Remedial Investigation / Alternatives Analysis / Interim Remedial Measures Report

275 Franklin Street &
432 Pearl Street Sites
Buffalo, New York
BCP #C915208 & C915237

April 2010
Revised January & July 2013

0156-001-102

Prepared For:

Buffalo Development Corporation

Prepared By:

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in association with

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BROWNFIELD CLEANUP PROGRAM

REMEDIAL INVESTIGATION/ ALTERNATIVES ANALYSIS / INTERIM REMEDIAL MEASURES REPORT

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BCP SITE NO. C915208 & C915237

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BROWNFIELD CLEANUP PROGRAM
RI/AA/IRM REPORT

275 Franklin Street & 432 Pearl Street Sites
BCP Site No. C915208 & C915237

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1.0 INTRODUCTION

Benchmark Environmental Engineering and Science, PLLC (Benchmark) has prepared this revised Remedial Investigation (RI) / Alternatives Analysis (AA) / Interim Remedial Measure (IRM) Report on behalf of Buffalo Development Corporation (BDC) for two Brownfield Cleanup Program (BCP) Sites (No. C915208 & C915237) located in the City of Buffalo, New York. The BCP Sites are further described in the following paragraphs and identified as follows:

- BCP Site No. C915208, identified as the 275 Franklin Street Site and encompassing the following parcels:
  - Parcel 111.38-2-22, addressed as 275-277 Franklin Street, (± 0.14 acres)
  - Parcel 111.38-2-23, addressed as 279 Franklin Street, (± 0.13 acres)
- BCP Site No. C915237, identified as the 432 Pearl Street Site and encompassing the following parcels:
  - Parcel 111.38-2-20.1, addressed as 267 Franklin Street, (± 0.25 acres)
  - Parcel 111.38-2-4.1, addressed as 432 Pearl Street, (± 0.45 acres)

BDC owns or is a contract vendee to the four adjoining parcels which are part of a common proposed redevelopment project. The properties are collectively referred to throughout this document as the BCP Sites (see Figures 1 and 2).

In June 2006, BDC submitted a New York State BCP application for entry of 275-277 Franklin Street, 279 Franklin, and 432 Pearl into the BCP. On October 4, 2006, the New York State Department of Environmental Conservation (NYSDEC) accepted 275-277 Franklin and 279 Franklin into the BCP, but denied the entrance of 432 Pearl Street stating that this parcel does "not meet the definition of 'Brownfield site' as set forth in Section 27-1405.2 of the Environmental Conservation Law (ECL)." BDC executed a Brownfield Cleanup Agreement (BCA) as a non-responsible party (volunteer) per ECL§27-1405 for the 275 Franklin Street Site and the Site was issued BCP Site Number C915208.

In November 2006, remedial investigation work was conducted on the 275 Franklin Street BCP Site and adjacent parcels that are now part of the 432 Pearl Street BCP Site. The data collected on the parcels addressed as 267 Franklin and 432 Pearl identified actual contamination on 267 Franklin and 432 Pearl which the applicant perceived as complicating redevelopment of the parcels. Based upon the new data, and a better understanding of the

properties, the applicant submitted an amended BCP application in June 2007 to include 267 Franklin and 432 Pearl.

On December 17, 2007 the NYSDEC denied 267 Franklin and again denied 432 Pearl stating that these parcels "do not meet the definition of 'Brownfield site' as set forth in Section 27-1405.2 of the Environmental Conservation Law (ECL)." Subsequently BDC challenged that NYSDEC decision in State Supreme court. The court ruled the denial of eligibility to the BCP for 267 Franklin and 432 Pearl was "arbitrary and capricious" in a decision dated May 22, 2009, and ordered 267 Franklin and 432 Pearl into the program effective December 21, 2007 through its Final Order and Judgment dated July 1, 2009. NYSDEC filed a notice of appeal on or about July 30, 2009. The 267 Franklin and 432 Pearl properties were incorporated into the 432 Pearl Street Site under BCP Site Number C915237.

RI activities summarized in this report include sampling locations on both BCP Sites (see Figure 3). RI activities were completed in November 2006, December 2006, and January 2007 in accordance with the NYSDEC-approved RI Work Plan dated July 2006 (Ref. 1) and an October 16, 2006 Response to Comment Letter (Ref. 2). In April 2008, a supplemental RI was performed in accordance with the NYSDEC-approved Supplemental RI Work Plan dated March 5, 2008 (Ref. 3), in order to fill in data gaps and investigate the quality of deeper groundwater on the BCP Sites.

On July 1, 2008, the NYSDEC approved an Interim Remedial Measures (IRM) Work Plan (Ref. 4) prepared by Benchmark to identify the scope of the planned remedial measures for the 275 Franklin Street Site and the means by which they will be completed. Remedial measures were implemented from summer 2008 through fall 2009. The NYSDEC Division of Environmental Remediation monitored the remedial actions to verify the work was performed in accordance with the BCA, the approved IRM Work Plan (Ref. 4), and DER-10 (Ref. 5). A discussion about the IRM is also presented in this report.

In April 2010, BDC submitted a RI/AA/IRM report to NYSDEC that summarized the RI and Supplemental activities and the IRM completed in 2008-2009. NYSDEC provided a comment letter to that report in February 2011 that, amongst other items, required additional groundwater remedial measures beyond the proposed in-situ HRC injections in the vicinity of MW 5 "source area" on the 275 Franklin Street Site in order to mitigate off-site migration of cVOCs.

In September 2011 after consulting with NYSDEC, BDC submitted an Additional IRM Work Plan to NYSDEC expanding the proposed IRM to include both the 275 Franklin Street BCP Site and the 267 Franklin Street parcel of the 432 Pearl Street Site. The Additional IRM Work Plan specifically proposed, in addition to the HRC injection at the source area, injection of zero valent iron (ZVI) and nutrients to enhance the in-situ source area biological treatment, as well as in-situ ZVI groundwater treatment at the down-gradient property boundary to mitigate off-site cVOC plume migration. The objective of the Additional IRM Work Plan was clearly defined to be a comprehensive and final groundwater remedy for both BCP Sites.

In a letter dated March 29, 2012, NYSDEC approved implementation of the Additional IRM Work Plan but required further assessment of deep groundwater on-Site. After consultation with NYSDEC and with the clear intent to achieve consensus with the NYSDEC regarding the final groundwater remedy prior to implementing additional IRMs, BDC installed an additional deep groundwater well (MW-7) on the 267 Franklin Street parcel of the 432 Pearl Street Site in May 2012 and completed a round of comprehensive groundwater sampling, which included certain off-site wells as requested by NYSDEC.

In August 2012, NYSDEC provided a letter that again affirmed approval of the Additional IRM, but requested the scope of work be further expanded to include additional injection points, which BDC agreed to. NYSDEC further stated in the letter "at this time, NYSDEC does not concur with your conclusion presented in your 8/21/2012 transmittal email stating that deep groundwater impacts are minimal and that the deep groundwater zone does not require any additional remediation measures other than those currently proposed in the additional IRM and RI-AA-IRM Report dated April 2010. This deep groundwater quality data confirms onsite deep groundwater contamination from chlorinated VOCs and that the chlorinated VOC contamination from the site is migrating offsite".

In October 2012, NYSDEC, BDC and Benchmark met with NYSDEC to discuss significant differences of professional opinions over deep groundwater quality. BDC indicated that their intention was for the additional planned IRMs to serve as the final remedy (along with engineering and institutional controls) and subsequently submitted a revised Additional IRM Work in November 2012. The Department provided a response letter dated November 27, 2012 that indicated that the IRM may proceed, but did not provide assurance that the IRM could serve as the final remedy. Consequently BDC notified

NYSDEC of their intent to update and re-submit the RI/AA/IRM Report to include the additional investigation work completed by BDC subsequent to the April 2010 RI/AA/IRM report, and recommend a final remedy.

The Revised RI/AA/IRM Report was submitted in January 2013. Following review of the report, NYSDEC provided additional comments on the RI/AA/IRM Report in July 2013 and prepared draft Proposed Decision Documents, for each BCP Site,. NYSDEC Comments have been incorporated in this Draft Final RI/AA/IRM Report.

1.1 Background

The BCP Sites encompass four parcels in the City of Buffalo, New York identified as 275-277 Franklin Street (± 0.14 acres), 279 Franklin Street (± 0.13 acres), 267 Franklin Street (± 0.25 acres), and 432 Pearl Street (± 0.45 acres) (see Figure 2). The BCP Sites are bounded by a restaurant and surface parking lot to the north, Pearl Street to the east, a mixed use building to the south, and Franklin Street to the west.

The BCP Sites have been used for various purposes since the late 1800s. From at least 1951 through the early 2000s, 275-277 Franklin Street was used as a dry cleaner. The property located at 279 Franklin Street was used for residential purposes from the late 1800s through at least 1951 and was a parking lot from at least 1981 to the present (Ref. 6). In 1925, the 432 Pearl Street property was used for residential and hot air heater manufacturing and by 1951 it was being used as residential and a parking lot. The property at 267 Franklin was has been used as an apartment building since at least 1925.

A Limited Environmental Investigation was performed at 275-277 Franklin Street by Nature's Way Environmental Consultants & Contractors, Inc. in September 2004 (Ref. 7; included in Appendix A). The results of that investigation indicated that the 275 Franklin Street Site soils and groundwater have been impacted by tetrachloroethene (PCE), a chlorinated volatile organic compound (cVOC), typically associated with dry cleaning operations.

In March 2006, Benchmark performed a Preliminary Site Investigation at the BCP Sites (Refs. 8 and 9; included in Appendix A). The Preliminary Site Investigation was performed to assess soil/fill materials and soil vapor on-site, and to ascertain if subsurface environmental conditions on these parcels were likely to impact redevelopment of the BCP

Sites. The results of the investigation indicate that the 275 Franklin Street Site soils have been impacted by semi-volatile organic compounds (SVOCs), mercury, and lead. In addition, soil vapor samples collected from both BCP Sites contained elevated concentrations of cVOCs. Results of these investigations are more fully described below.

1.2 Previous Investigations

1.2.1 September 2004 – Limited Environmental Investigation

A Limited Phase II Environmental Assessment was performed at the 275 Franklin Street Site by Nature's Way Environmental Consultants & Contractors, Inc. in September 2004 (Ref. 7). Six borings, identified as B-1, B-2, B-3/BMW-3, B-4, B-5/BMW-5, and B-6 were each advanced to approximately 12 feet below ground surface (fbgs) on site. Based on elevated field screening for volatile organic compounds (VOCs), two soil samples were collected from the 10- to 12-foot interval in borings B-3 and B-5 and temporary wells were installed within those borings (identified as BMW-3 and BMW-5) to facilitate the collection of groundwater samples. The two soil samples and two groundwater samples were analyzed for Target Compound List (TCL) VOCs. PCE was detected in the soil samples at concentrations of 12,700 micrograms per kilogram (µg/kg) or parts per billion (ppb) and 671 ppb at sample locations B-3 (10'-12') and B-5 (10'-12'), respectively. PCE was detected in the groundwater samples from BMW-3 and BMW-5 at concentrations of 137,000 micrograms per liter (µg/L) and 70,400 µg/L, respectively. Soil borings and monitoring well locations are shown on Figure 3.

1.2.2 March/June 2006 – Preliminary Site Investigation

Benchmark completed a Preliminary Site Investigation at 279 Franklin Street (275 Franklin Street Site), 432 Pearl Street (432 Pearl Street Site), and 470 Pearl Street (off-site) (Ref. 8 and 9) on behalf of the Knoer, Crawford, and Bender, LLP, the attorneys for Buffalo Development Corporation. The parcel as well as environmental samples and findings pertaining to 470 Pearl Street are not discussed in the context of this report. In January 2006, five soil borings were advanced: two on the 279 Franklin Street parcel (SB-1 and SB-2, both advanced to 4 fbgs) and three on the 432 Pearl Street parcel (SB-1, SB-2, SB-3 all advanced

to 4 fbgs). Soil samples from upper fill zone of each boring were collected and analyzed for TCL SVOCs (base neutral fraction), TCL polychlorinated biphenyls (PCBs), arsenic, chromium, lead, and mercury. Field screening of soil samples using a photoionization detector (PID) did not indicate VOC concentrations above background concentrations. Several polycyclic aromatic hydrocarbons (PAHs) were detected above NYSDEC TAGM #4046 recommended soil cleanup objectives (RSCOs) (the guidance used at that time). No PCBs were detected above laboratory detection levels. Mercury and lead concentrations exceeded RSCOs in some of the soil samples analyzed.

The investigation also consisted of collecting two soil vapor samples: one from the 279 Franklin Street parcel (identified as "AIR") and one from the 432 Pearl Street parcel (also identified as "AIR"). Each soil vapor sample was collected from beneath asphalt paving for analysis of TCL VOCs via USEPA Method TO-15. The purpose of this sampling effort was to determine if soil vapor VOCs were present as a result of VOCs previously identified in soil and groundwater at 275 Franklin Street Site. The highest PCE concentrations were detected in soil vapor from 279 Franklin (14,000 ug/m^3) and 432 Pearl (140 ug/m^3). Trichloroethene (TCE) and 1,1,1-trichloroethane (1,1,1-TCA) were also detected in the sub-surface sample locations from 279 Franklin (70 ug/m^3 and 71 ug/m^3, respectively). Based upon this investigation, Benchmark concluded that environmental conditions at the 279 Franklin Street parcel and the 432 Pearl Street parcel were likely to impact redevelopment activity. Soil borings and soil vapor locations are shown on Figure 3.

Relative to the March 2006 Preliminary Site Investigation report, it should be noted that certain addresses were incorrectly identified. Therefore, any reference to 277 Franklin Street in that report should correctly be identified as 279 Franklin Street and any reference to 275 Franklin Street in that report should correctly be identified as 275-277 Franklin Street.

1.3 Constituents of Concern (COCs)

Based on the prior investigations, the primary constituents of concern (COCs) at the 275 Franklin Street BCP Site are: cVOCs in groundwater; cVOCs in soil vapor; and, cVOCs in soil. Primary COCs at the 432 Pearl Street BCP Site are: cVOCs in groundwater; cVOCs in soil vapor; and cVOCs and PAHs in soil. This RI provides a comprehensive analysis of a

broad range of constituents, including but not limited to the COCs, in all environmental media across the BCP Sites:

1.4 Report Organization

This report contains the following nine sections:

- Section 1.0 is the introduction and provides BCP Sites background information.
- Section 2.0 presents the investigation approach.
- Section 3.0 describes the BCP Sites physical characteristics as they pertain to the investigation findings.
- Section 4.0 presents the investigation results by media.
- Section 5.0 describes the interim remedial measures implemented at the 275 Franklin Street Site.
- Section 6.0 describes the fate and transport of the COCs.
- Section 7.0 presents the qualitative risk assessment.
- Section 8.0 evaluates remedial alternatives for the BCP Sites.
- Section 9.0 presents the project summary and conclusions.
- Section 10.0 provides a list of references for this report.

2.0 INVESTIGATION APPROACH

A Remedial Investigation was conducted concurrently on both BCP Sites. Where applicable, the individual BCP Sites are referenced to clarify the investigative activities performed specific to each Site. The Remedial Investigation scope of work focuses on defining the nature and extent of contamination on the BCP Sites, identifying the source of contamination, defining chemical constituent migration pathways, qualitatively assessing human health and ecological risks (if necessary), and obtaining data of sufficient quantity and quality to perform the remedial alternatives evaluation in accordance with NYSDEC DER-10 (Ref. 5).

Field team personnel collected environmental samples (e.g., soil, soil vapor, and groundwater) in accordance with the rationale and protocols described in the Field Sampling Plan (FSP) presented in the Quality Assurance Project Plan (QAPP) (Ref. 10). Representative environmental samples were collected during the RI using dedicated sampling devices and were placed in pre-cleaned laboratory provided sample containers, cooled to 4ºC in the field (if necessary), and transported under chain-of-custody command to Severn Trent Laboratories, Inc. (STL), located in Amherst, New York, a New York State Department of Health (NYSDOH) ELAP-certified analytical laboratory.

Samples for chemical analysis were analyzed in accordance with NYSDEC ASP-CLP methodology to meet the definitive-level data requirements. An ASP Category B deliverable package was provided for each sample delivery group to allow third-party data validation and provide defensible data. Analytical results were evaluated by a third-party data validation expert in accordance with provisions described in the QAPP (Ref. 10). This RI was performed during several separate investigations, each of which is described below.

2.1 November 2006 Supplemental Soil Investigation

In November 2006, eleven soil borings were advanced on- and off-site relative to the BCP Sites. The soil boring locations are identified as:

- 275Franklin Street: PZ-1 through PZ-6
- 432 Pearl Street Site: SB-4 and PZ-8 through PZ-10
- Off-site: PZ-7 (470 Pearl)

The soil borings were advanced to 16-feet below grade with the exception of PZ-1, which was advanced to 20 fbgs. Soil borings SB-4 and PZ-1 through PZ-10 were completed using

direct-push drilling techniques. In addition, soil borings completed to greater depths than the piezometers to assess deeper soil conditions (i.e., greater than 16 fbgs) using hollow stem auger drilling techniques included:

- 275 Franklin Street Site: MW-1 (275-277 Franklin Street parcel) advanced to 52.5 fbgs
- 432 Pearl Street Site: MW-2 (432 Pearl parcel) advanced to 40 fbgs and MW-3 (267 Franklin) advanced to 40 fbgs.

Direct-push Macro-core® and hollow stem auger split spoon samples were retrieved to allow for field characterization of the subsurface lithology, to collect representative soil samples, and to facilitate completion of one-inch piezometers and two-inch monitoring wells, respectively. Subsurface conditions are described on stratigraphic field borehole logs from ground surface to the target depth (see Appendix B). Soil borings are located on Figure 3.

Each soil sample was scanned for total volatile organic vapors with a Mini-RAE 2000 photoionization detector (PID) equipped with a 10.6 eV lamp, and any visual and/or olfactory observations were noted. Soil descriptions, PID scan results, and visual/olfactory observations recorded during boring advancement are presented on the Field Borehole Logs in Appendix B. The sample interval identified as the most impacted (i.e., greatest PID scan result and/or evidence of visual/olfactory impact) was selected for analysis. In several boreholes (e.g., PZ-1, PZ-7, PZ-8, and PZ-9) no impacts were identified. Therefore, the soil/fill horizon above the native soils was selected for analysis.

Each soil sample was analyzed for TCL VOCs. In addition, four soil/fill samples were analyzed for TCL SVOCs, PCBs/Pesticides, TAL Metals, and pH in accordance with NYSDEC ASP CLP methodology. The November 2006 soil analytical data is summarized in Table 1.

2.2 April 2008 Supplemental Soil Investigation

2.2.1 Environmental Assessment

A supplemental soil investigation was completed in April 2008 to delineate on-site VOC-impacts. Supplemental soil borings included the following:

- 275 Franklin Street Site: MW-4 through MW-6 (275-277 Franklin), borings SB-7 and SB-8 (279 Franklin Street parcel), and boring SB-9 (275-277 Franklin Street parcel)

- 432 Pearl Street Site: soil borings SB-10 through SB-13 (432 Pearl Street parcel)

The soil borings were completed using hollow-stem auger drilling techniques. Borings MW-4 and MW-6 were advanced to the top of bedrock via continuous split-spoon sampling in two-foot intervals, which was determined to be approximately 52 fbgs. Soil boring MW-5 was completed approximately 3 feet from MW-4 for the sole purpose of installing monitoring well MW-5 as discussed below. Soil borings are located on Figure 3.

All soil samples were field-screened using visual and olfactory observations and a PID as a procedure for ensuring the health and safety of personnel at the Site; to identify potentially VOC-impacted soil samples for laboratory analysis; and to determine the presence or absence of dense non-aqueous phase liquid (DNAPL). Upon reaching the completion depth of each boring, PID and visual/olfactory results were reviewed. The sample interval identified as the most impacted (i.e., greatest PID scan result and/or evidence of visual/ olfactory impact) was selected for analysis. Two additional soil samples were collected from other sample intervals within each boring to further delineate soil impacts based on field observations. Selected soil samples were analyzed for Target Compound List (TCL) VOCs via USEPA SW-846 Method 8260. An ASP Category B deliverable package was provided to allow third-party data validation and provide defensible data. The April 2008 soil analytical data is summarized in Table 2.

2.2.2 Geotechnical Assessment

Previously described boring MW-6, borings SB-7 through SB-8, and boring SB-9, which were completed on the 275 Franklin Street BCP Site and borings SB-10 through SB-13, which were completed on the 432 Pearl Street BCP Site, were also advanced to collect geotechnical information about the BCP Sites.

2.3 Sub-Grade Vapor Investigation

In November 2006, three soil vapor samples were collected and analyzed to determine the presence of cVOC vapors on the 432 Pearl Street Site. The sample locations, identified as SGV-1 through SGV-3, are shown on Figure 3. Samples were collected as described in the approved RI Work Plan (Ref. 1) and subsequent Comment/Response Letter (Ref. 2) as well as NYSDOH guidance (Ref. 11).

Soil gas samples were collected into 6-liter Summa canisters. Following sample collection, the Summa canisters were shipped to an NYSDOH-approved laboratory for

analysis of USEPA Target Compound List (TCL) Volatile Organic Compounds in accordance with USEPA Method TO-15. All openings were repaired with asphalt cold patch.

2.4 November 2006 Supplemental Groundwater Investigation

Previous investigations indicated that shallow groundwater was impacted by PCE on both BCP Sites. Based on the concentrations in shallow groundwater (i.e., up to 137,000 µg/L) and the depth of PCE impact in soil (i.e., 10-12 fbgs), it was a concern that PCE and/or its chemical degradation products (e.g., trichloroethylene, dichloroethylene, etc.) might be present at deeper locations than previously investigated (i.e., up to 12 fbgs). To address this concern, this investigation assessed groundwater at varying depths.

Three new groundwater monitoring wells, designated as MW-1, MW-2 and MW-3, and 14 new piezometers, designated as PZ-1 through PZ-14, were installed at the locations shown on Figure 3 and are summarized on Table 3. Monitoring well installation, well development, and groundwater sample collection are discussed in the following sections.

2.4.1 Piezometer/Well Installation

Ten piezometers were installed on November 14 and 15, 2006 to assess groundwater quality and to estimate groundwater flow direction. Based on the elevated concentrations of PCE in PZ-1 through PZ-10 and estimated southwesterly groundwater flow direction (i.e., toward the residential apartment building south of the Site), four additional piezometers were installed at the 432 Pearl Street Site on December 27, 2006 using direct push drilling techniques. Bottom depths of the 1-inch piezometers were approximately 16 fbgs for PZ-2 through PZ-14 and 20 fbgs for PZ-1. Piezometer construction details are presented on the Field Borehole Logs in Appendix B.

The borings for MW-1, MW-2, and MW-3 were advanced through unconsolidated overburden soil/fill material as described in Section 2.1 to facilitate monitoring well installation to bottom depths of 39 feet (MW-1) and 40 feet (MW-2 and MW-3). Monitoring well construction details are presented on the Field Borehole Logs in Appendix B.

2.4.2 Groundwater Sampling and Analysis

Monitoring wells were developed and sampled as described in the Work Plan (Ref. 1). Prior to groundwater sampling, static depth to groundwater measurements were obtained

and are summarized in Table 4. Groundwater samples were collected from piezometers PZ-1 through PZ-10 on November 16 and 20, 2006, monitoring wells MW-1 through MW-3 on December 8, 2006, and piezometers PZ-11 through PZ-14 on January 5, 2007. Appendix C contains groundwater purge and sample collection logs for these locations.

