F |
|----|-------|---------|---------------|---------|----|------------|----|------|
| | | | | | | Lo | Hi | |
| pH | units | 5.87 | 04/10/09 | LL | | | | |

RL = Reporting Limit

ND = Not Detected at or above the Reporting Limit

NM = Not Measured

* = See end of report for comments and notes applying to this sample

‡ = See attached chain-of-custody record for time sampled

SPEC LIMIT = a client specified recommended or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.



39 Spruce Street ° East Longmeadow, MA 01028 ° FAX 413/525-6405 ° TEL. 413/525-2332

DAVID SULLIVAN
 TRC SOLUTIONS - LOWELL
 650 SUFFOLK STREET
 LOWELL, MA 01852

4/15/2009
 Page 27 of 29

Purchase Order No.:

Project Location: CITY OF NEW BEDFORD(NBHS)
 Date Received: 4/10/2009
 Field Sample #: SSSH-013B1(0-1)

LIMS-BAT #: LIMT-24666
 Job Number: 115058

Sample ID: 09B11441 ‡Sampled: 4/10/2009
 Not Specified

Sample Matrix: SOIL

| Units | Results | Date Analyzed | Analyst | RL | SPEC Limit Lo Hi | P/F |
|-------|---------|---------------|---------|----|---------------------|-----|
|-------|---------|---------------|---------|----|---------------------|-----|

SPECIAL TEST 04/10/09 LL

ORP Method SM2580A

Result: 169 MV

Field Sample #: SSSH-013B2(0-1)QC

Sample ID: 09B11443 ‡Sampled: 4/10/2009
 Not Specified

Sample Matrix: SOIL

| Units | Results | Date Analyzed | Analyst | RL | SPEC Limit Lo Hi | P/F |
|-------|---------|---------------|---------|----|---------------------|-----|
|-------|---------|---------------|---------|----|---------------------|-----|

SPECIAL TEST 04/10/09 LL

ORP Method SM2580A

Result: 244 MV

Duplicate Result: 242 MV

Field Sample #: SSSH-013B3(0-1)

Sample ID: 09B11444 ‡Sampled: 4/10/2009
 Not Specified

Sample Matrix: SOIL

| Units | Results | Date Analyzed | Analyst | RL | SPEC Limit Lo Hi | P/F |
|-------|---------|---------------|---------|----|---------------------|-----|
|-------|---------|---------------|---------|----|---------------------|-----|

SPECIAL TEST 04/10/09 LL

ORP Method SM2580A

Result: 189 MV

RL = Reporting Limit

ND = Not Detected at or above the Reporting Limit

NM = Not Measured

* = See end of report for comments and notes applying to this sample

‡ = See attached chain-of-custody record for time sampled

SPEC LIMIT = a client specified recommended or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.



39 Spruce Street ° East Longmeadow, MA 01028 ° FAX 413/525-6405 ° TEL. 413/525-2332

DAVID SULLIVAN
TRC SOLUTIONS - LOWELL
650 SUFFOLK STREET
LOWELL, MA 01852

4/15/2009
Page 29 of 29

Purchase Order No.:

Project Location: CITY OF NEW BEDFORD(NBHS)
Date Received: 4/10/2009

LIMS-BAT #: LIMIT-24666
Job Number: 115058

The following notes were attached to the reported analysis :

Sample ID: * 09B11441

Analysis: pH

19.3 degrees celsius

Sample ID: * 09B11442

Analysis: pH

20.7 degrees celsius

Sample ID: * 09B11443

Analysis: pH

20.0 degrees celsius

Sample ID: * 09B11444

Analysis: pH

20.6 degrees celsius

Sample ID: * 09B11445

Analysis: pH

20.5 degrees celsius

** END OF REPORT **

RL = Reporting Limit

ND = Not Detected at or above the Reporting Limit

NM = Not Measured

* = See end of report for comments and notes applying to this sample

‡ = See attached chain-of-custody record for time sampled

SPEC LIMIT = a client specified recommended or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.