Groundwater samples from all monitoring wells and piezometers were analyzed for TCL VOCs. In addition, groundwater samples from piezometers PZ-5 and PZ-6 and monitoring wells MW-1 and MW-2 were analyzed for TCL SVOCs, PCBs/Pesticides, TAL Metals, Chemical Oxygen Demand (COD), nitrate and sulfate in accordance with NYSDEC ASP CLP methodology. The November 2006 groundwater analytical data is summarized in Table 5. Field parameters including pH, temperature, specific conductance, turbidity, dissolved oxygen and oxidation-reduction potential (ORP) were measured during sampling and are also summarized on Table 5.

2.5 April 2008 Supplemental Groundwater Investigation

Three new groundwater monitoring wells, designated MW-4, MW-5 and MW-6, were installed at the locations shown on Figure 3 and are summarized on Table 3 MW-5 was screened from 10-20 fbgs to further delineate the shallow groundwater on-site. MW-4 (32 to 47 fbgs) and MW-6 (35 to 50 fbgs) were screened at deeper intervals to further delineate deeper groundwater.

2.5.1 Monitoring Well Installation

The soil boring for MW-4 was completed using continuous split-spoon sampling techniques in two-foot intervals from the ground surface to the top of bedrock (see Section 2.2.1). During the boring installation, soil samples were field-screened to assess for the presence of DNAPL. Since there was no evidence of DNAPL, MW-4 was screened from within the first one-foot of weathered rock, or from the top of competent bedrock, to 10 feet above the bedrock interface. MW-4 was constructed with a three-foot sump below the soil/bedrock interface. The purpose of the sump is to collect any undetected DNAPL that may have accumulated at the surface of the competent rock.

Soil boring MW-6 was installed into the bedrock beneath the Site to serve both environmental and geotechnical purposes (see Section 2.3). MW-6 was completed using continuous split-spoon sampling techniques in two-foot intervals from the ground surface to the top of bedrock. The boring was cored approximately six feet into the rock to assess rock

integrity and to provide geotechnical data. MW-6 was constructed as a well with a two-foot sump within the bedrock and a screened interval ranging from the approximate soil/bedrock interface to 10 feet above the soil/bedrock interface.

The monitoring wells were constructed using 2-inch diameter flush-joint Schedule 40 PVC with a 10-foot Schedule 40 PVC, 0.010-inch machine slotted well screen. Each well screen and attached riser was placed at the bottom of each borehole and a silica sand filter pack (size #0 or similar) was installed from the base of the well to a maximum of 2 feet above the top of the screen. Prior to sand filter pack installation at wells MW-4 and MW-6, bentonite chips were installed and allowed to hydrate sufficiently around the sump. A bentonite chip seal was then installed above the sand filter pack and allowed to hydrate sufficiently to mitigate the potential for downhole grout contamination. Cement/bentonite grout was installed to approximately 1 fbgs via pressure tremie-pipe procedures. The newly installed monitoring wells were completed with keyed alike locks, a lockable J-plug, and an 8-inch diameter steel flush mounted road box anchored within a 2-foot by 2-foot by 1-foot square concrete pad.

2.5.2 Groundwater Sampling and Analysis

The new and existing monitoring wells were developed and sampled as described in the Supplemental RI Work Plan (Ref. 3). Appendix C contains purge and sample collection logs. Prior to groundwater sampling, static depth to groundwater measurements were obtained and are summarized in Table 4 Following water level measurements, Benchmark personnel purged and sampled monitoring wells MW-1, MW-3, MW-4, MW-5, and MW-6, as well as piezometers PZ-1 through PZ-6 and PZ-11 through PZ-14 on April 24-25, 2008. All groundwater samples were analyzed for TCL VOCs via USEPA SW-846 Method 8260. The April 2008 groundwater analytical data is summarized in Table 6. Field parameters including pH, temperature, specific conductance, turbidity, dissolved oxygen and ORP were measured during sampling and are also summarized on Table 6.

2.6 Groundwater Flow Assessment

Surveyed top of riser elevations and static depth to water measurements from Site piezometers and monitoring wells obtained during the RI groundwater monitoring events are summarized in Table 4. An isopotential map, prepared from the June 2012 data showing

the general direction of groundwater flow at the Site toward the south-southwest, is presented as Figure 4.

2.7 Field Specific Quality Assurance/Quality Control

In addition to the subsurface soil, soil/fill, soil vapor, and groundwater samples described above, field-specific quality assurance/quality control (QA/QC) samples were collected and analyzed to ensure the reliability of the generated data as described in the QAPP and to support the required third-party data usability assessment effort. Site-specific QA/QC samples included matrix spikes, matrix spike duplicates, blind duplicates, and trip blanks.

2.8 Site Survey and Mapping

A Site map was developed during the RI field investigation. All historic as well as RI sample points and relevant Site features were located on the map. Following monitoring well installation, Benchmark personnel employed a Trimble GeoXT handheld GPS unit to identify the locations of all sample locations, including newly installed piezometers and wells, relative to State planar grid coordinates. The top of each riser pipe from newly installed piezometers and monitoring wells was measured by Benchmark's surveyor using an arbitrary reference elevation of 500.00 feet above mean sea level (fmsl). An isopotential map showing the groundwater elevations was prepared based on water level measurements relative to USGS vertical datum (see Figure 4) and geologic cross–sections were developed based on the data collected during the subsurface investigation (see Figure 5).

2.9 NYSDEC Off-Site Investigation

Initial NYSDEC off-site investigation activities were performed between May 2008 and May 2009 at the 267 Franklin Street apartment building, which was considered off-Site at that time, and located on the 432 Pearl Street Site, 265 Franklin Street (Insty-Prints building and alley), and 259 Delaware Avenue (WGRZ TV rear parking lot) parcels (see Figure 3). This off-site investigation included:

- Collection and analyses of indoor air and soil vapor samples;
- Installation of a sub-slab vapor mitigation system;
- Advancement of four shallow and four deep soil borings;
- Collection and analysis of eight subsurface soil samples;

- Installation of four groundwater monitoring well couplets comprised of four shallow and four deep overburden groundwater monitoring wells;
- Collection and analysis of eight groundwater samples; and
- Survey measurement and mapping of the work area and sample locations

Results of this initial off-site investigation are included in the Departments Immediate Work Assignment Summary Report (December 2009) (Ref. 12) and briefly summarized below.

2.9.1 Soil Vapor and Indoor Air Quality Assessment Sampling

The Department performed four air sampling events as part of their off-site investigation: Event #1 was performed May 29, 2008 at 265 Franklin Street (Insty Prints) which included two indoor air and one outdoor air locations; Event #2 was performed October 28-29, 2008 at the 267 Franklin Street apartment building, which is located on the 432 Pearl Street Site, which included three indoor air, one outdoor air, and on subslab vapor locations; Event #3 was performed February 23, 2009 following installation and activation of an active subslab depressurization (ASD) system at the 267 Franklin Street apartment building, which included the same five locations as Event #2; and Event #4 was performed on September 15, 2009 at the 267 Franklin Street apartment building, which included the same three indoor air locations as Events #2 and #3.

In December 2008, NYSDEC communication testing results determined two separate systems comprised of five and three suction points, respectively, were necessary for the ASD system installed and activated at the 267 Franklin Street apartment building. The ASD system is discussed further in Section 5.3.

2.9.2 Soil Investigation

In May 2009, a drilling investigation was performed at the three previously identified off-site properties and included the advancement of eight borings; all completed as shallow/deep couplet monitoring wells (see Figure 3) as discussed in the next section. Deep overburden borings/wells were advanced through unconsolidated fine sand and dense till to bedrock approximately 50 fbgs. Shallow borings were completed in the unconsolidated fine sand approximately 20 fbgs. Boring logs provided by the Department are presented in Appendix B. Based on visual, olfactory, and PID field measurements, two soil samples were

collected at each deep boring location and submitted for VOC analysis via Method 8260. Analytical results are discussed in Section 4.1.6.

2.9.3 2009 Groundwater Investigation

The NYSDEC installed eight shallow/deep monitoring well couplets subsequent to their boring investigation in May 2009. Off-site monitoring wells, designated as MW-21S, -21D, -22S, -22D, -23S, -23D, 24S, and -24D, where the "S" suffix denotes a shallow overburden well and "D" a deep overburden well, are shown on Figure 3. In general, shallow monitoring wells straddled the water table and were screened approximately from 10 to 20 fbgs, whereas the deep monitoring wells were screened approximately 40 to 50 fbgs, just above bedrock (Ref. 12). Monitoring well construction details and boring logs provided by the Department are summarized in Table 3 and presented in Appendix B, respectively. Groundwater samples were subsequently collected May 26-27, 2009 for VOC analysis via Method 8260. Groundwater analytical results are discussed in Section 5.3.

2.9.1 2012 Additional Groundwater Investigation

According to the Department's assessment of groundwater results from their initial investigation, an additional off-site Groundwater Investigation was performed during the fall of 2012 that included the installation and sampling of three additional shallow groundwater monitoring wells MW-25S, MW-26S, and MW-27S (see Figure 3). Groundwater analytical results are discussed in Section 5.3.

2.10 Additional On-Site Deep Groundwater Quality Assessment

At the request of the NYSDEC, BDC installed MW-7, an additional deep groundwater monitoring well on the south (hydraulic down-gradient) portion of the 432 Pearl Street Site in May 2012 (see Figure 3). Monitoring well construction details and boring logs are summarized in Table 3 and presented in Appendix B, respectively. Groundwater samples were subsequently collected from MW-7 in June 2012 for VOC analysis via Method 8260. Groundwater analytical results are discussed in Section 5.2.

3.0 SITE PHYSICAL CHARACTERISTICS

The physical characteristics of the BCP Sites observed during the RI are described in the following sections.

3.1 General Site Features

The BCP Sites encompass approximately 0.97 acres comprised of four parcels in the City of Buffalo, New York (see Figure 2). Due to the proximity of the BCP Sites, the Site features are discussed collectively below. Three of the parcels are used as commercial surface parking lots covered by asphalt. There is an occupied apartment building located on approximately half of 267 Franklin Street (southern portion of the 432 Pearl Street Site) with the remainder of that parcel existing as surface parking.

3.2 Geology

3.2.1 Overburden

The BCP Sites are located within the Erie-Ontario lake plain physiographic province, which is typified by little topographic relief and gentle slope toward Lake Erie, except in the immediate vicinity of major drainage ways (Ref. 13). The surficial geology of the Lake Erie Plain generally consists of a thin glacial till (if present), glaciolacustrine deposits, recent alluvium, and the soils derived from these deposits. Glacial till deposits were not encountered at the BCP Sites. Glaciolacustrine deposits are characterized as thinly bedded to laminated silts and clays, which were deposited in lakes impounded between glacial ice and ice-free highland areas. As the glacial ice retreated northward in Erie County, water depths decreased and coarser grained shallow water sediments were deposited. These shallow water deposits included sandy beach ridges that defined lake edges, sand bars associated with offshore currents, and near shore silty fine sands. These sands exist below soil/fill at the BCP Sites.

Surface soils within the City are characterized as urban land with level to gently sloping land in which 80 percent or more of the soil surface is covered by asphalt, concrete, buildings, or other impervious structures (Ref. 13) typical of an urban environment. The presence of overburden fill material is widespread and common throughout the City of

Buffalo. The BCP Sites overburden soils have been described as soil/fill to approximately 2- to 5-feet below ground surface (fbgs) overlying native glaciolacustrine sand and silt with intermittent silty clay lenses (see Figure 5). The U.S. Department of Agriculture Soil Conservation Service soil survey map of Erie County (Ref. 13) describes the general soil type at the BCP Sites as urban land.

Field characterization confirms the presence of soil/fill over much of the BCP Sites with sandy beach ridge deposits underlying the fill with intermittent silty clay lenses. Field Boring Logs are included in Appendix B and Figure 5 illustrates geologic cross sections in the area of investigation.

3.2.2 Bedrock

Based on the bedrock geologic map of Erie County (Refs. 14 and 15), the BCP Sites are situated over Onondaga Formation of the Middle Devonian Series. The Onondaga Formation is comprised of a varying texture from coarse to very finely crystalline with a dark gray to tan color and chert and fossils within. The unit has an approximated thickness of 110 to 160 feet. Structurally, the bedrock formations strike in an east-west direction and exhibit a regional dip that approximates 40 feet per mile (3 to 5 degrees) toward the south and southwest. As a result of this dip, the older Onondaga limestone outcrops or subcrops north of the Hamilton Group (Ref. 15). An intersecting, orthogonal pattern of fractures and joint sets are common throughout the bedrock strata (Ref. 15). The surficial geomorphology of the bedrock strata was modified by period sub-aerial erosion and continental glaciation (Ref. 15).

Bedrock below the BCP Sites was encountered at approximately 52.5 fbgs at soil boring locations MW-1, MW-4, and MW-6 during investigation drilling activities. Figure 5 illustrates geologic cross sections in the area of investigation.

3.3 Hydrogeology

Table 4 summarizes the survey and groundwater elevation data collected from the Site since November 2006. Unconfined groundwater was encountered at the BCP Sites within the native fine sand soil unit at depths of approximately 10 to 12 fbgs (see Table 4). Figure 4 presents a shallow groundwater isopotential map prepared from the most recent

groundwater monitoring event in June 2012. Water level measurements were obtained from on-site groundwater monitoring wells and piezometers as well as off-site NYSDEC wells MW-23S and MW-24S during the June 2012 Post-IRM groundwater monitoring event (see Section 5.0). Based on groundwater elevation data, groundwater at the BCP Sites flows south-southwest with a more southerly off-site component south of the BCP Sites. The measured gradient across the BCP Sites averages 0.005 feet/feet based on the isopotential map. This low gradient is typical of an unconfined water table aquifer. Regional groundwater appears to flow west/southwest toward Lake Erie and the mouth of the Niagara River.

Hydraulic conductivity testing of the aquifer was conducted via slug testing in monitoring wells MW-1, MW-2, and MW-3. The average hydraulic conductivity was estimated at 6.4×10^{-4} centimeters per second (cm/sec) using the Bouwer and Rice Method (Ref. 16). Average linear velocity of groundwater at the BCP Sites was estimated at 1.1×10^{-5} cm/sec or 3.1×10^{-2} feet per day (ft/day) assuming an effective porosity of 0.35 and an average hydraulic gradient of 0.005 feet/feet (see Appendix D).

Groundwater elevation data collected during several groundwater monitoring events between 2006 and 2012 are also summarized on Table 4; groundwater elevation data is generally consistent with 2012 data and the isopotential map is presented on Figure 4.

4.0 INVESTIGATION RESULTS BY MEDIA

The following sections discuss the results of the historic investigations, November 2006 RI and April 2008 Supplemental RI activities [post-IRM soil and groundwater data is discussed in Section 5]. NYSDEC also completed off-Site investigations in 2009 and 2012 and provided the results of their investigations to BDC; soil results are discussed below and groundwater results are discussed in Section 5 along with on-Site post-IRM groundwater results. Tables 1 and 2 summarize the on-Site soil analytical data, Tables 5 and 6 summarize groundwater analytical data from November 2006 and April 2008, and Table 7 summarizes the soil vapor analytical data. Reports and data provided by NYSDEC are provided in Appendix A. The BCP Sites' analytical data is included in Appendix E. Figure 3 presents all investigation soil borings as well as groundwater piezometers and monitoring wells.

For discussion purposes, the data is compared with Standards, Criteria, and Guidance values (SCGs) applicable to each medium as follows:

- Tables 1 and 2 present a comparison of the detected subsurface soil/fill parameters to 6NYCRR Part 375-6 Restricted-Residential SCOs (December 2006) SCOs for all parameters and 6NYCRR Part 375-6 Protection of Groundwater SCOs for VOCs.

- Tables 5 and 6 present a comparison of the detected groundwater parameters to the Class GA Groundwater Quality Standards and Guidance Values (GWQSs/GVs) per NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1998).

Sample results compared the above criteria are described below according to media and contaminant class.

4.1 Soil/Fill

Soil/fill sampling was conducted in four general phases: an historical investigation (2004); initial RI (2006-2007); Supplemental RI (2008); and, post-IRM soil sampling (2009). Post-IRM soil results are discussed in Section 5.0; all other results are discussed below in the context of pre-IRM conditions.

4.1.1 Volatile Organic Compounds

The majority of samples analyzed for VOCs were reported as non-detectable, at trace (estimated) concentrations below the laboratory sample quantitation limits, or below Restricted-Residential and Protection of Groundwater SCOs. Soil samples with VOCs above Restricted Residential l and/or Protection of Groundwater SCOs were limited to PCE in soil samples collected from B-3, MW-4 and MW-6 (see Tables 1 and 2). Of note and as described in the DUSR (see Appendix F), the correlation of PCE results for soil sample MW-6 (8-10 fbgs) between the blind duplicate and parent samples was very poor (2,200 DJ for the parent versus 6.9 J for the blind duplicate). PCE concentrations in the matrix spikes of the sample agree more closely with the duplicate results and the DUSR suggests a non-homogeneous soil matrix is the cause. Due to this disparity, the higher, more conservative result (for the parent sample) has been reported in Table 2 and the blind duplicate sample result has been omitted.

4.1.2 Semi-volatile Organic Compounds

The majority of samples analyzed for SVOCs were reported as non-detectable, at trace (estimated) concentrations below the sample quantitation limit or below Restricted Residential SCOs (see Tables 1 and 2). Constituents detected above the Restricted Residential SCOs were limited to certain polycyclic aromatic hydrocarbons (PAHs) at two samples locations on the 432 Pearl Street Site, including, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, chrysene, and indeno(1,2,3-cd)pyrene at sample location SB-1, and benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene at sample location SB-2.

4.1.3 Inorganic Compounds

Inorganic compounds (metals) were reported as non-detectable, at trace (estimated) concentrations below the sample quantitation limit or below Restricted Residential SCOs for all sample locations except SB-2 (see Tables 1 and 2) on the 432 Pearl Street Site, which contained concentrations of lead and mercury slightly above their Restricted Residential SCOs.

4.1.4 Pesticides/PCBs

Pesticides and PCBs were reported as non-detectable, at trace (estimated) concentrations below the sample quantitation limit or below Commercial SCOs (see Tables 1 and 2).

4.1.5 NYSDEC Off-Site Soil Investigation

Soil samples were collected by the NYSDEC from sample locations MW-21D (18-20), MW-21D (44-46), MW-22D (18-20), MW-22D (44-46), MW-23D (18-20), MW-23D (44-46), MW-24D (10-12) and MW-24D (44-46) and analyzed for VOCs during their 2009 Off-Site Investigation. None of the samples contained VOCs above Part 375 Unrestricted SCOs.

4.1.6 Soil/Fill Summary

As described above, concentrations of inorganics pesticides and PCBs were below Restricted Residential SCOs on both BCP Sites. PAHs were detected above Restricted Residential SCOs at two samples locations on the 432 Pearl Street parcel, including benzo(a)anthracene, benzo(b)fluoranthene benzo(k)fluoranthene, benzo(a)pyrene, chrysene, and indeno(1,2,3-cd)pyrene at sample location SB-1, and benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene at sample location SB-2.

Regarding VOCs, the soil analytical results show concentrations of PCE were detected above Restricted Residential and/or Protection of Groundwater SCOs on the 275 Franklin Street Site (see Figure 6). The highest concentration of PCE (2,200 mg/kg) was detected in the 8- to 10-foot interval in boring MW-6 during the April 2008 sampling event. Off-Site samples did not contain VOCs above Unrestricted SCOs. As discussed in Section 5, the VOC concentrations in the 275 Franklin Street Site soil were addressed with an IRM in 2008/2009.

4.2 Groundwater

Groundwater sampling was conducted in four general phases: an historic investigation (2004); initial RI (2006-2007), Supplemental RI (2008); and, post-IRM groundwater monitoring (2008-2012). NYSDEC also completed off-Site groundwater

investigations in 2009 and 2012 and provided the results of their investigation to BDC. Post-IRM groundwater results, including off-Site groundwater results provided by NYSDEC, are discussed in Section 5.0; all other results are discussed below.

4.2.1 Volatile Organic Compounds

During the September 2004 historical investigation, PCE was detected in the groundwater samples from BMW-3 and BMW-5 at concentrations of 137,000 micrograms per liter (µg/L) and 70,400 µg/L, respectively.

During the initial RI (including December 2006 and January 2007), all 17 groundwater samples were analyzed for TCL VOCs. PCE was detected in all samples ranging from 2 µg/L (PZ-10) to 18,000 µg/L (PZ-11). Of the 17 locations sampled, 13 locations were detected at concentrations greater than the GWQS/GV of 5 µg/L for PCE. While the highest PCE concentrations were found on the historic dry cleaner property (i.e., 275 Franklin Street Site), the PCE-impacted groundwater appears to have migrated through the sandy soils to all parcels within the BCP Sites (see Figures 7 and 8). Other exceedances of the GWQS included chemical breakdown products of PCE, including trichloroethene (TCE) at locations PZ-5, PZ-11, PZ-14, and MW-1, and cis-1,2-dichloroethene (cis-1,2-DCE) at locations PZ-5, PZ-6, PZ-11, and PZ-14. Methylene chloride, a common laboratory contaminant, was also detected above its GWQS at PZ-11 and MW-1.

During the Supplemental RI, PCE was detected in 14 of the 15 groundwater samples at concentrations above the GWQS/GV; concentrations ranged from 0.55 ug/L in MW-3 to 23,000 ug/L in PZ-12. PCE concentrations in PZ-5, PZ-6, and MW-1 decreased from the sampling conducted in November 2006, while PCE concentrations detected in the other samples increased. Higher concentrations of PCE breakdown products TCE and cis-1,2-DCE were generally observed during the April 2008 sampling event.

Table 5 summarizes historic investigation and RI sampling groundwater results and Table 6 summarizes Supplemental RI sampling groundwater results. Figures 7 through 10 are isoconcentration maps for Total VOCs PCE, TCE, and cis-1,2-DEC in shallow groundwater as of the completion of the initial RI, respectively. Figure 11 is an isoconcentration map for PCE in intermediate/deep groundwater for the same period. Subsequent post-IRM groundwater monitoring results completed in 2009-2012 are discussed in Section 5.0.

4.2.2 Semi-Volatile Organic Compounds

During the initial RI, samples for SVOC analysis were collected from shallow groundwater piezometers PZ-5 and PZ-6, and intermediate groundwater wells MW-1 and MW-2. PAHs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene were detected only in MW-2 (and/or its blind duplicate) at estimated concentrations exceeded their respective Class GA GWQSs/GVs (see Table 5).

4.2.3 Inorganic Compounds

During the initial RI, samples were collected from shallow groundwater piezometers PZ-5 and PZ-6, intermediate groundwater wells MW-1 and MW-2 for metals analysis. Arsenic, chromium, copper, iron, lead, manganese, and sodium concentrations exceeded Class GA GWQSs/GVs in shallow groundwater piezometer PZ-5. Iron, lead, manganese, and sodium concentrations exceeded GWQSs/GVs in shallow groundwater piezometer PZ-6. The groundwater sample collected from well MW-1 included exceedances of GWQSs/GVs for iron and sodium and the groundwater sample from well MW-2 (and/or its blind duplicate) included exceedances for iron, manganese, and sodium. See Table 5 for a summary of groundwater results.

4.2.4 Pesticides/PCBs

Samples collected from shallow groundwater piezometers PZ-5 and PZ-6, intermediate groundwater wells MW-1 and MW-2 in the initial RI were either non-detect or well below GWQSs for pesticide and polychlorinated biphenyl (PCB) compounds (see Table 5).

4.2.5 Groundwater Summary

The groundwater analytical results indicate cVOC-impacted groundwater (predominantly PCE) on both BCP Sites. Chemical breakdown products of PCE (i.e., TCE, cis-1,2-DCE) were also detected in the groundwater at monitoring locations proximate and/or hydraulically downgradient of the highest residual VOC-impacted area (i.e., MW-5). Figures 8 and 11 present the estimated extent of the shallow and deep Pre-IRM PCE groundwater plumes, respectively, on the BDC parcels upon completion of the initial RI.

Figures 9 and 10 present the corresponding shallow TCE and cis-1,2-DCE groundwater plumes for the same period.

Based on the current and historic data, VOCs have migrated both hydraulically down-gradient and cross-gradient via advection-diffusion processes from the 275Franklin Street Site onto the 432 Pearl Street Site and off-Site. Extensive post-IRM groundwater monitoring was completed from 2008 through 2012, which is further discussed in Section 5.

4.3 Soil Vapor

Sub-surface soil vapor samples were collected at three locations on 432 Pearl Street Site (SGV-1 through SGV-3) during the initial RI and historically at one location on the 432 Pearl Street Site and one on the 275 Franklin Street Site (both identified as "AIR"). Soil vapor concentrations at the 432 Pearl Street Site ranged from non-detect (sample location SGV-1) to 140 ug/m^3 (historic sample location "AIR"). Soil vapor results from 275 Franklin Street Site reported PCE (14,000 ug/m^3), TCE (70 ug/m^3), and 1,1,1-trichloroethane (71 ug/m^3) among other constituents. Soil vapor results are summarized in Table 7 and illustrated on Figure 12.

Soil vapor samples collected from the 432 Pearl Street Site building by NYSDEC ranged from non-detect to 1,200 ug/m^3 PCE; several samples exceeded New York State Department of Health (NYSDOH) air matrix criteria. Samples collected from 265 Franklin Street (off-site) did not exceed the NYSDOH criteria. The NYSDEC report is provided in Appendix A.

4.4 Data Usability Summary

In accordance with the RI Work Plans (Refs. 1 and 3), the laboratory analytical data was independently assessed and, as required, submitted for independent review. Ms. Judy Harry of Data Validation Services located in North Creek, New York performed the data usability summary assessment for the soil/fill and groundwater samples, which involved a review of the summary form information and sample raw data, and a limited review of associated QC raw data. Specifically, the following items were reviewed:

- Laboratory Narrative Discussion

- Custody Documentation
- Holding Times
- Surrogate and Internal Standard Recoveries
- Matrix Spike Recoveries/Duplicate Recoveries
- Field Duplicate Correlation
- Preparation/Calibration Blanks
- Control Spike/Laboratory Control Samples
- Instrumental IDLs
- Calibration/CRI/CRA Standards
- ICP Interference Check Standards
- ICP Serial Dilution Correlations
- Sample Results Verification

The Data Usability Summary Reports (DUSRs) were conducted using guidance from the USEPA Region 2 validation Standard Operating Procedures, the USEPA National Functional Guidelines for Data Review, as well as professional judgment. Appendix F includes the DUSRs, which were prepared in accordance with Appendix 2B of NYSDEC's draft DER-10 guidance (November 2009). Those items listed above that demonstrated deficiencies are discussed in detail in the DUSRs. Analytical results were edited or qualified per the DUSR with changes reflected on Tables 1, 2, 5 and 6.

5.0 INTERIM REMEDIAL MEASURES (IRMS)

The data obtained during the historic investigation, RI and Supplemental RI was utilized to develop an IRM Work Plan (June 2008) (Ref. 4) for the 275 Franklin Street Site. The IRM Work Plan was implemented on behalf of BDC to promptly address on-Site soil and groundwater impacted by cVOCs to immediately mitigate public health and environmental concerns. Specific elements of the IRM, as implemented, included:

- A soil vapor extraction (SVE) system;
- Injection of one round of hydrogen release compound (HRC) into shallow and intermediate depth Site groundwater via 35 injection points; and,
- Eight rounds of groundwater performance monitoring to determine the effectiveness of the HRC injection.

Figures 13 and 14 present the 275 Franklin Street Site IRM SVE system layout and HRC injection point locations, respectively. Figure 3 presents the performance groundwater monitoring locations.

Although not part of the IRM Work Plan, the NYSDEC also installed an active subslab depressurization (ASD) system within the apartment building at 267 Franklin Street (on the 432 Pearl Street Site). The ASD system is discussed in the context of an IRM for purposes of this report in Section 5.3 below.

5.1 Soil Vapor Extraction

In accordance with the NYSDEC-approved IRM Work Plan (June 2008) (Ref. 4), the installation of the 275 Franklin Street Site SVE system was completed on December 8, 2008 and operated continuously until February 2009, when it was temporarily shut-down due to winter weather. The system was restarted on March 11, 2009 and ran continuously through September 2009. Figure 13 presents the SVE system layout.

Figure 15 illustrates the calculated VOC contaminant mass removal of between approximately 575-3,600 pounds (see Table 8) based upon air flow and exhaust air concentrations (prior to granular activated carbon (GAC) treatment). Based upon the substantial reduction of VOCs observed in the exhaust air, soil borings were completed and

samples collected at two locations on September 17, 2009 to document reduction in VOC concentrations in unsaturated subsurface soils on the 275 Franklin Street Site following approximately 9 months of SVE operations. The samples were collected from the previous sample locations of the highest observed VOC concentrations in soil (i.e., MW-4 and MW-6).

Soil samples, designated as Samples B-4-2 (4-6), B-4-2 (8-10), B-6-2 (4-6) and B-6-2 (8-10), were collected from borings completed adjacent to monitoring wells MW-4 and MW-6, respectively, at depths of 4-6 feet and 8-10 feet below grade. The post-IRM soil sample results are summarized in Table 9 in comparison to pre-IRM data collected in April 2008 as well as Restricted Residential SCOs. Review of this data shows significant reductions of chlorinated VOCs in unsaturated soils to well below Restricted Residential SCOs. In fact, the results are below Unrestricted Use SCOs in all samples. Toxicity Characteristic Leaching Procedure (TCLP) analyses also verifies that these soils are not hazardous by characteristic.

5.2 In-Situ Groundwater Treatment & Post IRM Monitoring

In addition to SVE, in-situ enhanced bioremediation of cVOCs was accomplished across the 275 Franklin Street Site using one round of HRC injected into 14 delivery points at 275-277 Franklin and 21 delivery points at 279 Franklin in August 2008. Subsequent to HRC injection, a groundwater sampling program was implemented to evaluate the effectiveness of the in-situ groundwater treatment program. Groundwater samples were collected from piezometers and monitoring wells for TCL VOC analysis during eight groundwater monitoring events: October and December 2008, February, April, and July 2009, March 2010, June 2011, and June 2012. In addition, piezometer PZ-5 and monitoring wells MW-4, MW-5, and MW-6 were also analyzed for microbial parameters (dehalococcoides, tceA Reductase, BAV1 VC Reductase or bvcA Reductase, and Vinyl Chloride Reductase), water quality parameters (soluble iron, soluble manganese, nitrate as nitrogen, sulfate, ethane, ethene, methane) and field parameters (pH, temperature, specific conductance turbidity, oxygen-reduction potential (ORP), and dissolved oxygen (DO)). IRM groundwater analytical results are summarized in Table 10.

5.2.1 Shallow Groundwater Quality Assessment

Post-IRM groundwater monitoring was completed from October 2008 through June 2012. The IRM performance groundwater monitoring data presented in Table 10 shows general lower trending residual concentrations of total cVOCs in both BCP Sites' monitoring wells with the exception of MW-5 (located on the 275 Franklin Street Site). Figure 16 illustrates the post-IRM total cVOCs concentrations in shallow groundwater from the June 2012 groundwater monitoring event. Concentrations of post-IRM cVOCs in shallow groundwater (June 2012) were decreased by approximately 22% (PZ-2) to 97% (PZ-12) in the shallow piezometers and monitoring wells on-Site, with an average 73% reduction of cVOCs across both BCP Sites. However, elevated concentrations of cVOCs, particularly PCE, remain in the vicinity of MW-5 where residual PCE was observed at 70,000 ug/L as of June 2012. The VOC groundwater data from MW-5 coupled with observed low concentrations of dehalococcoides densities observed in monitoring well MW-5 and piezometer PZ-5 in the March 2010 sampling event, as well as the relatively low total organic carbon (TOC) concentration observed in July 2009, is an indication that the initial HRC has been exhausted in these locations.

Shallow groundwater data from off-Site wells collected by NYSDEC (June 2011 and October 2012) and BDC (June 2012) is also summarized in Table 10 and included within the groundwater concentration maps. [Although the sampling periods of the most recent groundwater data collected from off-site wells varies from the on-site wells, the NYSDEC has requested that the most recent groundwater data collected from off-site wells MW-21 (S/D), MW-22 (S/D), MW-23 (S/D), and MW-24 (S/D), MW-25S, MW-26S, and MW-27S presented in Table 10 be used to prepare the isoconcentration plume figures.]

Based on the relative high residual cVOCs concentrations remaining in the MW-5 area on the 275 Franklin Street Site, shallow groundwater will require additional remedial measures beyond the completed IRM; the planned additional remedial approach is discussed in Section 8.

5.2.2 Intermediate/Deep Groundwater Quality Assessment

The IRM performance groundwater monitoring data presented in Table 10 shows generally lower trending residual concentrations of total cVOCs in all on-Site intermediate and deep monitoring wells. Figure 17 shows the post-IRM total cVOCs concentrations in

intermediate/deep groundwater wells. Concentrations of total cVOCs in deep groundwater on-Site in June 2012 ranged from 1 ug/L (MW-2 and MW-3) to 139 ug/L (MW-6) with an average concentration of 56 ug/L total cVOCs.

Concentrations of post-IRM cVOCs in intermediate/deep groundwater (June 2012) decreased by approximately 58% (MW-4) to 99% (MW-6) in the monitoring wells on both Sites, with an average 86% reduction of cVOCs in deep groundwater. Furthermore, cVOCs in deep groundwater continue to degrade under reducing conditions as evidenced by low ORP, low DO, presence of PCE chemical breakdown products and general downward trend in total cVOCs concentrations. MW-7, the furthest down-gradient deep monitoring well has a total cVOCs concentration of 69 ug/L, which is predominantly comprised of cis-1,2-DCE (i.e., 51 ug/L), a chemical breakdown product of PCE; this is further evidence of continued degradation of cVOCs in deep groundwater.

Deep groundwater data from four off-Site wells collected by NYSDEC (June 2011 and October 2012) and BDC (June 2012) is also summarized in Table 10 and included within Figure 17. All of the off-site deep groundwater monitoring wells had no detections of cVOCs, with the exception of MW-24D, which had a total cVOCs concentration of 101 ug/L, which is predominantly comprised of cis-1,2-DCE (i.e., 100 ug/L), a chemical breakdown product of PCE; this is evidence of continued degradation of cVOCs in deep groundwater.

Based on the successful treatment of source-area cVOC-impacted soils to below Unrestricted SCOs, relative low cVOCs concentrations in deep groundwater, on-going degradation of cVOCs in shallow and deep groundwater, lack of potential exposure routes to deep groundwater, and planned additional remedial measures in the shallow groundwater, additional remedial measures to address deep groundwater are not warranted.

5.3 Active Subslab Depressurization System

An ASD system was installed in the 267 Franklin Street apartment building on the 432 Pearl Street Site by the NYSDEC prior to BDC's ownership of that parcel. An ASD system creates a low-pressure zone beneath a building slab using a powered fan connected via piping to create negative pressure beneath the building foundation. The low pressure field prevents soil gas from entering the building. The NYSDEC, in association with New York State Department of Health (NYSDOH), designed, installed, and monitored the ASD

system at 267 Franklin. It is considered within the context of this RI to be an integral component of the implemented IRM. The Final Engineering Report, to be submitted as a separate document, will include additional details of this IRM.

6.0 FATE AND TRANSPORT OF COCS

The soil vapor, subsurface soil/fill, and groundwater sample analytical results were incorporated with the physical characterization of the BCP Sites to evaluate the fate and transport of COCs in BCP Sites' media. The mechanisms by which the COCs can migrate to other areas or media are briefly outlined below. In all instances, the potential pathways are evaluated in the context of post-IRM conditions.

6.1 Fugitive Dust Generation

Volatile and non-volatile chemicals present in soil/fill can be released to ambient air as a result of fugitive dust generation. The concentrations of VOCs detected in the soil/fill were adequately addressed during the IRM and currently comply with Unrestricted Use SCOs. However, certain low-concentration SVOCs and metals are present slightly above Restricted Residential SCOs in soil/fill at 432 Pearl Street. The BCP Sites are currently covered with asphalt pavement or concrete walks for the parcels used as a surface parking lot (i.e. 275-277 Franklin Street, 279 Franklin Street and 432 Pearl Street), or the 267 Franklin Street building and concrete walks; therefore, this potential migration pathway is not considered relevant while the properties remain as surface parking lots and an apartment building. Fugitive dust generation during excavations related to construction and BCP Sites' redevelopment is considered a relevant potential short-term migration pathway; however, dust generation will be monitored and (if needed) mitigated by routine dust mitigation measures during future development.

Based on the IRM completed, the current and future land use, and both BCP Sites being covered by structures, concrete, or asphalt, this migration pathway is not relevant under the current and reasonably anticipated future land use.

6.2 Volatilization

Volatile chemicals present in soil and groundwater may be released to ambient air through volatilization either from or through the soil or fill. Several VOCs (primarily PCE) were detected at depth in the 275 Franklin Site soils; however the VOCs detected in the soil/fill were adequately addressed during the IRM via SVE and currently comply with Unrestricted Use SCOs. Four VOCs (PCE, TCE, cis-1,2-DCE and methylene chloride) were detected above Class GA groundwater quality standards. Of note, PCE was detected above

groundwater quality standards at all monitoring locations in June 2012, with the exception of PZ-7, PZ-8, PZ-10, MW-2 and MW-3. Therefore, the groundwater-to-air pathway is considered relevant for both BCP Sites. The 267 Franklin Street building is currently protected by an ASD system.

6.3 Surface Water Runoff

Erosion and transport of surface soils and associated sorbed chemicals in surface water runoff is a potential migration pathway. The potential for soil particle transport with surface water runoff is low as both BCP Sites are mostly flat lying and covered by structures, concrete, or asphalt. In addition, both BCP Sites are serviced by a storm water sewer collection and conveyance system that provides a mechanism for controlled surface water transport. As such, surface water runoff is not considered a relevant migration pathway.

6.4 Leaching

Chemicals present in soil may migrate downward to groundwater as a result of infiltration of precipitation. The SVE IRM removed VOCs in soil to below unrestricted SCOs. The BCP Sites are serviced by a storm water sewer collection and conveyance system that provides a mechanism for controlled surface water transport and/or collection of precipitation. The proposed future land use of the BCP Sites (predominately covered by building and asphalt) also reduces the potential for leaching provided the integrity of the surface cover is maintained. As such, leaching is not considered a relevant migration pathway.

6.5 Groundwater Transport

Groundwater underlying the BCP Sites migrates to the south-southwest toward Lake Erie and the Niagara River. The BCP Sites' hydrogeology is discussed in Section 3.3. As described in Sections 4 and 5, groundwater data indicates VOCs impact to the BCP Sites' groundwater. VOCs present in groundwater may be transported from the BCP Sites via this pathway. The BCP Sites and surrounding area are serviced by a municipal (supplied) water service, with no evidence of potable wells within 1 mile of the subject properties. However, because VOCs may be transported off-Site via groundwater migration, this is a relevant migration pathway.

6.6 Exposure Pathways

Based on the analysis of chemical fate and transport provided above, the pathways through which BCP Sites' COCs could reach receptors at significant exposure point concentrations are: fugitive dust generated during future construction and redevelopment activities on the 432 Pearl Street Site; incidental contact with soil/fill with elevated SVOCs and metals on the 432 Pearl Street Site; incidental contact with groundwater on both BCP Sites; and/or, volatilization of contaminants in groundwater through the soil/fill into the overlying existing and planned building structures on-Site or into off-Site buildings. The potential significance of COCs in terms of on-site and off-site receptors is evaluated in Section 7.0.

7.0 QUALITATIVE RISK ASSESSMENT

7.1 Potential Human Health Risks

A qualitative exposure assessment consists of characterizing the exposure setting (including the physical environment and potentially exposed human populations), identifying exposure pathways, and evaluating contaminant fate and transport.

An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements:

- A receptor population.
- A contaminant source
- Contaminant release and transport mechanism
- A point of exposure
- A route of exposure

The receptor population is the people who are or may be exposed to contaminants at a point of exposure. The source of contamination is defined as either the source of contaminant release to the environment (such as a waste disposal area or point of discharge), or the impacted environmental medium (soil, air, biota, water) at the point of exposure. Contaminant release and transport mechanisms carry contaminants from the source to points where people may be exposed. The point of exposure is a location where actual or potential human contact with a contaminated medium may occur. The route of exposure is the manner in which a contaminant actually enters or contacts the body (i.e., ingestion, inhalation, dermal absorption).

An exposure pathway is complete when all five elements of an exposure pathway are documented; a potential exposure pathway exists when any one or more of the five elements comprising an exposure pathway is not documented but could reasonably occur. An exposure pathway may be eliminated from further evaluation when any one of the five elements comprising an exposure pathway does not exist in the present, and will not exist in the future.

7.1.1 Potential Receptors

The identification of potential human receptors is based on the characteristics of the BCP Sites, the surrounding land uses, and the probable future land uses. The BCP Sites are currently used as a commercial surface parking lot covered by asphalt (i.e. 275-277 Franklin Street, 279 Franklin Street, and 432 Pearl Street) and an apartment building (i.e., 267 Franklin Street).

Under current site conditions, human contact with site-related COCs can be expected to occur primarily by two types of receptors: construction workers that may encounter impacted subsurface soil/fill, groundwater, airborne dust, or airborne VOCs to construct buildings and/or service utilities; and, occupants of on-site and off-site down-gradient buildings via vapor intrusion from impacted groundwater and/or soil gas. Occupants of buildings located hydraulically down-gradient of the BCP Sites may be comprised of children, adolescents, and adults, whereas construction workers would be limited to adults. The Sites and down-gradient properties are serviced by municipal (supplied) water; therefore, direct exposure to on-site or off-site groundwater would be limited to incidental contact by construction workers.

In terms of future use, the current BCP Sites' developer (Buffalo Development Corporation) intends to redevelop the Sites as a hotel and conference center. The majority of the Sites would be covered with a building. There is potential short-term exposure for construction workers to soil/fill and fugitive dust impacted with SVOCs and metals on the 432 Pearl Street Site as well as short-term exposure for construction workers to groundwater and/or airborne VOCs generated during excavations related to future construction on both BCP Sites; however, soil/fill handling, dust generation and airborne VOCs will be monitored during and (if needed) mitigated by proper soil/fill management, routine monitoring and mitigation measures during future development of the BCP Sites.

The future use is consistent with surrounding property use and zoning. Accordingly, the reasonably anticipated future use of the BCP Sites is for Restricted-Residential purposes, with potential on-site receptors comprised of the indoor commercial worker/building occupant and the construction worker, and potential off-site receptors comprised of occupants of down-gradient buildings and the construction worker.

7.1.2 Contaminant Source

The COCs present in the BCP Sites' media at elevated concentrations that require remediation are discussed in Sections 4 and 5. In general, these are limited to cVOCs in shallow groundwater.

7.1.3 Contaminant Release and Transport Mechanisms

Contaminant release and transport mechanisms are specific to the type of receptor. For the current use scenario, contaminant release and transport mechanisms are listed below by receptor:

- Construction worker: outdoor air VOC vapors, direct contact with soil/fill on the 432 Pearl Street Site and groundwater across both BCP Sites
- 432 Pearl Street Site building occupant: indoor air VOC vapors
- Down-gradient building occupant: indoor air VOC vapors

For the future (un-remediated) use scenario, contaminant release and transport mechanisms are listed below by receptor:

- Construction worker: indoor and outdoor air VOC vapors, direct contact with soil/fill on 432 Pearl Street Site and groundwater across both BCP Sites
- Indoor commercial worker: indoor air VOC vapors
- 432 Pearl Street Site building occupant: indoor air VOC vapors
- Down-gradient building occupant: indoor air VOC vapors

7.1.4 Point of Exposure

Certain SVOCs and metals are present slightly above Restricted Residential SCOs in soil/fill at the 432 Pearl Street Site. PCE, TCE, and cis-1,2-DCE were detected in groundwater across both BCP Sites at concentrations above Class GA GWQS/GV. The point of exposure is therefore defined as the area within the VOC groundwater plume and in the soil/fill on 432 Pearl Street Site.

7.1.5 Route of Exposure

Based on the types of receptors and points of exposure identified above, potential routes of exposure are listed below:

Current Use Scenario

- Construction Worker (short-term) – skin contact, incidental ingestion and inhalation
- On-site Occupant – inhalation via vapor intrusion
- Off-site Occupant – inhalation via vapor intrusion

Future Use Scenario

- Indoor Worker – inhalation via vapor intrusion
- Construction Worker (short-term)– skin contact with soil/fill or groundwater, inhalation of dust and airborne VOCs and incidental ingestion of soil/fill or groundwater
- On-site Occupant – inhalation via vapor intrusion, inhalation of airborne VOCs or fugitive dust (short-term during construction)
- Off-site Occupant – inhalation via vapor intrusion, inhalation of airborne VOCs or fugitive dust (short-term during construction)

7.1.6 Exposure Assessment Summary

Based on the above assessment of potential exposure receptors, sources, transport mechanisms, exposure points and routes of exposure, several potential exposure pathways exist. Soil/fill on the 432 Pearl Street Site contains SVOCs and metals above Restricted Residential SCOs and groundwater across both BCP Sites contains cVOCs above GWQS/GV, indicating a potential unacceptable human health risk if ingested. Inhalation of VOC vapors transmitted through soil and/or from groundwater into future buildings and/or into existing downgradient buildings may also pose an unacceptable human health risk. For future building workers, on-Site and down-gradient building occupants, the potential for health risk is dependent on the exposure point concentration (i.e., indoor air concentration), which is a function of several factors including groundwater concentration; vadose zone depth; building construction and ventilation; and chemical-specific factors.

7.2 Potential Ecological Risks

The BCP Sites were formerly occupied by various commercial and residential establishments located within a highly developed, urban area in the City of Buffalo. The BCP Sites are currently used as a commercial surface parking lot and apartment building, covered

by asphalt, providing no wildlife habitat or food value. No natural waterways are present on or adjacent to the BCP Sites. The reasonably anticipated future use is Restricted-Residential with the majority of the BCP Sites covered by structures and asphalt pavement. As such, no unacceptable ecological risks are anticipated under the current or reasonably anticipated future use scenario.

8.0 REMEDIAL ALTERNATIVES EVALUATION

8.1 Remedial Action Objectives

The final remedial measures for the 275 Franklin Street and 432 Pearl Street BCP Sites must satisfy Remedial Action Objectives (RAOs). RAOs are site-specific statements that convey the goals for minimizing or eliminating substantial risks to public health and the environment. Appropriate RAOs for the 275 Franklin Street and 432 Pearl Street BCP Sites are:

Soil

- Treatment or removal of impacted soil/fill to levels protective of human health and the environment (Part 375 Protection of Groundwater SCOs for VOCs, Restricted Residential SCOs for other parameters) and/or prevention of ingestion or direct contact with soil/fill that contains COCs above Part 375 Restricted Residential SCOs.

Groundwater

- Prevention of ingestion or direct contact with contaminated groundwater, and to prevent off-site migration.

Soil Gas

- Prevention of inhalation or exposure to contaminants volatilizing from contaminated groundwater or soil.

In addition to achieving RAOs, NYSDEC's Brownfield Cleanup Program calls for remedy evaluation in accordance with DER-10 Technical Guidance for Site Investigation and Remediation. Specifically, the guidance states "When proposing an appropriate remedy, the person responsible for conducting the investigation and/or remediation should identify and develop a remedial action that is based on the following criteria..:"

- **Overall Protection of Public Health and the Environment**. This criterion is an evaluation of the remedy's ability to protect public health and the environment, assessing how risks posed through each existing or potential pathway of exposure are eliminated, reduced, or controlled through removal, treatment, engineering controls, or institutional controls.
- **Compliance with Standards, Criteria, and Guidance (SCGs)**. Compliance with SCGs addresses whether a remedy will meet applicable environmental laws, regulations, standards, and guidance.

- **Long-Term Effectiveness and Permanence**. This criterion evaluates the long-term effectiveness of the remedy after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: (i) the magnitude of the remaining risks (i.e., will there be any significant threats, exposure pathways, or risks to the community and environment from the remaining wastes or treated residuals), (ii) the adequacy of the engineering and institutional controls intended to limit the risk, (iii) the reliability of these controls, and (iv) the ability of the remedy to continue to meet RAOs in the future.
- **Reduction of Toxicity, Mobility, or Volume with Treatment**. This criterion evaluates the remedy's ability to reduce the toxicity, mobility, or volume of Site contamination. Preference is given to remedies that permanently and significantly reduce the toxicity, mobility, or volume of the wastes at the Site.
- **Short-Term Effectiveness**. Short-term effectiveness is an evaluation of the potential short-term adverse impacts and risks of the remedy upon the community, the workers, and the environment during construction and/or implementation. This includes a discussion of how the identified adverse impacts and health risks to the community or workers at the Site will be controlled, and the effectiveness of the controls. This criterion also includes a discussion of engineering controls that will be used to mitigate short term impacts (i.e., dust control measures), and an estimate of the length of time needed to achieve the remedial objectives.
- **Implementability**. The implementability criterion evaluates the technical and administrative feasibility of implementing the remedy. Technical feasibility includes the difficulties associated with the construction and the ability to monitor the effectiveness of the remedy. For administrative feasibility, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc.
- **Cost**. Capital, operation, maintenance, and monitoring costs are estimated for the remedy and presented on a present worth basis.
- **Community Acceptance**. This criterion evaluates the public's comments, concerns, and overall perception of the remedy.

8.2 Future Land Use Evaluation

In developing and screening remedial alternatives, NYSDEC's Part 375 regulations require that the reasonableness of the anticipated future land be factored into the evaluation. The regulations identify 16 criteria that must be considered. These criteria and the resultant outcome for the BCP Sites are presented in Appendix G. As indicated, this evaluation

supports Restricted Residential use as the reasonably anticipated future use of the BCP Sites, which is consistent with current and past use of the Sites and surrounding properties. Accordingly, remedial alternatives to clean up the BCP Sites to restricted residential end use are identified and evaluated herein.

As discussed in Section 5.0, IRMs have been completed for the 275 Franklin Street Site and 432 Pearl Street, which included:

- A soil vapor extraction (SVE) system on the 275 Franklin Street Site;
- Injection of one round of hydrogen release compound (HRC) into groundwater via 35 injection points on the 275Franklin Street Site;
- Groundwater performance monitoring on both BCP Sites to determine the effectiveness of the HRC injection; and,
- Installation of an active subslab depressurization (ASD) system within the building at 267 Franklin Street (located on the 432 Pearl Street Site).

Although the BCP Sites are intended to be used for Restricted-Residential purposes, evaluating a more restricted-use scenario is a requirement of the BCP. Therefore, Table 9 shows post-SVE VOC soil/fill analytical data and Table 11 shows historic data and RI characterization soil/fill analytical data compared to Part 375 Unrestricted Use SCOs. Per NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, evaluation of a "no-action" alternative is also required to provide a baseline for comparison against other alternatives. The remedial alternatives discussed in greater detail in Section 8.3 below include:

- No Further Action beyond the completed IRM;
- Completed IRM, Groundwater Treatment, Soil Vapor Mitigation, Soil Cover and Implementation of a Site Management Plan (Track 4); and,
- Unrestricted Use Cleanup

8.3 Alternatives Evaluation

The following sections include a series of Site-wide remedial action alternatives that could potentially be implemented at the Site, which are compared to the criteria listed in Section 8.1. In all instances, the potential remedial alternatives are evaluated in the context of

post-IRM conditions. The remedial alternatives are evaluated in order of least comprehensive to most comprehensive.

8.3.1 No Further Action

Under this alternative, the Site would remain in its current state, with no additional controls in-place. Existing controls include an ASD system in the 267 Franklin Street building.

Overall Protection of Public Health and the Environment – The concentrations of VOCs detected in the soil/fill were adequately addressed during the IRM and currently comply with Unrestricted Use SCOs (the IRM achieved a higher level of cleanup than required for Restricted-Residential use). The ASD system in the 267 Franklin Street building is also protective for occupants of that building. However, the BCP Sites are currently not fully protective of human health and the environment due to the presence of certain low-concentration SVOCs and metals in soil/fill (i.e., SB-1 and SB-2, 432 Pearl Street Site), elevated VOCs in groundwater, absence of engineering controls to prevent volatilization of VOCs into future buildings constructed on-Site, and the absence of institutional controls to prevent more restrictive forms of future Site use (e.g., unrestricted, residential), export of impacted Site soils to uncontrolled off-Site locations, and control of fugitive dust and protection of workers during on-Site building and utility construction.

Compliance with SCGs – Under the current and reasonably anticipated future Restricted-Residential use scenario, the concentrations of constituents detected in the soil/fill comply with applicable SCOs, with minor exception noted above. The ASD system in the 267 Franklin Street building is also protective for occupants of that building. However, elevated concentrations of residual VOCs are present in groundwater on portions of both BCP Sites and continue to migrate off-Site..

Long-Term Effectiveness and Permanence – The concentrations of VOC in the soil/fill were adequately addressed during the IRM and currently comply with applicable SCOs. The ASD system in the 267 Franklin Street building is also protective for occupants of that building. The no further action alternative involves no additional equipment,

engineering or institutional controls, or facilities subject to maintenance, and provides no long-term effectiveness toward achieving the RAOs.

Reduction of Toxicity, Mobility, or Volume with Treatment – The IRMs completed at the 275 Franklin Street Site have reduced the toxicity, mobility and volume of COCs in soil and groundwater have protected the building at 267 Franklin from soil vapor intrusion. However, low-concentration SVOCs and metals in soil/fill and residual VOCs in groundwater do remain on portions of the BCP Sites, and therefore, no further action does not fully satisfy the RAOs.

Short-Term Effectiveness – There would be no short-term adverse impacts and risks to the community, workers, or the environment attributable to implementation of the no further action alternative.

Implementability – No technical or administrative implementability issues are associated with the no further action alternative.

Cost – The capital cost of the IRMs was approximately $350,000. With the exception of maintenance of the ASD system at 267 Franklin Street, there would be no capital or long-term operation, maintenance, or monitoring costs associated with the no further action alternative.

8.3.2 Completed IRM Plus Additional Shallow Groundwater Treatment, Soil Cover, On-Site Soil Vapor Mitigation & Implementation of a Site Management Plan (Track 4)

The previously implemented IRMs achieved treatment of the VOC-contaminated soil/fill on-Site to below Unrestricted Use SCOs (275 Franklin Street Site), overall reduction of concentrations of VOCs in groundwater (both BCP Sites) and protection of the occupants of the 267 Franklin Street building from soil vapor intrusion (432 Pearl Street Site). However, low-concentration SVOCs and metals in soil/fill and residual VOCs in groundwater remain on-Site, and the IRMs as completed do not fully satisfy the RAOs. This remedial alternative will provide additional measures to supplement the completed IRM, allow for Restricted-Residential redevelopment of the BCP Sites, and mitigate the potential

for further off-site migration of cVOC-impacted groundwater. The details of this alternative include:

- **No additional soil cleanup** activities at the BCP Sites beyond that which was already performed as an IRM.
- **In-Situ Groundwater Treatment** via enhanced natural attenuation of VOCs in groundwater (e.g., microbial inoculation, zero-valent iron, hydrogen release compounds, or a combination thereof). Although the final groundwater treatment program design will be developed in a Remedial Action Work Plan, the conceptual approach includes: in-situ treatment of the highest residual VOC-contaminated shallow groundwater in the immediate vicinity of MW-5 on the 275 Franklin Street Site and down-gradient of MW-5 along the accessible southern and western property boundaries (both BCP Sites) and subsequent groundwater monitoring program. The conceptual approach is illustrated in Figure 18.
- **A Soil Cover system.**
- **An ASD system** within future buildings on the Site.
- **Implementation of a Site Management Plan (SMP)**. The SMP will include:
    - **Institutional Controls and Engineering Controls (IC/EC) Plan**. Engineering controls include any physical barrier or method employed to actively or passively contain, stabilize, or monitor contaminants; restrict the movement of contaminants; or eliminate potential exposure pathways to contaminants. Institutional controls at the site will include groundwater use restrictions and use restrictions of the BCP Sites to restricted use (i.e., Restricted-Residential purposes);
    - **Operation and Maintenance Plan** that describes the measures necessary to operate, monitor, and maintain the mechanical components of the ASD system(s);
    - **Excavation Work Plan** to assure that future intrusive activities and soil/fill handling at the BCP Sites are completed in a safe and environmentally responsible manner;
    - **Site Monitoring Plan** that includes: provisions for a groundwater monitoring plan and a Site-wide inspection program to assure that the IC/ECs have not been altered and remain effective; and,

- **Environmental Easement** filed with Erie County.

Overall Protection of Public Health and the Environment – Since the IRM achieved treatment of VOC-contaminated soil/fill to below Unrestricted Use SCOs, this alternative is protective of human health and the environment and effectively achieves soil RAOs for COCs at the 275 Franklin Street Site. The ASD system in the 267 Franklin Street building (432 Pearl Street Site) is also protective for occupants of that building. However, the BCP Sites are not currently fully protective of human health and the environment due to the presence of certain low-concentration SVOCs and metals in soil/fill (i.e., SB-1 and SB-2, 432 Pearl Street Site); a soil cover system will mitigate this concern. Elevated VOCs in groundwater will be addressed by additional in-situ treatment of impacted groundwater. ASD system(s) in the 267 Franklin Street building and future buildings will provide engineering controls to prevent volatilization of VOCs into future buildings constructed on-Site. An environmental easement and SMP will provide institutional controls to prevent more restrictive forms of future site use (e.g., unrestricted, residential), export of impacted Site soils to uncontrolled off-Site locations, and control of fugitive dust and protection of workers during on-Site building and utility construction.

Compliance with SCGs – Since the IRM achieved treatment of VOC-contaminated soil/fill to below Unrestricted Use SCOs, this alternative is protective of human health and the environment and effectively achieves soil RAOs for the 275 Franklin Street Site. Low-concentration SVOCs and metals in soil/fill on the 432 Pearl Street Site will be managed via the SMP during future intrusive and construction activities. In-situ treatment will reduce contaminant concentrations in groundwater on both BCP Sites. ASD systems in the 267 Franklin building and future buildings on both BCP Sites mitigate potential VOC vapor intrusion concerns. The SMP will include appropriate plans, controls, and measures and an environmental easement to ensure the restricted use remedy is protective of human health and the environment.

Long-Term Effectiveness and Permanence – The IRM achieved treatment of VOC-contaminated soil/fill to below Unrestricted Use SCOs and reduced overall VOC concentrations in groundwater. This alternative is protective of human health and the

environment and effectively achieves soil RAOs for the 275 Franklin Street Site. Low-concentration SVOCs and metals in soil/fill on the 432 Pearl Street Site will be managed via the SMP during future intrusive and construction activities. In-situ groundwater treatment on both BCP Sites will remediate the contaminants in groundwater over a period of years, during which time groundwater will be monitored until concentrations decrease to acceptable levels. ASD systems in the 267 Franklin building and future buildings on both BCP Sites mitigate potential VOC vapor intrusion concerns. The SMP will include appropriate plans, controls, and measures and an environmental easement to ensure the restricted use remedy is protective of human health and the environment. The SMP will be followed by the current BCP Sites owner as well as future Site owners. As such, this alternative is expected to provide long-term effectiveness and permanence.

Reduction of Toxicity, Mobility, or Volume with Treatment – The IRM achieved treatment of contaminated soil/fill to below Unrestricted Use SCOs and significantly reduced overall VOC concentrations in groundwater. This alternative is protective of human health and the environment and effectively achieves soil RAOs for the 275 Franklin Street Site. Low-concentration SVOCs and metals in soil/fill on the 432 Pearl Street Site: were only observed in two boring locations; are located beneath relatively impervious asphalt pavement; and, will be managed via the SMP during future intrusive and construction activities. In-situ treatment will further reduce contaminant concentrations in groundwater on both BCP Sites. ASD systems in the 267 Franklin building and future buildings on both BCP Sites mitigate potential VOC vapor intrusion concerns. The SMP will include appropriate plans, controls, and measures and an environmental easement to ensure the restricted use remedy is protective of human health and the environment. Accordingly, this alternative satisfies this criterion.

Short-Term Effectiveness – The short-term adverse impacts and risks to the community, workers, and environment during implementation of the IRM were effectively controlled. The potential for chemical exposures and physical injuries were reduced through safe work practices; proper personal protection equipment; environmental monitoring; establishment of work zones and Site control; and appropriate decontamination procedures. The IRM effectively achieved the soil RAOs for the 275 Franklin Street Site. Low-concentration SVOCs and metals in soil/fill on the 432 Pearl Street Site will be managed via

the SMP during future intrusive and construction activities. ASD system(s) in future building(s) will be installed during building construction, with minimal additional impact to the community and construction workers. The in-situ treatment could be implemented within a few weeks and groundwater treatment will reduce VOCs in groundwater across both BCP Sites over a period of years.

Implementability – This remedial alternative is appropriate for current and future planned site uses for both BCP Sites. No technical or action-specific administrative implementability issues are associated with implementation of this alternative. Materials and equipment to implement this remedy are readily available.

Cost – The capital cost of the IRM was approximately $350,000, with an estimated amount of $200,000 to complete the additional remedial tasks. Annual certification and groundwater monitoring is estimated at approximately $10,600 per year. Based on an assumed 30 years of groundwater monitoring and annual certifications, the net present value of this alternative is approximately $712,000 as shown on Table 12A. Table 12C is a summary of costs of each of the alternatives.

Community Acceptance – The RI Work Plan and IRM Work Plan were publically advertised per the Citizen Participation Plan and made available for public comment, with no comments being received.

8.3.3 Unrestricted Use Alternative

An Unrestricted Use alternative would necessitate remediation of all soil/fill where concentrations exceed the Unrestricted Use SCOs per 6NYCRR Part 375 after implementation of the IRM (see Table 11). For Unrestricted Use scenarios, excavation and off-site disposal of impacted soil/fill is generally regarded as the most applicable remedial measure, because institutional controls cannot be used to supplement the remedy. As such, the Unrestricted Use alternative assumes that those areas with constituents above Unrestricted Use SCOs would be excavated and disposed at an off-Site commercial solid waste landfill. Although the IRM achieved treatment of VOC-contaminated soil/fill to below Unrestricted Use SCOs (see Table 9) on the 275 Franklin Street Site, some constituents are present above Unrestricted Use SCOs (see Table 11) on the 432 Pearl Street

Site. These constituents are limited to low-concentration SVOCs, pesticides, PCBs, lead and mercury (predominantly estimated concentrations below laboratory detection limits). Based on the locations of the samples with constituents above Unrestricted Use SCOs, both BCP Sites would need to be excavated in a total of three areas as shown on Figure 19: on 275/277 Franklin Street in the area shown to a depth of approximately 10 fbgs; on 279 Franklin Street in the area shown to an approximate depth of 4 fbgs; and, on 432 Pearl Street in the area shown to a depth of approximately 4 fbgs. The estimated total volume of impacted soil/fill that would be removed from these areas is approximately 2,200 cubic yards.

Based on the existing exceedances of groundwater concentrations, this alternative assumes that groundwater remediation and long-term monitoring would be the same level of effort as required in the remedial alternative in evaluated in the previous section.

Overall Protection of Public Health and the Environment – The Unrestricted Use alternative would achieve the corresponding Part 375 SCOs, which are designed to be protective of human health under any reuse scenario.

Compliance with SCGs – The Unrestricted Use alternative would be performed in accordance with applicable, relevant, and appropriate standards, guidance, and criteria.

Long-Term Effectiveness and Permanence – The Unrestricted Use alternative would achieve removal of all residual impacted soil/fill; therefore, no soil/fill exceeding the Unrestricted SCOs would remain on the BCP Sites. As a result of in-situ treatment, VOCs in groundwater would decrease over time. As such, the Unrestricted Use alternative would provide long-term effectiveness and permanence. Post-remedial groundwater monitoring would be required to document groundwater concentrations over time.

Reduction of Toxicity, Mobility, or Volume with Treatment – Through removal of all impacted soil/fill and reduction of VOC concentrations in groundwater, the Unrestricted Use alternative would permanently and significantly reduce the toxicity, mobility, and volume of contamination on the BCP Sites.

Short-Term Effectiveness – The short-term adverse impacts and risks to the community, workers, and environment during implementation of the Unrestricted Use

alternative are not considered significant and are controllable, but would increase the duration of time community, workers, and the environment is exposed to fugitive dust and potentially VOC vapors from groundwater during remediation.

Implementability **–** Technical implementability would be a minor barrier to construction of the Unrestricted Use alternative. However, given the success of the completed IRM to reduce VOCs in soil/fill below Unrestricted Use SCOs and the relative low concentrations of non-COPC constituents above Unrestricted Use SCOs in soil/fill, excavating a large portion of the BCP Sites is not considered a reasonable alternative given the planned institutional controls and the current and reasonably anticipated future use of the Sites.

Cost – The capital cost of implementing an Unrestricted Use alternative is estimated at $1,435,000 (see Table 12B), which is the cost of the unrestricted use cleanup plus the capital costs of the IRM that was completed. Groundwater treatment and post-remedial groundwater monitoring costs would also be incurred. Table 12C is a summary of costs of each of the alternatives.

Community Acceptance – Community acceptance will be evaluated based on comments to be received from the public in response to Fact Sheets and other planned Citizen Participation activities.

8.4 Recommended Remedial Measure

Based on the Remedial Alternatives Analysis evaluation, the **Completed IRM Plus Additional Shallow Groundwater Treatment, Soil Cover, On-Site Soil Vapor Mitigation, and Implementation of a Site Management Plan (Track 4)** fully satisfies the remedial action objectives and is fully protective of human health and the environment. Therefore, this alternative is the recommended final remedial approach for the 275 Franklin Street Site and 432 Pearl Street Site.

9.0 FINDINGS AND CONCLUSIONS

9.1 Remedial Investigation

Based on the Pre-IRM data collected during historic investigations, the NYSDEC-approved RI, Supplemental RI and NYSDEC off-Site investigations presented in the preceding sections, we offer the following summary and conclusions.

Soil

- Concentrations of pesticides, PCBs, and metals in subsurface soil were below Part 375 Restricted-Residential SCOs on the 275 Franklin Street Site.
- Concentrations of PCE were detected above Restricted-Residential SCOs on the 275 Franklin Street Site with highest concentration (2,200 mg/kg) in the 8- to 10-foot interval in boring MW-6 during the April 2008 sampling event.
- Concentrations of VOCs, pesticides and PCBs in subsurface soil were below Part 375 Restricted-Residential SCOs on the 432 Pearl Street Site.
- Concentrations of lead and mercury were detected slightly above their respective Restricted-Residential SCOs at one sample location on the 432 Pearl Street Site.
- PAHs, including benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)pyrene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene were detected in subsurface soil above Restricted Residential SCOs at one or two samples locations on the 432 Pearl Street Site.
- Soil samples collected by the NYSDEC and analyzed for VOCs during their 2009 Off-Site Investigation did not contain VOCs above Part 375 Unrestricted SCOs.

Soil Vapor

- Soil vapor concentrations at 432 Pearl Street Site ranged from non-detect to 140 ug/m^3. Soil vapor results from the 275 Franklin Street Site reported PCE (14,000 ug/m^3), TCE (70 ug/m^3), and 1,1,1-trichloroethane (71 ug/m^3) concentrations among other constituents.
- Soil vapor samples collected from the 432 Pearl Street Site building by NYSDEC exceeded NYSDOH air matrix criteria; samples collected from 265 Franklin Street (off-site) did not exceed those criteria.

Groundwater

- Total inorganic compounds arsenic, chromium, copper, iron, lead, manganese, and/or sodium concentrations exceeded Class GA GWQSs/GVs at sample locations PZ-5, PZ-6, MW-1, and/or MW-2. These compounds either slightly exceeded their respective GWQS/GV and/or are naturally occurring minerals.
- PAHs were detected only in MW-2 (and/or its blind duplicate) at estimated concentrations that exceeded their respective Class GA GWQSs/GVs.

- cVOCs are the primary COC in shallow groundwater with PCE and/or its chemical breakdown products, TCE and cis-1,2-DCE, detected above GWQS/GV on both BCP Sites and off-site.
- The highest cVOCs concentrations were generally observed in the shallow groundwater in the area of the former drycleaner on 275 Franklin Street Site and immediately down-gradient on the 267 Franklin Street parcel on the 432 Pearl Street parcel.
- Additional conclusions regarding cVOCs in groundwater are discussed below in the context of post-IRM groundwater monitoring.

9.2 Interim Remedial Measures Completed

Based on the data discussed above, a NYSDEC-approved IRM Work Plan was implemented to promptly address on-Site soil and groundwater impacted by cVOCs. The IRM included an SVE system that was installed on the 275 Franklin Street Site and operated from December 2008 to September 2009 to treat the elevated PCE concentrations in unsaturated soil/fill in the area of the former drycleaner on the 275-277 Franklin Street parcel. As another component of the IRM, HRC was injected into shallow and intermediate depth 275 Franklin Street Site groundwater in August 2008 on the 275-277 and 279 Franklin Street parcels and groundwater was monitored from October 2008 through March 2010 to determine the effectiveness of the HRC injection. Although not part of the IRM Work Plan, the NYSDEC also installed an ASD system within the apartment building at 267 Franklin Street (part of the 432 Pearl Street Site). The results of the IRM are discussed below.

<u>SVE of cVOCs in Soil</u>

- The post-IRM soil sample results show significant reductions of cVOCs in unsaturated soils on the 275 Franklin Street Site in the areas of the former drycleaner with all post-IRM soil samples below Part 375 Unrestricted Use SCOs.
- PCE concentrations in the subsurface soils at the Site near MW-6 at 8 to 10 fbgs were reduced from 2,200 mg/kg to 0.0076 mg/kg.

<u>In-Situ Groundwater Treatment and Post-IRM Groundwater Monitoring</u>

- Post-IRM cVOCs groundwater concentrations decreased from 22% (PZ-2) to 99% (MW-6). The average cVOC concentration reduction in groundwater achieved by the IRM across both BCP Sites was 77%.

<u>Shallow Groundwater Assessment</u>

- Shallow cVOCs concentrations in groundwater across both BCP Sites have shown a decreasing trend since implementation of the in-situ soil SVE and in-situ groundwater treatment IRMs.
- The highest residual cVOC-impacted area is MW-5 on the 275-277 Franklin parcel where a PCE concentration of 70,000 ug/L was observed in June 2012.

Intermediate/Deep Groundwater Assessment

- Intermediate/deep cVOCs concentrations in groundwater across both BCP Sites have shown a decreasing trend since implementation of the in-situ soil SVE and in-situ groundwater treatment IRMs at the 275 Franklin Street Site.
- Intermediate/deep groundwater data from groundwater across both BCP Sites indicates concentrations of cVOCs at low concentrations, from less than 1 ug/L to 139 ug/L, with an average concentration of 56 ug/L total cVOCs.
- MW-7, the furthest down-gradient deep monitoring well has a total cVOCs concentration of 69 ug/L, which is predominantly comprised of cis-1,2-DCE (i.e., 51 ug/L), a chemical breakdown product of PCE; this is evidence of continued degradation of cVOCs in deep on-site groundwater.
- Three of the four off-site deep groundwater monitoring wells had no detections of cVOCs; MW-24D had a total cVOCs concentration of 101 ug/L, which is predominantly comprised of cis-1,2-DCE (i.e., 100 ug/L), a chemical breakdown product of PCE; this is evidence of continued degradation of cVOCs in deep off-site groundwater.

Groundwater Assessment Summary

- Based on the relative high residual cVOCs concentrations remaining in the MW-5 area, shallow groundwater will require additional remedial measures beyond the completed IRMs.
- Based on the successful treatment of source-area cVOC-impacted soils to below Unrestricted SCOs, relative low cVOCs concentrations in deep groundwater, on-going degradation of cVOCs in shallow and deep groundwater, lack of potential exposure routes to deep groundwater, and planned additional remedial measures in the shallow groundwater, additional remedial measures to address deep groundwater are not warranted.[1]

9.3 Remedial Alternatives Analysis

An Alternatives Analysis was completed to evaluate potential remedial alternatives that satisfy site-specific remedial action objectives. Based on that analysis, the selected remedy includes:

Completed IRM Plus Additional In-Situ Shallow Groundwater Treatment, Soil Cover, On-Site Soil Vapor Mitigation & Implementation of a Site Management Plan (Track 4)

[1] This approach is consistent with other BCP sites, including the Carriage Cleantown Site in Penfield, NY, where deep groundwater remediation was not required by NYSDEC. At that site, PCE concentrations in deep groundwater are on the same order of magnitude as the 275 Franklin Street Site and PCE concentrations in shallow groundwater are over 150,000 ug/L, which is higher than at the 275 Franklin Street Site.

- **No additional soil cleanup** activities at the BCP Sites beyond that which was already performed as an IRM.
- **In-Situ Groundwater Treatment** via enhanced natural attenuation of VOCs in groundwater (e.g., microbial inoculation, zero-valent iron, hydrogen release compounds, or a combination thereof). Although the final groundwater treatment program design will be developed in a Remedial Action Work Plan, the conceptual approach includes: in-situ treatment of the highest residual VOC-contaminated shallow groundwater in the immediate vicinity of MW-5 on the 275 Franklin Street Site and down-gradient of MW-5 along the accessible southern and western property boundaries (both BCP Sites) and subsequent groundwater monitoring program (both BCP Sites). The conceptual approach is illustrated in Figure 18.
- **A Soil Cover system.**
- **An ASD system** within future buildings on the BCP Sites.
- **Implementation of a Site Management Plan (SMP)**. The SMP will include:
    - **Institutional Controls and Engineering Controls (IC/EC) Plan**. Engineering controls include any physical barrier or method employed to actively or passively contain, stabilize, or monitor contaminants; restrict the movement of contaminants; or eliminate potential exposure pathways to contaminants. Institutional controls at the site will include groundwater use restrictions and use restrictions of the BCP Sites to restricted use (i.e., Restricted-Residential purposes);
    - **Operation and Maintenance Plan** that describes the measures necessary to operate, monitor, and maintain the mechanical components of the ASD system(s);
    - **Excavation Work Plan** to assure that future intrusive activities and soil/fill handling at the BCP Sites are completed in a safe and environmentally responsible manner;
    - **Site Monitoring Plan** that includes: provisions for a groundwater monitoring plan and an inspection program across both BCP Sites to assure that the IC/ECs have not been altered and remain effective; and,
    - **Environmental Easement** filed with Erie County.

The selected remedial alternative fully satisfies the remedial action objectives and is protective of human health and the environment. Therefore, this alternative is the recommended final remedial approach for both the 275 Franklin Street Site and the 432 Pearl Street Site.

An electronic copy of this report is presented in Appendix H.

10.0 REFERENCES

1. Benchmark Environmental Engineering & Science, PLLC. *Remedial Investigation Work Plan, Buffalo Development Corporation Hotel Site, Buffalo, NY*. July 2006.

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TABLES

TABLE 1

SUMMARY OF SOIL ANALYTICAL DATA - NOVEMBER 2006

275 Franklin Street & 432 Pearl Street Sites
BCP Sites No. C915208 & C915237
Buffalo, New York

Parameter [1]	Sample Event																						Restricted Residential SCOs [3]	Protection of Groundwater SCOs
	Historical Data							Brownfield Cleanup Program Remedial Investigation Data																
	275-277 Franklin St. (September 2004)		279 Franklin St. (January 2006)		432 Pearl St. (November 2006)			279 Franklin St. (November 2006)			275-277 Franklin St. (November 2006)					432 Pearl St. (November 2006)						267 Franklin St. (November 2006)		
	B-3 (10-12')	B-5 (10-12')	SB-1	SB-2	SB-1	SB-2	SB-3	PZ-1 (1-4')	PZ-2 (6-8')	PZ-3 (2-4')	PZ-4 (6-8')	PZ-5 (8-9')	PZ-6 (6-8')	MW-1 (6-10')	BD [2] (6-10')	PZ-8 (1-4')	PZ-9 (2-4')	PZ-9 (4-8')	PZ-10 (4-8')	SB-4 (4-8')	MW-2 (2-6')	MW-3 (6-8')		
TCL Volatile Organic Compounds (VOCs) - mg/kg [4]																								
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.006 J	ND	0.002 J	0.003 J	ND	ND	NA	ND	ND	ND	ND	**100**	**1.1**
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	0.017	ND	ND	**100**	**0.05**
Tetrachloroethene (PCE)	**12.7**	0.671	ND	ND	ND	ND	ND	0.044	0.006 J	0.042	0.018	0.015	0.01	0.13 J	0.54 J	ND	ND	NA	ND	ND	ND	0.078	**19**	**1.3**
Total VOCs	*12.7*	*0.671*	*0*	*0*	*0*	*0*	*0*	*0.044*	*0.006*	*0.042*	*0.018*	*0.021*	*0.01*	*0.132*	*0.543*	*0*	*0*	*--*	*0*	*0.017*	*0*	*0.078*	*--*	*--*
TCL SVOCs - base neutral fraction (mg/kg) [4]																								
Acenaphthene	NA	NA	ND	ND	ND	1.4 J	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	ND	NA	ND	NA	NA	**100**	NA
Acenaphthylene	NA	NA	ND	ND	ND	0.48 J	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	ND	NA	ND	NA	NA	**100**	NA
Anthracene	NA	NA	ND	ND	ND	2.7 J	ND	NA	NA	NA	NA	NA	NA	ND	0.009 J	0.024 J	NA	ND	NA	ND	NA	NA	**100**	NA
2,4-Dinitrophenol	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	1.4 J	3.7 J	1 J	NA	0.86 J	NA	ND	NA	NA	**--**	NA
Benzo(a)anthracene	NA	NA	ND	0.44 J	**7.2 J**	**7.7 J**	0.8 J	NA	NA	NA	NA	NA	NA	0.013 J	0.041 J	0.14 J	NA	ND	NA	ND	NA	NA	**1**	NA
Benzo(b)fluoranthene	NA	NA	ND	0.57 J	**10 J**	**12**	0.93 J	NA	NA	NA	NA	NA	NA	0.015 J	0.062 J	0.16 J	NA	ND	NA	ND	NA	NA	**1**	NA
Benzo(k)fluoranthene	NA	NA	ND	ND	**4.4 J**	2.6 J	0.35 J	NA	NA	NA	NA	NA	NA	0.012 J	0.016 J	0.16 J	NA	ND	NA	ND	NA	NA	**3.9**	NA
Benzo(ghi)perylene	NA	NA	ND	0.47 J	4.7 J	4.2 J	0.38 J	NA	NA	NA	NA	NA	NA	0.014 J	0.035 J	0.05 J	NA	ND	NA	ND	NA	NA	**100**	NA
Benzo(a)pyrene	NA	NA	ND	ND	**7.2 J**	**8.3**	0.74 J	NA	NA	NA	NA	NA	NA	0.009 J	0.044 J	0.14 J	NA	ND	NA	ND	NA	NA	**1**	NA
Bis (2-ethylhexyl) phthalate	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	11	5.9	ND	NA	ND	NA	0.028 BJ	NA	NA	**--**	NA
Butyl benzyl phthalate	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.75	0.4	ND	NA	ND	NA	ND	NA	NA	**--**	NA
Carbazole	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	0.039 J	NA	ND	NA	ND	NA	NA	**--**	NA
Chrysene	NA	NA	ND	ND	**7.8 J**	**8.4 J**	0.71 J	NA	NA	NA	NA	NA	NA	0.012 J	0.04 J	0.2 J	NA	ND	NA	ND	NA	NA	**3.9**	NA
Dibenzo (a,h) anthracene	NA	NA	ND	ND	ND	**1.3 J**	ND	NA	NA	NA	NA	NA	NA	0.014 J	0.011 J	0.017 J	NA	ND	NA	ND	NA	NA	**0.33**	NA
Dibenzofuran	NA	NA	ND	ND	ND	1.1 J	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	ND	NA	ND	NA	NA	**--**	NA
Di-n-butyl phthalate	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.18 J	0.13 J	ND	NA	ND	NA	ND	NA	NA	**--**	NA
Di-n-octyl phthalate	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.52	0.3 J	ND	NA	ND	NA	ND	NA	NA	**--**	NA
Fluoranthene	NA	NA	0.63 J	0.55 J	18 J	20	1.9 J	NA	NA	NA	NA	NA	NA	0.019 J	0.083 J	0.49	NA	ND	NA	ND	NA	NA	**100**	NA
Fluorene	NA	NA	ND	ND	ND	1.3 J	ND	NA	NA	NA	NA	NA	NA	ND	ND	0.011 J	NA	ND	NA	ND	NA	NA	**100**	NA
Indeno (1,2,3-cd) pyrene	NA	NA	ND	ND	**4.3 J**	**3.8 J**	0.36 J	NA	NA	NA	NA	NA	NA	0.016 J	0.038 J	0.065 J	NA	ND	NA	ND	NA	NA	**0.5**	NA
2-Methylnaphthalene	NA	NA	ND	ND	ND	0.66 J	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	ND	NA	ND	NA	NA	**--**	NA
Naphthalene	NA	NA	ND	ND	ND	1.3 J	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	ND	NA	ND	NA	NA	**100**	NA
N-Nitroso-Di-n-propylamine	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	0.34 J	0.34 J	NA	ND	NA	NA	**--**	NA
Phenanthrene	NA	NA	ND	ND	12 J	17	1.5 J	NA	NA	NA	NA	NA	NA	0.01 J	0.044 J	0.22 J	NA	ND	NA	ND	NA	NA	**100**	NA
Pyrene	NA	NA	0.53 J	0.58 J	17 J	21	1.7 J	NA	NA	NA	NA	NA	NA	0.016 J	0.059 J	0.27 J	NA	ND	NA	ND	NA	NA	**100**	NA
Total SVOCs	***--***	***--***	***1.16***	***2.61***	***92.6***	***113***	***9.37***	***--***	***--***	***--***	***--***	***--***	***--***	***14.0***	***10.9***	***2.99***	***0.34***	***1.20***	***--***	***0.03***	***--***	**NA**	***--***	***NA***
Pesticides/PCBs (mg/kg) [4]																								
Dieldrin	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.0051 J	0.0038 J	ND	NA	ND	NA	ND	NA	NA	**0.2**	NA
4,4'-DDE	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.0053 J	0.0037 J	ND	NA	ND	NA	ND	NA	NA	**8.9**	NA
4,4'-DDD	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.0089 J	0.0067 J	ND	NA	ND	NA	ND	NA	NA	**13**	NA
4,4'-DDT	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.044 J	0.026 J	0.0005 J	NA	ND	NA	ND	NA	NA	**7.9**	NA
Methoxychlor	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	0.0068 NJ	ND	NA	ND	NA	ND	NA	NA	**--**	NA
Endrin	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.015 J	0.019 J	ND	NA	ND	NA	ND	NA	NA	**11**	NA
Endrin ketone	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.003 J	ND	ND	NA	0.0007 J	NA	ND	NA	NA	**--**	NA
Endrin aldehyde	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	1E-03 NJ	NA	ND	NA	ND	NA	NA	**--**	NA
alpha-Chlordane	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.0035 J	ND	ND	NA	ND	NA	ND	NA	NA	**4.2**	NA
gamma-Chlordane	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.0034 J	0.0024 NJ	ND	NA	ND	NA	ND	NA	NA	**--**	NA
Arochlor 1254	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.15 J	0.19 J	ND	NA	ND	NA	ND	NA	NA	**1**	NA

TABLE 1

SUMMARY OF SOIL ANALYTICAL DATA - NOVEMBER 2006

275 Franklin Street & 432 Pearl Street Sites
BCP Sites No. C915208 & C915237
Buffalo, New York

Parameter [1]	Sample Event																					Restricted Residential SCOs [3]	Protection of Groundwater SCOs
	Historical Data							Brownfield Cleanup Program Remedial Investigation Data															
	275-277 Franklin St. (September 2004)		279 Franklin St. (January 2006)		432 Pearl St. (November 2006)			279 Franklin St. (November 2006)			275-277 Franklin St. (November 2006)					432 Pearl St. (November 2006)						267 Franklin St. (November 2006)		
	B-3 (10-12')	B-5 (10-12')	SB-1	SB-2	SB-1	SB-2	SB-3	PZ-1 (1-4')	PZ-2 (6-8')	PZ-3 (2-4')	PZ-4 (6-8')	PZ-5 (8-9')	PZ-6 (6-8')	MW-1 (6-10')	BD [2] (6-10')	PZ-8 (1-4')	PZ-9 (2-4')	PZ-9 (4-8')	PZ-10 (4-8')	SB-4 (4-8')	MW-2 (2-6')	MW-3 (6-8')		
TAL Metals (mg/kg)																								
Aluminum	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	2190 J	2770 J	5930 *	NA	2310 *	NA	1500 *	NA	NA	--	NA
Antimony	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.92 B	ND	ND	NA	ND	NA	ND	NA	NA	--	NA
Arsenic	NA	NA	3.5	5.1	5.3	9	4.3	NA	NA	NA	NA	NA	NA	1.6 J	1.9 J	2.6 J	NA	0.44 J	NA	0.69 J	NA	NA	**16**	NA
Barium	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	15.7 B	21.6	111	NA	13.2 B	NA	12.5 B	NA	NA	**400**	NA
Beryllium	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.09 B	0.1 B	ND	NA	ND	NA	ND	NA	NA	**72**	NA
Cadmium	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.14 B	0.22 B	0.16 B	NA	ND	NA	0.1 B	NA	NA	**4.3**	NA
Calcium	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	41200 J	53300 J	28600 *	NA	59200 *	NA	38300 *	NA	NA	--	NA
Chromium	NA	NA	6.3	11.1	6.6	11.4	8.2	NA	NA	NA	NA	NA	NA	3.9	7.1	7.6	NA	3.3	NA	2.5	NA	NA	**180**	NA
Cobalt	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	1.8 B	2.3 B	2.9 B	NA	1.3 B	NA	1.3 B	NA	NA	--	NA
Copper	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	5.8	12.4	16.4	NA	4.2	NA	4.8	NA	NA	**270**	NA
Iron	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	6370	8470	8910 *	NA	5680 *	NA	4010 *	NA	NA	--	NA
Lead	NA	NA	87.8	358	103	**507**	78.1	NA	NA	NA	NA	NA	NA	6.3 J	9.4 J	72.3 J	NA	3.8 J	NA	8.3 J	NA	NA	**400**	NA
Magnesium	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	18800	24400	6960 *	NA	24300 *	NA	16900 *	NA	NA	--	NA
Manganese	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	208 J	266 J	428 J	NA	157 J	NA	137 J	NA	NA	**2000**	NA
Mercury	NA	NA	0.18	0.33	0.089	**1.1**	0.11	NA	NA	NA	NA	NA	NA	ND	ND	0.426	NA	ND	NA	ND	NA	NA	**0.81**	NA
Nickel	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	3.7 B	4.7	7.0	NA	3.2 B	NA	2.6 B	NA	NA	**310**	NA
Potassium	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	547	707	886	NA	615	NA	382 B	NA	NA	--	NA
Selenium	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	0.69 B	NA	ND	NA	ND	NA	NA	**180**	NA
Silver	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	0.15 B	NA	ND	NA	ND	NA	NA	**180**	NA
Sodium	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	153 B	224 B	1080	NA	124 B	NA	113 B	NA	NA	--	NA
Thallium	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	ND	NA	ND	NA	NA	--	NA
Vanadium	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	9.3	12.2	12.9	NA	8.1	NA	5.4	NA	NA	--	NA
Zinc	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	52.3 J	64.9 J	88.8 *	NA	42.9 *	NA	43.6 *	NA	NA	**10000**	NA
Wet Chemistry Analysis (units as indicated)																								
Leachable pH (S.U.)	NA	NA	NA	NA	NA	NA	NA	7.84	8.1	8.31	8.03	8.06	8.19	8.38	7.85	9.18	9.28	8.12	8.62	8.85	NA	NA	--	NA

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Blind duplicate collected from MW-1.
3. Values per NYSDEC Part 375 Soil Cleanup Objectives (December 2006).
4. Sample results were reported by the laboratory in ug/kg and converted to mg/kg for comparison to SCOs.

Definitions:

ND = Parameter not detected above laboratory detection limit.
NA = Sample not analyzed for parameter.
J = Estimated value; result is less than the sample quantitation limit but greater than zero.
b = Analyte was detected in the associated blank as well as in the sample. Value is above the action level for consideration as being external contamination.
B = Indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit.
* = Indicates the spike or duplicate analysis is not within the quality control limits.
D = All compounds were identified in an analyisis at the secondary dilution factor.
N = Indicates spike sample recovery is not within the quality control limits.
NA = not applicable
E = Indicates value estimated or not reported due to the presence of interferences.
P = Detected concentrations between the two GC columns is greater than 25%; lower value is reported and flagged (for CLP methodology only).

BOLD = Sample Result exceeds Restricted Residential SCO
BOLD = Sample Result exceeds Protection of Groundwater SCO

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 2

SUMMARY OF SOIL ANALYTICAL DATA - APRIL 2008

275 Franklin Street & 432 Pearl Street Sites
BCP Sites No. C915208 & C915237
Buffalo, New York

Parameter [1]	Sample Locations						Restricted Residential SCOs [2]	Protection of Groundwater SCOs
	275-277 Franklin Street							
	MW -4 (4-6')	MW - 4 (8-10')	MW - 4 (10-12')	MW - 6 (4-6')	MW - 6 (8-10')	MW - 6 (10-12')		
TCL Volatile Organic Compounds (VOCs) - mg/kg [3]								
Acetone	ND	0.006 J	ND	ND	ND	ND	**100**	**0.05**
1,2-Dichlorobenzene	ND	0.006	0.002 J	ND	0.11 J	ND	**100**	**1.1**
1,4-Dichlorobenzene	ND	ND	ND	ND	0.012 J	ND	**13**	**1.8**
cis-1,2-Dichloroethene (cis-1,2-DCE)	0.003 J	0.006	0.022	0.002 J	0.033 J	ND	**100**	**0.25**
Isopropylbenzene	ND	ND	ND	ND	0.008 J	ND	--	--
Methylene chloride	0.009	0.012	0.006	0.006	0.006 J	ND	**100**	**0.05**
1,2,4-Trichlorobenzene	ND	ND	ND	ND	0.003 J	ND	--	**3.6**
Trichloroethene (TCE)	ND	ND	ND	ND	0.063 J	ND	**21**	**0.47**
Tetrachloroethene (PCE)	**1.6 D**	**20 D**	**4.1 D**	0.87 D	**2,200 DJ**	**350**	**19**	**1.3**
Total VOCs	*1.6*	*20.0*	*4.1*	*0.9*	*2200*	*350*	--	--

Notes:
1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per NYSDEC Part 375 Restricted-Residential Soil Cleanup Objectives (December 2006).
3. Sample results were reported by the laboratory in ug/kg and converted to mg/kg for comparison to SCOs.

Definitions:
ND = Parameter not detected above laboratory detection limit.
"--" = No SCO available.
D = All compounds were identified in an analyisis at the secondary dilution factor.
J = Estimated value; result is less than the sample quantitation limit but greater than zero.

BOLD	= Sample Result exceeds Restricted Residential SCO
BOLD	= Sample Result exceeds Protection of Groundwater SCO

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 3

SUMMARY OF MONITORING WELL / PIEZOMETER CONSTRUCTION DETAILS [1,2]

Remedial Investigation Report
Buffalo Development Corporation Site
Buffalo, New York

Location [3]	Groundwater Unit	Installation Date	Well Diameter (inches)	Well Construction Material (screen/riser)	TOR Elevation (fmsl)	Ground Elevation (fmsl)	Stick-up (fbgs)	Construction Details (approx.)				Total Depth March 2010 (fbTOR)
								Bentonite Seal (fbgs)	Sand Pack Interval (fbgs)	Screened Interval (fbgs)	Sump Interval (fbgs)	
MONITORING WELLS:												
MW-1	intermediate	11/27/06	2.0	PVC / PVC	499.22	499.51	-0.29	1.00 - 26.67	26.67 - 38.67	28.67 - 38.67	none	38.67
MW-2	intermediate	11/28/06	2.0	PVC / PVC	499.81	500.08	-0.27	1.00 - 26.37	26.37 - 38.37	28.37 - 38.37	none	38.37
MW-3	intermediate	11/29/06	2.0	PVC / PVC	498.13	498.38	-0.25	1.00 - 25.92	25.92 - 37.92	27.92 - 37.92	none	37.92
MW-4	deep	04/22/08	2.0	PVC / PVC	499.56	499.93	-0.37	1.00 - 30.27	30.27 - 47.27	32.27 - 47.27	47.27 - 50.27	50.27
MW-5	shallow	04/22/08	2.0	PVC / PVC	499.49	499.95	-0.46	1.00 - 8.17	8.17 - 20.17	10.17 - 20.17	none	20.17
MW-6	deep	04/24/08	2.0	PVC / PVC	498.72	499.03	-0.31	1.00 - 31.10	31.10 - 48.10	33.10 - 48.10	48.10 - 50.10	50.10
MW-7	deep	05/30/12	2.0	PVC / PVC	497.96	498.31	-0.35	26.28 - 31.28	31.28 - 48.28	33.28 - 48.28	48.28 - 50.28	50.28
PIEZOMETERS:												
PZ-1	shallow	11/14/06	1.0	PVC / PVC	500.04	500.10	-0.06	1.00 - 6.87	6.87 - 18.87	8.87 - 18.87	none	18.87
PZ-2	shallow	11/14/06	1.0	PVC / PVC	499.70	499.84	-0.14	1.00 - 3.52	3.52 - 15.52	5.52 - 15.52	none	15.52
PZ-3	shallow	11/14/06	1.0	PVC / PVC	499.32	499.44	-0.12	1.00 - 3.48	3.48 - 15.48	5.48 - 15.48	none	15.48
PZ-4	shallow	11/14/06	1.0	PVC / PVC	499.42	499.66	-0.24	1.00 - 3.47	3.47 - 15.47	5.47 - 15.47	none	15.47
PZ-5	shallow	11/14/06	1.0	PVC / PVC	498.65	498.92	-0.27	1.00 - 3.37	3.37 - 15.37	5.37 - 15.37	none	15.37
PZ-6	shallow	11/14/06	1.0	PVC / PVC	499.10	499.21	-0.11	1.00 - 3.42	3.42 - 15.42	5.42 - 15.42	none	15.42
PZ-7	shallow	11/15/06	1.0	PVC / PVC	500.95	501.13	-0.18	1.00 - 3.32	3.32 - 15.32	5.32 - 15.32	none	15.32
PZ-8	shallow	11/15/06	1.0	PVC / PVC	500.16	500.37	-0.21	1.00 - 3.17	3.17 - 15.17	5.17 - 15.17	none	15.17
PZ-9	shallow	11/15/06	1.0	PVC / PVC	498.79	499.01	-0.22	1.00 - 3.27	3.27 - 15.27	5.27 - 15.27	none	15.27
PZ-10	shallow	11/15/06	1.0	PVC / PVC	498.80	499.03	-0.23	1.00 - 2.37	2.37 - 14.37	4.37 - 14.37	none	14.37
PZ-11	shallow	12/27/06	1.0	PVC / PVC	498.02	498.18	-0.16	1.00 - 3.37	3.37 - 15.37	5.37 - 15.37	none	15.37
PZ-12	shallow	12/27/06	1.0	PVC / PVC	497.93	498.14	-0.21	1.00 - 3.37	3.37 - 15.37	5.37 - 15.37	none	15.37
PZ-13	shallow	12/27/06	1.0	PVC / PVC	498.05	498.47	-0.42	1.00 - 2.87	2.87 - 14.87	4.87 - 14.87	none	14.87
PZ-14	shallow	12/27/06	1.0	PVC / PVC	497.92	498.26	-0.34	1.00 - 2.72	2.72 - 14.72	4.72 - 14.72	none	14.72
OFF-SITE MONITORING WELLS (INSTALLED BY NYSDEC):												
MW-21S	shallow	05/13/09	2.0	PVC / PVC	497.36	497.88	-0.52	9.50 - 11.50	11.50 - 23.50	13.50 - 23.50	none	23.50
MW-21D	deep	05/12/09	2.0	PVC / PVC	497.58	497.90	-0.32	34.50 - 36.50	36.50 - 48.50	38.50 - 48.50	none	48.50
MW-22S	shallow	05/15/09	2.0	PVC / PVC	496.21	497.23	-1.02	3.00 - 5.00	5.00 - 17.70	7.70 - 17.70	none	17.70
MW-22D	deep	05/14/09	2.0	PVC / PVC	496.92	497.21	-0.29	33.50 - 36.00	36.00 - 48.00	38.00 - 48.00	none	48.00
MW-23S	shallow	05/19/09	2.0	PVC / PVC	496.91	497.46	-0.55	4.56 - 6.56	6.56 - 18.56	8.56 - 18.56	none	18.56
MW-23D	deep	05/19/09	2.0	PVC / PVC	497.18	497.52	-0.34	34.30 - 36.30	36.30 - 48.30	38.30 - 48.30	none	48.30
MW-24S	shallow	05/21/09	2.0	PVC / PVC	497.32	497.91	-0.59	4.63 - 6.63	6.63 - 18.63	8.63 - 18.63	none	18.63
MW-24D	deep	05/20/09	2.0	PVC / PVC	497.63	497.94	-0.31	33.53 - 35.53	35.53 - 47.53	37.53 - 47.53	none	47.53
MW-25S	shallow	09/27/12	2.0	PVC / PVC	496.21	496.46	-0.25	5.60 - 7.60	7.60 - 19.10	9.10 - 19.10	none	19.10
MW-26S	shallow	09/26/12	2.0	PVC / PVC	496.02	496.39	-0.37	4.80 - 6.80	6.80 - 18.80	8.80 - 18.80	none	18.80
MW-27S	shallow	09/27/12	2.0	PVC / PVC	496.24	497.10	-0.86	5.10 - 7.10	7.10 - 19.10	9.10 - 19.10	none	19.10

Notes:

1. Top of riser elevation based upon an assumed datum of 500.00 fmsl.
2. TOR = top of riser.
3. fmsl = feet above mean sea level.
4. fbgs = feet below ground surface.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 4

GROUNDWATER ELEVATION DATA SUMMARY

275 Franklin Street & 432 Pearl Street Sites
BCP Sites No. C915208 & C915237
Buffalo, New York

Monitoring Location	TOR Elevation (fmsl)	Remedial Investigation								Interim Remedial Measure															
		11/16/06		12/08/06		01/05/07		04/24/08		10/02/08		12/18/08		02/11/09		04/21/09		07/17/09		03/29/10		06/02/11		06/04/12	
		DTW	GWE	DTW	GWE	DTW	GWE	DTW	GWE	DTW	GWE	DTW	GWE	DTW	GWE	DTW	GWE	DTW	GWE	DTW	GWE	DTW	GWE	DTW	GWE
MONITORING WELLS:																									
MW-1	499.22	NM	NM	11.54	487.68	11.43	487.79	11.51	487.71	12.79	486.43	11.53	487.69	11.10	488.12	11.43	487.79	11.82	487.40	12.40	486.82	11.64	487.58	11.40	487.82
MW-2	499.81	NM	NM	12.31	487.50	12.19	487.62	12.21	487.60	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	12.05	487.76	12.06	487.75	12.05	487.76
MW-3	498.13	NM	NM	10.73	487.40	10.53	487.60	10.71	487.42	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	10.80	487.33	10.46	487.67	10.49	487.64
MW-4	499.12	NM	NM	NM	NM	NM	NM	12.00	487.12	12.26	486.86	12.15	486.97	12.30	486.82	11.94	487.18	12.03	487.09	11.80	487.32	11.56	487.56	11.89	487.23
MW-5	499.10	NM	NM	NM	NM	NM	NM	11.90	487.20	12.10	487.00	11.96	487.14	11.95	487.15	11.90	487.20	11.84	487.26	11.76	487.34	11.66	487.44	11.78	487.32
MW-6	498.63	NM	NM	NM	NM	NM	NM	11.52	487.11	11.39	487.24	11.51	487.12	12.30	486.33	11.36	487.27	11.26	487.37	11.10	487.53	10.88	487.75	11.07	487.56
MW-7	497.96	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	10.68	487.28
PIEZOMETERS:																									
PZ-1	500.04	12.12	487.92	NM	NM	12.09	487.95	12.09	487.95	12.27	487.77	12.10	487.94	12.13	487.91	12.06	487.98	(7)	(7)	12.00	488.04	11.98	488.06	destroyed	
PZ-2	499.70	11.81	487.89	NM	NM	11.85	487.85	11.87	487.83	12.09	487.61	11.90	487.80	12.00	487.70	11.86	487.84	(7)	(7)	11.90	487.80	11.88	487.82	11.72	487.98
PZ-3	499.32	11.53	487.79	NM	NM	11.54	487.78	11.54	487.78	11.73	487.59	11.61	487.71	11.60	487.72	11.56	487.76	11.39	487.93	11.49	487.83	11.37	487.95	11.47	487.85
PZ-4	499.42	11.65	487.77	NM	NM	11.68	487.74	11.62	487.80	11.88	487.54	11.67	487.75	11.80	487.62	11.65	487.77	(7)	(7)	11.60	487.82	11.51	487.91	11.64	487.78
PZ-5	498.65	11.08	487.57	NM	NM	11.05	487.60	11.02	487.63	11.27	487.38	11.12	487.53	11.15	487.50	11.05	487.60	(7)	(7)	11.00	487.65	11.87	486.78	10.95	487.70
PZ-6	499.10	11.30	487.80	NM	NM	11.33	487.77	11.28	487.82	11.55	487.55	11.43	487.67	(6)	(6)	11.31	487.79	11.11	487.99	11.30	487.80	10.78	488.32	11.26	487.84
PZ-7	500.95	12.39	488.56	NM	NM	12.55	488.40	12.42	488.53	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	12.50	488.45	12.26	488.69	12.32	488.63
PZ-8	500.16	11.89	488.27	NM	NM	12.02	488.14	11.98	488.18	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	11.90	488.26	11.74	488.42	11.97	488.19
PZ-9	498.79	10.82	487.97	NM	NM	10.95	487.84	11.02	487.77	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	11.00	487.79	10.80	487.99	11.03	487.76
PZ-10	498.80	10.74	488.06	NM	NM	10.83	487.97	10.91	487.89	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	10.55	488.25	10.31	488.49	10.77	488.03
PZ-11	498.02	NM	NM	NM	NM	10.55	487.47	10.68	487.34	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	10.50	487.52	10.41	487.61	10.49	487.53
PZ-12	497.93	NM	NM	NM	NM	10.57	487.36	10.65	487.28	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	10.50	487.43	10.47	487.46	10.54	487.39
PZ-13	498.05	NM	NM	NM	NM	10.53	487.52	10.65	487.40	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	10.55	487.50	10.53	487.52	10.66	487.39
PZ-14	497.92	NM	NM	NM	NM	10.75	487.17	10.61	487.31	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	10.50	487.42	10.40	487.52	10.52	487.40

Notes:

1. All wells/piezometers surveyed on 1/11/07 with site specific datum of 500 feet, with the exception of wells MW-4, 5, 6, and 7; these locations were surveyed following their installation.
2. DTW = depth to water, feet below top of riser (fbTOR)
3. GWE = groundwater elevation, feet above mean sea level (fmsl)
4. NM = no measurement; either this location was not installed at the time of measurement or was not scheduled to be sampled.
5. TOR = top of PVC riser, fmsl
6. Monitoring location was frozen within road box, no measurement was obtained.
7. No measurement obtained due to malfunctioning water level indicator.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 5

SUMMARY OF GROUNDWATER ANALYTICAL DATA - NOVEMBER 2006

275 Franklin Street & 432 Pearl Street Sites
BCP Sites No. C915208 & C915237
Buffalo, New York

Parameter [1]	Sample Location and Date																			GWQS/ GV [3]
	Historical Data		Brownfield Cleanup Program Remedial Investigation																	
	BMW-3	BMW-5	PZ-1	PZ-2	PZ-3	PZ-4	PZ-5	PZ-6	PZ-7	PZ-8	PZ-9	PZ-10	PZ-11	PZ-12	PZ-13	PZ-14	MW-1	MW-2	Blind Dup [2]	MW-3	
	Sep-04	Sep-04	11/20/06	11/16/06	11/16/06	11/16/06	11/20/06	11/16/06	11/16/06	11/16/06	11/16/06	11/16/06	01/05/07	01/05/07	01/05/07	01/05/07	12/08/06	12/08/06	12/08/06	12/08/06	
TCL Volatile Organic Compounds (VOCs) - ug/L																					
Acetone	ND	ND	1 J	1 J	1 J	2 J	ND	ND	2 J	3 J	2 J	2 J	ND	ND	ND	ND	ND	ND	ND	ND	**50**
Chloroform	ND	ND	ND	ND	ND	ND	3 J	ND	ND	ND	ND	1 J	ND	ND	ND	ND	ND	ND	ND	ND	**7**
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10 J	ND	**--**
Cyclohexane	ND	ND	ND	ND	ND	ND	ND	ND	1 J	1 J	1 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	**--**
cis-1,2-Dichloroethene	ND	ND	ND	ND	1 J	ND	**42**	**26**	ND	ND	ND	ND	**94**	ND	1 J	**6 J**	2 J	ND	ND	ND	**5**
Methylcyclohexane	ND	ND	ND	ND	1 J	ND	1 J	1 J	2 J	1 J	2 J	1 J	ND	ND	ND	ND	ND	ND	ND	ND	**--**
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**10 J**	ND	ND	ND	**64 DJ**	ND	ND	ND	**5**
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	1 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1**
Trichloroethene (TCE)	ND	ND	ND	ND	ND	3 J	**11**	5 J	ND	ND	ND	ND	**17 J**	ND	ND	**17**	**21**	ND	ND	ND	**5**
Tetrachloroethene (PCE)	**137,000**	**70,400**	**14**	**90**	**300**	**530**	**9700**	**1000**	4 J	4 J	**10**	2 J	**18000 J**	**7200 J**	**180 J**	**3200 J**	**4100**	5 J	**180 J**	**6 J**	**5**
Toluene	ND	ND	ND	ND	1 J	1 J	ND	1 J	1 J	1 J	2 J	1 J	ND	ND	ND	ND	ND	ND	ND	ND	**5**
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1 J	ND	ND	ND	ND	**3**
Total VOCs	*137000*	*70400*	*15*	*91*	*304*	*536*	*9758*	*1033*	*10*	*10*	*17*	*7*	*18121*	*7200*	*181*	*3224*	*4187*	*5*	*190*	*6*	
TCL SVOCs - (ug/L)																					
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	10 UJ	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	**0.8 J**	NA	**0.002**
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	10 UJ	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	**0.6 J**	**1 J**	NA	**ND**
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	10 UJ	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	**2 J**	NA	**0.002**
Benzo(g,h,i)perylene	NA	NA	NA	NA	NA	NA	10 UJ	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	1 J	NA	**--**
Caprolactam	NA	NA	NA	NA	NA	NA	10 UJ	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	1000 J	940 J	NA	**--**
Chrysene	NA	NA	NA	NA	NA	NA	10 UJ	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	**1 J**	**2 J**	NA	**0.002**
Di-n-butyl phthalate	NA	NA	NA	NA	NA	NA	10 UJ	0.5 J	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	**50**
2,4-Dinitrophenol	NA	NA	NA	NA	NA	NA	40 UJ	40 UJ	NA	NA	NA	NA	NA	NA	NA	NA	40 J	40 J	40 J	NA	**10**
Fluoranthene	NA	NA	NA	NA	NA	NA	10 UJ	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	2 J	3 J	NA	**50**
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	NA	NA	10 UJ	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	**0.9 J**	NA	**0.002**
Phenanthrene	NA	NA	NA	NA	NA	NA	10 UJ	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	1 J	2 J	NA	**50**
Pyrene	NA	NA	NA	NA	NA	NA	10 UJ	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	2 J	2 J	NA	**50**
Pesticides (ug/L)																					
alpha-BHC	NA	NA	NA	NA	NA	NA	ND	0.05 UJ	NA	NA	NA	NA	NA	NA	NA	NA	ND	0.014 J	0.011 J	NA	**--**
Endosulfan Sulfate	NA	NA	NA	NA	NA	NA	ND	0.1 UJ	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	0.021 J	NA	**--**
4,4'-DDT	NA	NA	NA	NA	NA	NA	ND	0.1 UJ	NA	NA	NA	NA	NA	NA	NA	NA	0.094 J	ND	0.023 J	NA	**0.2**
PCBs (ug/L)																					
Aroclor 1260	NA	NA	NA	NA	NA	NA	ND	1 UJ	NA	NA	NA	NA	NA	NA	NA	NA	0.094 J	0.1 J	ND	NA	**--**
Inorganic Compounds (ug/L)																					
Aluminum	NA	NA	NA	NA	NA	NA	31300	13900	NA	NA	NA	NA	NA	NA	NA	NA	1040	1450	1310	NA	**--**
Arsenic	NA	NA	NA	NA	NA	NA	**42.4**	17.3	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	**25**
Barium	NA	NA	NA	NA	NA	NA	1000	288	NA	NA	NA	NA	NA	NA	NA	NA	80.2 B	80.3 B	78.3 B	NA	**1000**
Beryllium	NA	NA	NA	NA	NA	NA	ND	1.4 B	NA	NA	NA	NA	NA	NA	NA	NA	0.18 B	0.47 B	0.45 B	NA	**--**
Cadmium	NA	NA	NA	NA	NA	NA	4.1 B	1.7 B	NA	NA	NA	NA	NA	NA	NA	NA	1.2 B	ND	1 B	NA	**5**
Calcium	NA	NA	NA	NA	NA	NA	671000 J	366000	NA	NA	NA	NA	NA	NA	NA	NA	140000	132000	132000	NA	**--**
Chromium	NA	NA	NA	NA	NA	NA	**67.4**	28.1	NA	NA	NA	NA	NA	NA	NA	NA	1.6 B	2.1 B	2.3 B	NA	**50**

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 5

SUMMARY OF GROUNDWATER ANALYTICAL DATA - NOVEMBER 2006

275 Franklin Street & 432 Pearl Street Sites
BCP Sites No. C915208 & C915237
Buffalo, New York

Parameter [1]	Sample Location and Date																			GWQS/ GV [3]
	Historical Data		Brownfield Cleanup Program Remedial Investigation																	
	BMW-3	BMW-5	PZ-1	PZ-2	PZ-3	PZ-4	PZ-5	PZ-6	PZ-7	PZ-8	PZ-9	PZ-10	PZ-11	PZ-12	PZ-13	PZ-14	MW-1	MW-2	Blind Dup [2]	MW-3	
	Sep-04	Sep-04	11/20/06	11/16/06	11/16/06	11/16/06	11/20/06	11/16/06	11/16/06	11/16/06	11/16/06	11/16/06	01/05/07	01/05/07	01/05/07	01/05/07	12/08/06	12/08/06	12/08/06	12/08/06	
Cobalt	NA	NA	NA	NA	NA	NA	70.2	34.7 B	NA	NA	NA	NA	NA	NA	NA	NA	2.2 B	3 B	2.9 B	NA	--
Copper	NA	NA	NA	NA	NA	NA	**225**	75.8	NA	NA	NA	NA	NA	NA	NA	NA	3.6 B	3.3 B	3.9 B	NA	**200**
Iron	NA	NA	NA	NA	NA	NA	**97700**	**33500 J**	NA	NA	NA	NA	NA	NA	NA	NA	**1630 J**	**2900 J**	**2820 J**	NA	**300**
Iron- Soluble	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	130	**541**	ND	NA	**300**
Lead	NA	NA	NA	NA	NA	NA	**156**	**223**	NA	NA	NA	NA	NA	NA	NA	NA	15.3	4 B	4.6 B	NA	**25**
Magnesium	NA	NA	NA	NA	NA	NA	316000	159000	NA	NA	NA	NA	NA	NA	NA	NA	59600	62000	60500	NA	--
Manganese	NA	NA	NA	NA	NA	NA	**3370**	**1680**	NA	NA	NA	NA	NA	NA	NA	NA	107	**392**	**369**	NA	**300**
Manganese- Soluble	NA	NA	NA	NA	NA	NA	42.9	24.3	NA	NA	NA	NA	NA	NA	NA	NA	59.2	263	ND	NA	**300**
Mercury	NA	NA	NA	NA	NA	NA	0.353 J	0.097 B	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	**0.7**
Nickel	NA	NA	NA	NA	NA	NA	87.5	33.8 B	NA	NA	NA	NA	NA	NA	NA	NA	3.5 B	3.2 B	4.1 B	NA	**100**
Potassium	NA	NA	NA	NA	NA	NA	23600	15300	NA	NA	NA	NA	NA	NA	NA	NA	6240	8310	8210	NA	--
Sodium	NA	NA	NA	NA	NA	NA	**582000**	**461000**	NA	NA	NA	NA	NA	NA	NA	NA	**188000**	**238000**	**248000**	NA	**20000**
Thallium	NA	NA	NA	NA	NA	NA	8.5 B	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	--
Vanadium	NA	NA	NA	NA	NA	NA	80.9	32 B	NA	NA	NA	NA	NA	NA	NA	NA	2.9 B	2.9 B	2.7 B	NA	--
Zinc	NA	NA	NA	NA	NA	NA	999	395	NA	NA	NA	NA	NA	NA	NA	NA	26.2 B	30.3 B	30.9 B	NA	--
Water Quality Parameters (mg/L)																					
Chemical Oxygen Demand	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	20.6	NA	NA	--
Nitrate, mg/L-N	NA	NA	NA	NA	NA	NA	7.6 J	3.4	NA	NA	NA	NA	NA	NA	NA	NA	1.8	0.77	NA	NA	**10**
Sulfate	NA	NA	NA	NA	NA	NA	125	114 J	NA	NA	NA	NA	NA	NA	NA	NA	113 J	114 J	NA	NA	**250**
Field Measurements (units as indicated)																					
pH (units)	NA	NA	7.08	7.26	7.23	7.54	7.22	7.75	7.19	7.42	7.37	7.61	NA	NA	NA	NA	7.09	7.12	7.12	7.39	**6.5 - 8.5**
Temperature (^{o}C)	NA	NA	14.0	16.3	16.3	16.3	10.9	16.0	17.0	17.1	17.0	17.1	NA	NA	NA	NA	10.5	10.4	10.4	9.8	--
Specific Conductance (uS)	NA	NA	3496	4646	3590	3782	3722	3679	4913	3242	2944	4368	NA	NA	NA	NA	1903	1968	1968	1834	--
Turbidity	NA	NA	>1000	>1000	>1000	>1000	>1000	>1000	>1000	>1000	>1000	>1000	NA	NA	NA	NA	>1000	>1000	>1000	>1000	--
ORP (mV)	NA	NA	20	78	527	49	111	32	529	19	-52	-89	NA	NA	NA	NA	0	0	0	13	--
DO (ppm)	NA	NA	6.69	7.27	3.77	5.92	5.42	6.17	6.6	7.86	4.38	4.8	NA	NA	NA	NA	3.02	3.58	3.58	3.76	--

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Blind duplicate collected from MW-2.
3. Regulatory limits are NYSDEC Class "GA" Groundwater Quality Standards (GWQS) as published in NYSDEC Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1998).

Definitions:

ND or U = Parameter not detected above laboratory detection limit.
NA = Parameter not analyzed.
"--" = No standard available.
J = Indicates an estimated value.
B = Value is between the IDL and the CRDL.
D = Compound identified in an analysis at the secondary dilution factor.
* = Indicates analysis is not within quality control limits.
** = Indicates guidance value
N = Spike sample recovery is not within quality control limits.
E = Indicates value estimated or not reported due to the presence of interferences.

BOLD = Sample result exceeds Class GA Groundwater Standard/Guidance Value.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 6

SUMMARY OF GROUNDWATER ANALYTICAL DATA - APRIL 2008

275 Franklin Street & 432 Pearl Street Sites
BCP Sites No. C915208 & C915237
Buffalo, New York

Parameter [1]	Brownfield Cleanup Program Remedial Investigation																GWQS/ GV [3]
	PZ-1	PZ-2	PZ-3	PZ-4	PZ-5	PZ-6	PZ-11	PZ-12	PZ-13	PZ-14	MW-1	MW-3	MW-4	MW-5	MW-6	Blind Dup [2]	
	04/24/08	04/24/08	04/24/08	04/24/08	04/24/08	04/24/08	04/24/08	04/24/08	04/24/08	04/24/08	04/24/08	04/24/08	04/24/08	04/24/08	04/24/08	04/24/08	
TCL Volatile Organic Compounds (VOCs) - ug/L																	
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.2 NJ	ND	ND	ND	
Cyclohexane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.6 J	ND	--
cis-1,2-Dichloroethene	ND	ND	**6**	**46**	**160**	**11**	**170**	**230**	**78**	**28**	ND	ND	1.2	**16**	ND	ND	**5**
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.2	ND	ND	
Methylcyclohexane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.78 J	ND	ND	3.6 J	ND	--
Trichloroethene (TCE)	ND	ND	ND	**19**	**20**	2.5 J	**34**	**23**	**25**	**20**	ND	ND	0.6 J	**5.1**	**8.8 J**	ND	**5**
Tetrachloroethene (PCE)	**40**	**120**	**400**	**1900 D**	**3100 DJ**	**390**	**22000 DJ**	**23000 DJ**	**1900 DJ**	**5300 DJ**	**26**	0.55 J	**300 D**	**19000 DJ**	**9400 DJ**	**21 J**	**5**
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.55 J	ND	ND	ND	ND	**5**
Total VOCs	*40*	*120*	*406*	*1965*	*3280*	*404*	*22204*	*23253*	*2003*	*5348*	*26*	*2*	*305*	*19022*	*9415*	*21*	--
Microbial Parameters (cells/mL)																	
Dehalococcoides	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.57	<0.5	NA	NA	--
Vinyl Chloride Reductase	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.22	<0.5	NA	NA	--
Water Quality Parameters (mg/L)																	
Iron- Soluble	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	--
Manganese- Soluble	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.081	0.1	NA	NA	**10**
Nitrate, mg/L-N	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.7	5.7	NA	NA	
Sulfate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	118	87.4	NA	NA	
Ethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	
Ethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	
Methane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	0.0022 J	NA	NA	**250**
Field Measurements (units as indicated)																	
pH (units)	7.06	7.38	7.60	7.29	7.22	7.45	7.18	7.21	7.28	7.40	7.73	7.35	7.30	7.33	7.57	NA	**6.5 - 8.5**
Temperature (^{o}C)	15.9	14.0	16.8	13.4	12.1	13.1	12.00	1.00	12.80	11.60	19.4	16.6	18.0	13.8	15.2	NA	--
Specific Conductance (uS)	4854	4143	4416	6293	3710	3998	7975	13	2487	1985	1948	1821	1879	3070	1861	NA	--
Turbidity	>1000	>1000	>1000	>1000	>1000	>1000	>1000	>1000	>1000	>1000	>1000	>1000	>1000	>1000	>1000	NA	--
ORP (mV)	151	163	133	158	122	137	187	201	131	124	193	99	114	-51	-138	NA	--
DO (ppm)	6.35	5.81	4.56	7.63	4.4	4.95	5.17	3.34	5.70	5.61	2.13	4.09	3.27	4.92	2.18	NA	--

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Blind duplicate collected from MW-1.
3. Regulatory limits are NYSDEC Class “GA” Groundwater Quality Standards (GWQS) as published in NYSDEC Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1998).

Definitions:

ND = Parameter not detected above laboratory detection limit.
NA = Parameter not analyzed.
"--" = No standard available.
J = Indicates an estimated value.
D = Compound identified in an analysis at the secondary dilution factor.
NJ = Indicates the presence of an analyte that has been "tentatively identifed" and the associated numerical value represents its approximate concentration.

BOLD = Sample result exceeds Class GA Groundwater Standard/Guidance Value.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 7

SUMMARY OF SOIL VAPOR ANALYTICAL DATA - NOVEMBER 2006

275 Franklin Street & 432 Pearl Street Sites
BCP Sites No. C915208 & C915237
Buffalo, New York

Parameter [1]	Sampling Event				
	432 Pearl St. (1/20/06)	279 Franklin St. (1/20/06)	432 Pearl St. (11/20/06)		
	AIR	AIR	SGV-1	SGV-2	SGV-3
TCL Volatile Organic Compounds (VOCs) - ug/m3					
1,3-Butadiene	5.8	ND	8.4	9.3	13
Acetone	ND	ND	24	31	29
Dichlorodifluoromethane	3.3	ND	ND	ND	ND
Carbon Disulfide	12	ND	18	5.9	26
n-Hexane	70	190	230	210	170
Methyl Ethyl Ketone	ND	ND	ND	5.3	4.1
Cyclohexane	45	120	210	100	150
2,2,4-Trimethylpentane	6.1	ND	6.1	5.6	15
Benzene	9.9	ND	6.4	13	21
n-Heptane	45	90	140	90	110
Toluene	27	53	5.3	18	29
Tetrachloroethene (PCE)	140	14000	ND	21	21
Trichloroethene (TCE)	ND	70	ND	ND	ND
Trichlorofluoromethane	1.8	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	71	ND	ND	ND
Ethylbenzene	5.2	ND	ND	2.6	ND
Xylene (m,p)	22	ND	4.8	11	21
Xylene (o)	6.5	ND	1.8	4.8	13
Xylene (total)	27	ND	6.5	16	34
4-Ethyltoluene	4.9	ND	ND	2.0	3.7
1,3,5-Trimethylbenzene	2.3	ND	ND	ND	3.4
1,4-Dichlorobenzene	4.1	ND	ND	ND	ND
1,2,4-Trimethylbenzene	6.4	ND	ND	ND	3.7
Styrene	9.8	ND	1.7	ND	ND

Notes:

1. Only those compounds detected above the laboratory reporting limit are presented in this table.

Definitions:

ND= Not detected above laboratory detection limits.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 8

SUMMARY OF SVE SYSTEM VOC MASS REMOVAL

Remedial Investigation Report
Buffalo Development Corporation Site
Buffalo, New York

Date	Sampling Interval (days)	Time	Influent (Untreated) PID Reading (ppm)	Low-end Corrected Influent Concentration[1,2] (mg/m^3)	High-end Corrected Influent Concentration[1,2] (mg/m^3)	Vacuum (in of H_2O)	Ambient Pressure		Air Flow Rate (SCFM)	Volume of Air Processed		Low-end Rate of VOC Removal		High-end Rate of VOC Removal		Low-end VOCs Removed Between Sampling		High-end VOCs Removed Between Sampling		Low-end Total VOC Removal to Date		High-end Total VOC Removal to Date	
							(in Hg)	(Pa)		(CF/day)	(m^3/day)	(kg/day)	(lb/day)	(kg/day)	(lb/day)	(kg)	(lb)	(kg)	(lb)	(kg)	(lb)	(kg)	(lb)
12/10/08		12:10 PM	293	1703.2	10674.0	3.1	30.08	101863	342	493158	1.40E+04	23.8	52.4	149.1	328.7								
12/11/08	1	10:00 AM	111	645.2	4043.7	3.1	30.09	101896	342	493075	1.40E+04	9.0	19.9	56.5	124.5	16.4	36.2	102.8	226.6	16.4	36.2	102.8	226.6
12/12/08	1	12:55 PM	78	453.4	2841.5	3.0	29.84	101050	338	487049	1.38E+04	6.3	13.8	39.2	86.4	7.6	16.8	47.8	105.5	24.0	53.0	150.6	332.0
12/18/08	6	11:20 AM	34.8	202.3	1267.8	3.2	30.34	102743	346	498932	1.41E+04	2.9	6.3	17.9	39.5	27.3	60.3	171.3	377.7	51.4	113.3	321.9	709.8
12/26/08	8	2:00 PM	21.7	126.1	790.5	3.2	30.26	102472	347	499599	1.41E+04	1.8	3.9	11.2	24.7	18.6	40.9	116.4	256.6	69.9	154.2	438.3	966.4
1/6/09	9	1:00 PM	13.9	80.8	506.4	3.2	29.92	101321	349	502466	1.42E+04	1.1	2.5	7.2	15.9	13.2	29.1	82.7	182.5	83.1	183.3	521.0	1148.8
1/13/09	6	2:00 PM	14	81.4	510.0	3.1	29.65	100406	345	496765	1.41E+04	1.1	2.5	7.2	15.8	6.9	15.2	43.1	95.1	90.0	198.5	564.2	1244.0
1/21/09	2	4:00 PM	14.9	86.6	542.8	3.2	29.91	101287	349	502551	1.42E+04	1.2	2.7	7.7	17.0	2.4	5.2	14.9	32.9	92.4	203.7	579.1	1276.8
1/27/09	1	9:30 AM	10.5	61.0	382.5	3.0	30.51	103319	334	481607	1.36E+04	0.8	1.8	5.2	11.5	1.0	2.3	6.5	14.3	93.4	206.0	585.5	1291.1
3/11/09		2:15 PM	28.1	163.3	1023.7	3.2	29.99	101558	349	501872	1.42E+04	2.3	5.1	14.5	32.1	0.0	0.0	0.0	0.0	93.4	206.0	585.5	1291.1
3/16/09	5	12:55 PM	14.1	82.0	513.7	3.2	30.24	102404	347	499767	1.42E+04	1.2	2.6	7.3	16.0	8.7	19.2	54.5	120.3	102.1	225.2	640.1	1411.3
3/17/09	1	3:45 PM	19.6	113.9	714.0	3.2	30.16	102133	348	500437	1.42E+04	1.6	3.6	10.1	22.3	1.4	3.1	8.7	19.2	103.5	228.3	648.8	1430.5
3/24/09	7	11:30 AM	15.1	87.8	550.1	3.2	30.53	103386	345	497358	1.41E+04	1.2	2.7	7.7	17.1	10.0	22.0	62.5	137.9	113.5	250.3	711.3	1568.4
3/31/09	7	12:45 PM	13.8	80.2	502.7	3.2	30.13	102032	348	500690	1.42E+04	1.1	2.5	7.1	15.7	8.3	18.3	52.1	114.8	121.8	268.6	763.3	1683.2
4/7/09	7	12:30 PM	11.4	66.3	415.3	3.1	29.48	99831	346	498214	1.41E+04	0.9	2.1	5.9	12.9	7.3	16.0	45.5	100.2	129.1	284.6	808.8	1783.4
4/15/09	8	11:20 AM	10.8	62.8	393.4	3.1	30.11	101964	342	492909	1.40E+04	0.9	1.9	5.5	12.1	7.2	16.0	45.4	100.1	136.3	300.5	854.2	1883.5
4/29/09	14	11:00 AM	10.2	59.3	371.6	3.2	30.57	103522	345	497028	1.41E+04	0.8	1.8	5.2	11.5	12.0	26.4	75.0	165.5	148.3	327.0	929.3	2049.0
5/15/09	16	1:10 PM	9.2	53.5	335.2	3.2	30.27	102506	347	499516	1.41E+04	0.8	1.7	4.7	10.5	12.7	28.1	79.8	175.9	161.0	355.0	1009.0	2224.9
5/19/09	4	11:45 AM	8.8	51.2	320.6	3.2	30.37	102845	346	498682	1.41E+04	0.7	1.6	4.5	10.0	3.0	6.5	18.5	40.9	164.0	361.5	1027.6	2265.8
5/26/09	7	12:45 PM	9.7	56.4	353.4	3.2	30.08	101863	348	501111	1.42E+04	0.8	1.8	5.0	11.1	5.3	11.7	33.4	73.6	169.3	373.3	1060.9	2339.4
6/8/09	13	2:00 PM	9.4	54.6	342.4	3.2	29.97	101490	349	502041	1.42E+04	0.8	1.7	4.9	10.7	10.2	22.6	64.2	141.6	179.5	395.9	1125.2	2481.0
6/29/09	21	9:15 AM	23.1	134.3	841.5	3.1	29.52	99966	346	497872	1.41E+04	1.9	4.2	11.9	26.2	28.0	61.8	175.7	387.4	207.6	457.7	1300.9	2868.4
7/15/09	11	8:00 AM	26.4	153.5	961.8	3.2	30.14	102066	348	500605	1.42E+04	2.2	4.8	13.6	30.1	22.4	49.3	140.2	309.2	230.0	507.0	1441.1	3177.6
7/20/09	3	1:30 PM	1.4	8.1	51.0	3.1	30.18	102201	342	492330	1.39E+04	0.1	0.3	0.7	1.6	3.4	7.6	21.5	47.4	233.4	514.6	1462.6	3225.1
7/23/09	1	3:30 PM	2.1	12.2	76.5	3.1	29.82	100982	344	495330	1.40E+04	0.2	0.4	1.1	2.4	0.1	0.3	0.9	2.0	233.5	514.9	1463.5	3227.1
8/4/09	7	12:45 PM	11.6	67.4	422.6	3.1	29.84	101050	344	495162	1.40E+04	0.9	2.1	5.9	13.1	3.9	8.6	24.5	54.0	237.4	523.5	1488.0	3281.1
8/6/09	2	12:35 PM	7.6	44.2	276.9	3.1	30.02	101659	343	493656	1.40E+04	0.6	1.4	3.9	8.5	1.6	3.4	9.8	21.6	239.0	527.0	1497.8	3302.7
8/13/09	7	12:15 PM	5.3	30.8	193.1	3.2	30.14	102066	348	500605	1.42E+04	0.4	1.0	2.7	6.0	3.7	8.1	23.1	51.0	242.7	535.1	1520.9	3353.7
8/17/09	4	11:45 AM	4.8	27.9	174.9	3.2	30.14	102066	348	500605	1.42E+04	0.4	0.9	2.5	5.5	1.7	3.7	10.4	23.0	244.4	538.8	1531.4	3376.7
8/25/09	8	2:40 PM	6.8	39.5	247.7	3.2	30.09	101896	348	501026	1.42E+04	0.6	1.2	3.5	7.7	3.8	8.4	24.0	52.9	248.2	547.2	1555.3	3429.5
9/10/09	16	7:45 AM	6.5	37.8	236.8	3.2	30.34	102743	346	498932	1.41E+04	0.5	1.2	3.3	7.4	8.8	19.3	54.9	121.0	256.9	566.5	1610.2	3550.5
9/17/09	7	7:35 AM	6.3	36.6	229.5	3.2	30.25	102438	347	499683	1.41E+04	0.5	1.1	3.2	7.2	3.7	8.1	23.1	50.9	260.6	574.7	1633.3	3601.4

Notes:
1. Corrected Influent Concentrations are based on the ratio of a contemporaneous PID reading and an analytical air sample collected on 12/18/08 and 7/20/09.
2. The Corrected Influent concentration is 5.81 (low end) and 36.4 (high end) times the influent PID reading.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 9

SUMMARY OF PRE- & POST-SVE SOIL ANALYTICAL DATA

275 Franklin Street Site
BCP Site No. C915208
Buffalo, New York

Parameter [1]	275-277 Franklin Street Sample Locations								Restricted Residential SCOs [2]	Unrestricted SCOs [2]
	April 2008 Supplemental RI Data				September 2009 Post-SVE Soil Data					
	MW - 4 (4-6')	MW - 4 (8-10')	MW - 6 (4-6')	MW - 6 (8-10')	MW - 4 (4-6')	MW - 4 (8-10')	MW - 6 (4-6')	MW - 6 (8-10')		
TCL Volatile Organic Compounds (VOCs) - mg/kg [3]										
Methylene chloride	0.009	0.012	0.006	0.006 J	0.0049 J	0.0051 J	0.0046 J	0.0058 J	**100**	**0.05**
Acetone	ND	0.006 J	ND	ND	0.018 J	0.0063 J	0.013 J	0.018 J	**100**	**0.05**
cis-1,2-Dichloroethene	0.003 J	0.006	0.002 J	0.033 J	ND	ND	ND	ND	**100**	**0.25**
Chlorobenzene	ND	ND	ND	ND	0.0024 J,B	0.0023 J,B	0.0021 J,B	0.0022 J,B	**100**	**1.1**
1,2-Dichlorobenzene	ND	0.006	ND	0.11 J	ND	ND	ND	ND	**100**	**1.1**
1,4-Dichlorobenzene	ND	ND	ND	0.012 J	ND	ND	ND	ND	**13**	**1.8**
1,2,4-Trichlorobenzene	ND	ND	ND	0.003 J	ND	ND	ND	ND	--	--
Isopropylbenzene	ND	ND	ND	0.008 J	ND	ND	ND	ND	--	--
Trichloroethene	ND	ND	ND	0.063 J	ND	ND	ND	ND	**21**	**0.47**
Tetrachloroethene	**1.6 D**	**20 DJ**	0.87 D	**2200 DJ**	0.0035 J	0.0022 J	ND	0.0076 J	**19**	**1.3**
Total VOCs	*1.6*	*20*	*0.88*	*2200*	*0*	*0*	*0*	*0*	--	--

Notes:
1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per NYSDEC Part 375 Restricted-Residential Soil Cleanup Objectives (December 2006).
3. Sample results were reported by the laboratory in ug/kg and converted to mg/kg for comparison to SCOs.

Definitions:
ND = Parameter not detected above laboratory detection limit.
"--" = No SCO available.
D = All compounds were identified in an analyisis at the secondary dilution factor.
J = Estimated value; result is less than the sample quantitation limit but greater than zero.
B = Analyte was detected in the associated method blank

BOLD = Sample Result exceeds unrestricted SCO
BOLD = Sample Result exceeds Restricted Commercial SCO

TABLE 10

SUMMARY OF HISTORICAL GROUNDWATER ANALYTICAL RESULTS

Remedial Investigation Report
275 Franklin Street & 432 Pearl Street Sites
BCP Sites No. C915208 & C915237

Monitoring Location & Sample Date	Parameter [1,2]																							
	TCL Volatile Organic Compounds (ug/L)							Microbial Parameters (cells/mL)				Water Quality Parameters (mg/L)								Field Measurements (units as indicated)					
	2-Butanone (MEK)	1,2-Dichlorobenzene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	*Total TCL cVOCs*	Dehalococcoides	TCE R-Dase	BAV1 VC R-Dase	Vinyl Chloride Reductase (VC R-Dase)	Total Organic Carbon (TOC)	Iron- Soluble	Manganese- Soluble	Nitrate, mg/L-N	Sulfate	Ethane	Ethene	Methane	pH (units)	Temperature (°C)	Specific Conductance (uS)	Turbidity	ORP (mV)	DO (ppm)
GWQS [3]	**50**	**3**	**5**	**5**	**5**	**5**	--	--	--	--	--		**300**	**300**	**10**	**250**	--	--	**250**	**6.5 - 8.5**	--	--	--	--	--
Shallow Overburden Wells																									
PZ-1 11/20/06	<10	<10	<10	<10	14	<10	14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.08	14.0	3496	>1000	20	6.69
04/24/08	<25	<5.0	<5.0	<5.0	40	<5.0	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.06	15.9	4854	>1000	151	6.35
08/18/08	HRC INJECTION																								
10/02/08	<5.0	<1.0	<1.0	<1.0	45	<1.0	46.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.25	12.7	6444	>1000	111	8.52
12/18/08	<5.0	<1.0	<1.0	<1.0	58	<1.0	58	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.37	6.5	6424	>1000	65	8.63
02/11/09	<5.0	<1.0	<1.0	<1.0	23	<1.0	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.46	12.0	7412	750	130	9.59
04/21/09	<5.0	<1.0	<1.0	<1.0	33	<1.0	33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.38	11.4	4987	85.3	97	8.87
07/20/09	<5.0	<1.0	<1.0	<1.0	9.5	<1.0	9.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.41	17.9	4828	38	36	5
03/30/10	<5.0	<1.0	<1.0	<1.0	0.75 J	<1.0	0.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.32	11.1	5662	455	0	5.31
06/03/11	<10	<1.0	<1.0	<1.0	0.66 J	<1.0	0.66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.33	12.9	5527	96.3	-3	5.22
06/05/12	DESTROYED																								
Total Reduction of cVOCs Detected [4]	**98.86%**																								
PZ-2 11/16/06	<10	<10	<10	<10	90	<10	90	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.26	16.3	4646	>1000	78	7.27
04/24/08	<20	<4.0	<4.0	<4.0	120	<4.0	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.38	14.0	4143	>1000	163	5.81
08/18/08	HRC INJECTION																								
10/02/08	8.3	<1.0	4.6	<1.0	230 D	5.7	248.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.73	15.7	6981	>1000	-10	2.39
12/18/08	<20	<4.0	3.5	<4.0	270 D	5.6	279.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.31	8.3	4977	>1000	-25	3.32
02/11/09	<5.0	<1.0	1.3 J	<1.0	83	4	88.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.28	11.9	4926	17.9	-56	3.08
04/21/09	<5.0	<1.0	2.3	<1.0	110 D	20	132.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.18	12.2	7537	6.32	-60	3.02
07/17/09	<5.0	<1.0	1.2	<1.0	77 D	12	90.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.10	16.3	9630	11.3	-199	2.34
03/29/10	<5.0	<1.0	<1.0	<1.0	60	3	63	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.08	10.5	5814	4.8	-48	3.04
06/02/11	<10	<1.0	3.8	<1.0	78	9.2	91	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.42	15.5	4820	10	48	4.2
06/05/12	<10	<1.0	5.7	<1.0	200 D	13	218.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.38	15.3	4951	16.2	336	5.47
Total Reduction of cVOCs Detected [4]	**21.64%**																								
PZ-3 11/16/06	<10	<10	1 J	<10	300	<10	303	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.23	16.3	3590	>1000	527	3.77
04/24/08	<25	<5.0	6	<5.0	400	<5.0	406	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.60	16.8	4416	>1000	133	4.56
08/18/08	HRC INJECTION																								
10/02/08	<5.0	<1.0	3.5	<1.0	370 D	1.7	375.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.34	14.0	4801	>1000	17	4.94
12/18/08	<20	<4.0	2.1 J	<4.0	250	<4.0	252.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.40	9.6	4244	>1000	93	5.29
02/11/09	<5.0	<1.0	<1.0	<1.0	140 D	1.2	141.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.45	12.0	4667	37	416	5.46
04/21/09	<5.0	<1.0	0.73 J	<1.0	150 D	1 J	151.73	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.35	10.8	4818	307	107	4.86
07/17/09	<5.0	<1.0	<1.0	<1.0	72 D	<1.0	72	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.31	16.1	5436	6.47	-59	5.22
03/29/10	<5.0	<1.0	<1.0	<1.0	17	<1.0	17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.16	10.4	4032	20.1	-51	4.18
06/02/11	<10	<1.0	<1.0	<1.0	120 D	<1.0	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.22	14.9	5885	8	-15	4.04
06/05/12	<10	<1.0	<1.0	<1.0	120	<1.0	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.50	14.7	4276	16.5	179	4.84
Total Reduction of cVOCs Detected [4]	**70.44%**																								

TABLE 10

SUMMARY OF HISTORICAL GROUNDWATER ANALYTICAL RESULTS

Remedial Investigation Report
275 Franklin Street & 432 Pearl Street Sites
BCP Sites No. C915208 & C915237

Monitoring Location & Sample Date		Parameter [1,2]																							
		TCL Volatile Organic Compounds (ug/L)							Microbial Parameters (cells/mL)				Water Quality Parameters (mg/L)								Field Measurements (units as indicated)					
		2-Butanone (MEK)	1,2-Dichlorobenzene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	*Total TCL cVOCs*	Dehalococcoides	TCE R-Dase	BAV1 VC R-Dase	Vinyl Chloride Reductase (VC R-Dase)	Total Organic Carbon (TOC)	Iron- Soluble	Manganese- Soluble	Nitrate, mg/L-N	Sulfate	Ethane	Ethene	Methane	pH (units)	Temperature (°C)	Specific Conductance (uS)	Turbidity	ORP (mV)	DO (ppm)
GWQS [3]		**50**	**3**	**5**	**5**	**5**	**5**	**--**	**--**	**--**	**--**	**--**		**300**	**300**	**10**	**250**	**--**	**--**	**250**	**6.5 - 8.5**	**--**	**--**	**--**	**--**	**--**
PZ-4	11/16/06	<10	<10	<10	<10	530	3 J	534	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.54	16.3	3782	>1000	49	5.92
	04/24/08	<25	<5.0	46	<5.0	1900 D	19	1965	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.29	13.4	6293	>1000	158	7.63
	08/18/08	HRC INJECTION																							
	10/02/08	<5.0	0.78 J	56	0.82 J	2800 D	30	2888.27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.40	15.7	5898	>1000	85	7.33
	12/18/08	<200	<40	99	<40	2800	42	2941	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.38	9.3	10502	>1000	147	8.97
	02/11/09	<5.0	<1.0	16	<1.0	540 D,H	9.4	565.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.61	10.7	7079	17.3	48	9.22
	04/21/09	<5.0	<1.0	6	<1.0	520 D	6.3	532.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.37	11.7	18510	206	99	9.58
	07/17/09	<5.0	<1.0	0.93 J	<1.0	180 D	1.6	182.53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.61	16.7	12	6.53	-46	6.69
	03/29/10	<50	<10	<10	<10	46 D	<10	46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.61	9.0	6934	12.9	0	9.37
	06/02/11	<10	<1.0	9.1	<1.0	390 D	8.1	407.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.49	13.5	9095	9	36	8.02
	06/05/12	<10	<1.0	15	<1.0	950 D	24	989	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.63	14.0	8812	16.2	289	7.71
	Total Reduction of cVOCs Detected [4]	**66.37%**																							
PZ-5	11/20/06	<10	<10	42	<10	9700	11	9755	NA	NA	NA	NA	NA	NA	NA	7.6 J	125	NA	NA	NA	7.22	10.9	3722	>1000	111	5.42
	04/24/08	<20	<4.0	160	<4.0	3100 DJ	20	3280	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.22	12.1	3710	>1000	122	4.4
	08/18/08	HRC INJECTION																							
	10/02/08	<5.0	<1.0	38	<1.0	3000 D	7.3	3046.67	25.2	0.308 J	0.905	<0.463	NA	ND	ND	5.2	117	0.0021	ND	0.01	7.33	16.4	3773	>1000	-37	4.51
	12/18/08	<200	<40	120	<40	5600 D	<40	5720	0.8	<.667	<.667	<.667	NA	ND	ND	5.7	120	0.0021	ND	0.014	7.42	11.0	4622	>1000	-10	5.07
	02/11/09	<5.0	<1.0	<1.0	<1.0	150 D	<1.0	150	1.4	<5.0	<5.0	<5.0	NA	<.05	0.00783	4.65	102	<.0015	<.0015	0.00329	7.48	11.2	2872	15	35	4.74
	04/21/09	<5.0	<1.0	54	0.4 J	760 D	8.7	823.1	0.8	<0.5	<0.5	9060	NA	<.05	<.003	6.4 D	110 D	<.0015	<.0015	<.001	7.41	12.6	3905	38.3	60	3.11
	07/17/09	<5.0	1.4	33	<1.0	6000 D	9.3	6042.3	2.8	<0.5	<0.5	<0.5	16.6	0.135	1.37	4.44 D	130 D	<.0015	<.0015	<.001	7.26	16.5	4255	43.5	28	2.95
	03/29/10	<5.0	<1.0	8	<1.0	1300 D	3.1	1311.1	2.5	<5.0	<5.0	<5.0	NA	<0.05	0.0064	8.97	114	<1.5	<1.5	<1.0	7.32	8.8	4341	4.5	0	4.32
	06/29/11	<10	<1.0	11	<1.0	3200 D	4.3	3215.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.26	16.6	4802	7.83	50	3.89
	06/05/12	<10	<1.0	<1.0	<1.0	1600	<1.0	1600	NA	NA	NA	NA	NA	NA	NA	4.7	135	0.87 J	NA	0.55 BJ	7.34	14.2	3469	13.4	57	4.73
	Total Reduction of cVOCs Detected [4]	**83.60%**																							
PZ-6	11/16/06	<10	<10	26	<10	1000	5 J	1033	NA	NA	NA	NA	NA	NA	NA	3.4	114 J	NA	NA	NA	7.75	16.0	3679	>1000	32	6.17
	04/24/08	<20	<4.0	11	<4.0	390	2.5 J	403.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.45	13.1	3998	>1000	137	4.95
	08/18/08	HRC INJECTION																							
	10/02/08	<5.0	<1.0	20	1.3	1400 D	8.7	1430	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.45	15.1	3851	>1000	88	4.99
	12/18/08	<10	<2.0	1.7	<2.0	92	<2.0	93.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.49	10.4	3600	>1000	100	5.28
	02/11/09	<5.0	<1.0	<1.0	<1.0	12	<1.0	12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.48	11.6	2560	140	72	4.49
	04/21/09	<5.0	<1.0	2.5	<1.0	200	2.1	204.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.36	11.4	4471	30.7	80	2.98
	07/17/09	<5.0	<1.0	0.9 J	<1.0	90	0.52 J	91.42	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.33	16.1	3894	21	28	3.52
	03/29/10	<5.0	<1.0	2	<1.0	590 D	1.2	593.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.26	10.0	4044	39	-64	4.58
	06/29/11	<10	<1.0	7	<1.0	1200 D	3.6	1210.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.26	16.0	3261	9.99	63	3.7
	06/05/12	<10	<1.0	<1.0	<1.0	390	<1.0	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.39	14.4	2719	22.7	146	4.31
	Total Reduction of cVOCs Detected [4]	**72.73%**																							

TABLE 10

SUMMARY OF HISTORICAL GROUNDWATER ANALYTICAL RESULTS

Remedial Investigation Report
275 Franklin Street & 432 Pearl Street Sites
BCP Sites No. C915208 & C915237

Monitoring Location & Sample Date		Parameter [1,2]																							
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		2-Butanone (MEK)	1,2-Dichlorobenzene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	*Total TCL cVOCs*	Dehalococcoides	TCE R-Dase	BAV1 VC R-Dase	Vinyl Chloride Reductase (VC R-Dase)	Total Organic Carbon (TOC)	Iron- Soluble	Manganese- Soluble	Nitrate, mg/L-N	Sulfate	Ethane	Ethene	Methane	pH (units)	Temperature (°C)	Specific Conductance (uS)	Turbidity	ORP (mV)	DO (ppm)
GWQS [3]		**50**	**3**	**5**	**5**	**5**	**5**	--	--	--	--	--		**300**	**300**	**10**	**250**	--	--	**250**	**6.5 - 8.5**	--	--	--	--	--
PZ-7	11/16/06	<10	<10	<10	<10	4 J	<10	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.19	12.0	4713	>100	29	6
	08/18/08	HRC INJECTION																								
	03/30/10	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.33	10.6	3915	243	8	8.51
	06/03/11	<5.0	<1.0	<1.0	<1.0	0.64 J	<1.0	0.64	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.35	14.2	5456	14.4	92	6.01
	06/05/12	<10	<1.0	<1.0	<1.0	2.1	<1.0	2.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.74	14.9	3145	28.9	520	8.08
	Total Reduction of cVOCs Detected [4]	70.00%																								
PZ-8	11/16/06	<10	<10	<10	<10	4 J	<10	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.42	17.1	3242	>100	119	7.86
	08/18/08	HRC INJECTION																								
	03/30/10	<5.0	<1.0	<1.0	<1.0	1.9	<1.0	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.78	11.3	3943	29	10	8.34
	06/02/11	<5.0	<1.0	<1.0	<1.0	1.9	<1.0	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.72	14.4	2283	11.7	76	6.23
	06/04/12	<10	<1.0	<1.0	<1.0	1.9	<1.0	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.00	14.5	1516	13.8	561	8.09
	Total Reduction of cVOCs Detected [4]	68.33%																								
PZ-9	11/16/06	<10	<10	<10	<10	10	<10	14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.37	170.0	2944	>100	-52	4.38
	08/18/08	HRC INJECTION																								
	03/30/10	<25	<5.0	<5.0	<5.0	9 D	<5.0	9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.46	9.8	7571	25	22	8.91
	06/03/11	<10	<5.0	<5.0	<5.0	6.8	<5.1	6.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.35	14.2	5456	14.4	92	6.01
	06/04/12	<10	<1.0	<1.0	<1.0	6.6	<1.0	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.73	13.4	6535	202	614	7.51
	Total Reduction of cVOCs Detected [4]	52.86%																								
PZ-10	11/16/06	<10	<10	<10	<10	2 J	<10	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.01	17.1	4368	>100	-89	4.8
	08/18/08	HRC INJECTION																								
	03/30/10	<5.0	<1.0	<1.0	<1.0	0.73 J	<1.0	0.73	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.88	11.6	3027	140	12	8.54
	06/03/11	<5.0	<1.0	<1.0	<1.0	0.53 J	<1.0	0.53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.51	13.6	9522	40	93	7.89
	06/04/12	<10	<1.0	<1.0	<1.0	1	<1.0	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.84	13.6	3300	47.4	552	7.14
	Total Reduction of cVOCs Detected [4]	75.00%																								
PZ-11	01/05/07	<50	<50	94	<50	18000 D	<50	18094	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.22	11.2	2865	>1000	110	5.46
	04/24/08	<2000	<400	170	<400	22000 D	34	22204	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.18	12.0	7975	>1000	187	5.17
	08/18/08	HRC INJECTION																								
	03/30/10	<20	<4.0	12 D	<4.0	6800 D	5.9 D	6817.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.25	8.3	9696	54	5	6
	06/02/11	<10	<1.0	17	<1.0	5400 D	5.6	5422.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.46	13.2	6102	47	99	4.08
	06/04/12	<500	<50	<50	<50	3400	<50	3400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.51	14.4	4076	>1000	564	4.36
	Total Reduction of cVOCs Detected [4]	84.69%																								
PZ-12	01/05/07	<200	<200	<200	<200	7200 D	<200	7200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.03	11.5	3083	>1000	103	4
	04/24/08	<25	<5.0	230	<5.0	23000 D	23	23253	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.21	13.0	4004	>1000	201	3.34
	08/18/08	HRC INJECTION																								
	03/30/10	<50	<10	7.4 DJ	<10	1100 D	12 D	1119.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.30	9.4	3741	>1000	7	2.38
	06/02/11	<10	<1.0	5.7	<1.0	4300 D	4.3	4310	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.38	13.6	3294	100	89	2.57
	06/04/12	<100	<10	56	<10	700	14	770	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.51	14	3324	268	431	2.61
	Total Reduction of cVOCs Detected [4]	96.69%																								

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 10

SUMMARY OF HISTORICAL GROUNDWATER ANALYTICAL RESULTS

Remedial Investigation Report
275 Franklin Street & 432 Pearl Street Sites
BCP Sites No. C915208 & C915237

Monitoring Location & Sample Date		Parameter [1,2]																							
		TCL Volatile Organic Compounds (ug/L)							Microbial Parameters (cells/mL)				Water Quality Parameters (mg/L)								Field Measurements (units as indicated)					
		2-Butanone (MEK)	1,2-Dichlorobenzene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	*Total TCL cVOCs*	Dehalococcoides	TCE R-Dase	BAV1 VC R-Dase	Vinyl Chloride Reductase (VC R-Dase)	Total Organic Carbon (TOC)	Iron- Soluble	Manganese- Soluble	Nitrate, mg/L-N	Sulfate	Ethane	Ethene	Methane	pH (units)	Temperature (°C)	Specific Conductance (uS)	Turbidity	ORP (mV)	DO (ppm)
GWQS [3]		**50**	**3**	**5**	**5**	**5**	**5**	--	--	--	--	--		**300**	**300**	**10**	**250**	--	--	**250**	**6.5 - 8.5**	--	--	--	--	--
PZ-13	01/05/07	<10	<10	1 J	<10	180	<10	181	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.11	11.9	3304	>1000	68	5.18
	04/24/08	<20	<4.0	78	<4.0	1900 D	25	2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.28	12.8	2487	>1000	131	5.7
	08/18/08	HRC INJECTION																							
	03/30/10	<5.0	<1.0	20	<1.0	98	11	130.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.11	10.1	3721	87	-91	2.24
	06/02/11	<5.0	<1.0	9.6	<1.0	120	4.5	134.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.54	14.3	3130	469	-79	2.36
	06/04/12	<20	<2.0	7.4	<2.0	280 D	7.1	294.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.49	13.8	4080	667	344	3.5
	Total Reduction of cVOCs Detected [4]							85.30%																	
PZ-14	01/05/07	<10	1 J	6 J	<10	3000 D	<10	3006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.40	11.3	1798	>1000	56	5.5
	04/24/08	<20	<4.0	28	<4.0	5300 D	20	5348	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.40	11.6	1985	>1000	124	5.61
	08/18/08	HRC INJECTION																							
	04/08/10	<25.0	0.53 J	30	<5.0	1100 D	10	1140.55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.18	11.8	4756	46	64	2.49
	06/02/11	<10	<1.0	9.2	<1.0	2100 D	5.8	2115	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.81	13.3	3861	>1000	104	6.1
	06/04/12	<250	<25	26	<25	1200	12 J	1238	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.73	13	4500	16	555	8.07
	Total Reduction of cVOCs Detected [4]							76.85%																	
MW-5	04/25/08	<5.0	1.2	16	<1.0	19000 DJ	5.1	19021.1	<0.5	NA	NA	<0.5	NA	ND	0.1	5.7	87.4	ND	ND	0.0022	7.33	13.8	3070	>1000	-51	4.92
	08/18/08	HRC INJECTION																							
	10/02/08	<5.0	4.8	20	<1.0	50000 D	7.2	50027.2	5.23	0.116 J	5.8	<0.461	NA	ND	0.0099	8.1	85.8	ND	ND	ND	7.27	13.7	3454	2213	-40	6.27
	12/18/08	<2500	<500	<500	<500	34000 D	<500	34000	0.6	<.8	<.8	<.8	NA	ND	1.2	4.4	58.8	ND	ND	ND	6.99	10.4	4089	NA	-76	2.87
	02/11/09	4.9 J	2.7	66	<1.0	36000 D,H	19	36089.9	2.6	<1.6	<1.6	7.7	NA	<0.05	0.91	5.57	84.4	<.0015	<.0015	<.001	7.17	13.4	5153	12.8	-71	2.14
	04/21/09	11	3.5	<1.0	0.64 J	37000 D	27	37039.65	2.2	<1.0	<1.0	<1.0	NA	<0.05	1.8	5.19 D	98 D	<.0015	<.0015	2.2	7.22	13.7	4730	2.6	-115	1.23
	07/17/09	<5.0	3.1	<800	1	31000 D	86	31087	0.5 J	<0.7	<0.7	<0.7	1.8	0.557	0.246	6.57 D	110 D	<.0015	<.0015	<.001	7.02	15.5	5656	2	-100	1.98
	03/29/10	<500	<500	<500	<500	25000 D	<500	25000	4	<5.0	<5.0	<5.0	NA	<0.05	0.495	7.35	89.2 B	<1.5	<1.5	<1.0	6.81	11.3	6748	3.28	-71	4.26
	06/02/11	<10	3.8	4.8	<1.0	49000 D	12	49016.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.26	13.1	5350	6	-23	6
	06/05/12	<10	<1.0	<1.0	<1.0	70000	<1.0	70000	NA	NA	NA	NA	NA	NA	4.5	NA	126	NA	NA	0.38 BJ	7.20	13.4	4892	3.43	593	4.58
	Total Reduction of cVOCs Detected [4]							NA																	
Intermediate Overburden Wells																									
MW-1	12/08/06	<10	<10	2 J	<10	4100	21	4187	NA	NA	NA	NA	NA	NA	NA	1.8	113 J	NA	NA	NA	7.09	10.5	1903	>1000	0	3.02
	04/24/08	<5.0	<1.0	<1.0	<1.0	26	<1.0	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.73	19.4	1948	>1000	193	2.13
	08/18/08	HRC INJECTION																							
	10/02/08	23	<1.0	<1.0	<1.0	29	0.51 J	52.51	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.90	12.5	2502	363	5	1.76
	12/18/08	21	<1.0	15	<1.0	32	0.87 J	68.87	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.64	11.5	2217	-13	25.2	0.067
	02/11/09	11	<1.0	20	<1.0	8.4	<1.0	39.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.86	13.3	2064	10.2	-98	0.98
	04/21/09	4.3 J	<1.0	16	<1.0	12	0.58 J	32.88	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.70	14.1	1914	67.1	-248	0.41
	07/17/09	<5.0	<1.0	9.1	<1.0	3.9	<1.0	13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.04	15.0	1945	4.05	-273	0.59
	03/29/10	<5.0	<1.0	33	<1.0	93	0.78 J	126.78	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.63	11.9	2093	50.3	-193	1.58
	06/02/11	<10	<1.0	14	<1.0	43	<1.0	57	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.01	14.3	2070	13	-195	0.95
	06/05/12	<10	<1.0	5	<1.0	62	0.71 J	67.71	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.19	14.2	2153	7.49	-158	0.92
	Total Reduction of cVOCs Detected [4]							98.38%																	

TABLE 10

SUMMARY OF HISTORICAL GROUNDWATER ANALYTICAL RESULTS

Remedial Investigation Report
275 Franklin Street & 432 Pearl Street Sites
BCP Sites No. C915208 & C915237

Monitoring Location & Sample Date		Parameter [1,2]																							
		TCL Volatile Organic Compounds (ug/L)							Microbial Parameters (cells/mL)				Water Quality Parameters (mg/L)								Field Measurements (units as indicated)					
		2-Butanone (MEK)	1,2-Dichlorobenzene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	*Total TCL cVOCs*	Dehalococcoides	TCE R-Dase	BAV1 VC R-Dase	Vinyl Chloride Reductase (VC R-Dase)	Total Organic Carbon (TOC)	Iron- Soluble	Manganese- Soluble	Nitrate, mg/L-N	Sulfate	Ethane	Ethene	Methane	pH (units)	Temperature (°C)	Specific Conductance (uS)	Turbidity	ORP (mV)	DO (ppm)
GWQS [3]		**50**	**3**	**5**	**5**	**5**	**5**	--	--	--	--	--		**300**	**300**	**10**	**250**	--	--	**250**	**6.5 - 8.5**	--	--	--	--	--
MW-2	12/08/06	<10	<10	<10	<10	5 J	<10	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.89	9.2	1774	122	16	1.6
	08/18/08	HRC INJECTION																								
	03/30/10	<5.0	<1.0	<1.0	<1.0	6.5	<1.0	6.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.34	12.8	3492	63	5	3.35
	06/03/11	<5.0	<1.0	<1.0	<1.0	0.76 J	<1.0	0.76	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.23	15.4	2837	8.38	87	1.53
	06/04/12	<10	<1.0	<1.0	<1.0	0.81 J	<1.0	0.81	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.47	14.3	3410	4.14	574	2.34
	Total Reduction of cVOCs Detected [4]	87.54%																								
MW-3	12/08/06	<10	<10	<10	<10	6 J	<10	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.91	9.6	1746	231	82	2.16
	04/24/08	<5.0	<1.0	<1.0	<1.0	0.55 J	<1.0	0.55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.35	16.6	1821	>1000	99	4.09
	08/18/08	HRC INJECTION																								
	03/30/10	<5.0	<1.0	<1.0	<1.0	7.1	<1.0	7.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.05	11.8	2109	17	-93	1.97
	06/02/11	<5.0	<1.0	<1.0	<1.0	9.1	<1.0	9.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.30	15.0	2000	7	-63	1.6
	06/04/12	<10	<1.0	<1.0	<1.0	1.1	<1.0	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.50	13.6	2024	7.37	473	3.4
	Total Reduction of cVOCs Detected [4]	87.91%																								
Deep Overburden Wells																										
MW-4	04/24/08	<5.0	<1.0	1.2	<1.0	300 D	0.6 J	301.8	0.57	NA	NA	0.22 J	NA	ND	0.081	1.7	118	ND	ND	ND	7.30	18.0	1879	>1000	114	3.27
	08/18/08	HRC INJECTION																								
	10/02/08	17	<1.0	4	<1.0	11	<1.0	32	28.3	<2.99	3.73	<2.99	NA	20.6	1.8	0.38	96.4	ND	ND	0.0025	6.23	13.5	2830	178	-46	1.71
	12/18/08	25	<1.0	4.6	<1.0	7.1	<1.0	36.7	1.2	<1.1	<1.1	<1.1	NA	21.8	1.5	0.37	63.9	ND	ND	0.014	5.90	11.2	2821	NA	-76	0.84
	02/11/09	28	<1.0	6.3	<1.0	2	<1.0	36.3	13.2	<1.6	<1.6	7.7	NA	15.4	0.676	0.372	65.4	<.0015	<.0015	0.0333	6.17	13.4	2435	20.1	-132	0.93
	04/21/09	20	<1.0	1.6	<1.0	1.9	<1.0	23.5	1.5 J	<2.5	<2.5	<2.5	NA	10.4	0.321	0.551	61	<.3	<.3	0.85	6.50	4.9	2003	15.9	-198	0.68
	07/17/09	19	<1.0	2	<1.0	73	<1.0	95.3	NA	NA	NA	NA	NA	2.37	0.278	<0.05	64	<1.5	<1.5	6.1	6.64	16.2	2642	15	-185	0.64
	03/29/10	<5.0	<1.0	1.3	<1.0	4.8	<1.0	6.1	21.8	<2.2	<2.2	<2.2	NA	<0.05	0.139	0.586	97.8	<1.5	<1.5	5.5	7.01	11.3	2161	6.56	-118	1.29
	06/02/11	<10	<1.0	<1.0	<1.0	2.4	<1.0	2.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.29	13.9	2053	8	-82	8
	06/05/12	<10	<1.0	2.5	<1.0	120 D	3.3	125.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.19	14.0	2156	4.48	21	2.57
	Total Reduction of cVOCs Detected [4]	58.32%																								
MW-6	04/25/08	<20	<4.0	<4.0	<4.0	9400 D	8.8 J	9412.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.57	15.2	1861	>1000	-138	2.18
	08/18/08	HRC INJECTION																								
	10/02/08	43	<1.0	44	<1.0	53	9.5	149.5	33.2	<1.23	7.01	0.588 J	NA	15.8	0.97	0.32	420	ND	ND	ND	6.57	13.7	2475	3669	-51	1.94
	12/18/08	130	<1.0	150 D	1.2	21	<1.0	302.2	14.5	<5.0	<5.0	<5.0	NA	48.7	3	ND	ND	ND	ND	0.0066	5.79	11.8	3911	NA	0.111	0.78
	02/11/09	45 D	<1.0	270 D	<1.0	22 D	17 D	354	5.7	<2.4	<2.4	4.4	NA	35.5	1.75	<0.05	13.4	<.0015	<.0015	0.257	5.91	12.9	3565	45.6	-102	1.53
	04/21/09	29	<1.0	130 D	1.5	43	14	218.41	2.1 J	<2.4	<2.4	2.6	NA	7.44	0.671	0.011 J	4.7	<1.5	<1.5	<1	6.64	14.5	2394	30.7	-142	0.93
	07/17/09	11 DJ	<4.0	240 D	<4.0	17 D	3.8 D	274.9	0.8 J	<1.3	<1.3	0.4 J	NA	<.05	<.003	0.42	83	<1.5	<1.5	6.4 D	7.04	15.0	2156	16.3	-131	2.32
	03/29/10	<10	<2.0	28 D	<2.0	140 D	36 D	204	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.11	12.0	2261	12.2	-85	2.51
	06/02/11	<10	<1.0	29	<1.0	200 D	19 D	248	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.20	14.3	2066	13	-90	1.72
	06/05/12	<10	<1.0	6	<1.0	91	42	139	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.31	13.8	2217	16.4	5	2.52
	Total Reduction of cVOCs Detected [4]	98.52%																								
MW-7	08/18/08	HRC INJECTION																								
	06/05/12	<10	<1.0	51	<1.0	18	<1.0	69	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.26	13.9	2089	29.3	1.7	85

TABLE 10

SUMMARY OF HISTORICAL GROUNDWATER ANALYTICAL RESULTS

Remedial Investigation Report
275 Franklin Street & 432 Pearl Street Sites
BCP Sites No. C915208 & C915237

Monitoring Location & Sample Date		Parameter [1,2]																							
		TCL Volatile Organic Compounds (ug/L)							Microbial Parameters (cells/mL)				Water Quality Parameters (mg/L)								Field Measurements (units as indicated)					
		2-Butanone (MEK)	1,2-Dichlorobenzene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	*Total TCL cVOCs*	Dehalococcoides	TCE R-Dase	BAV1 VC R-Dase	Vinyl Chloride Reductase (VC R-Dase)	Total Organic Carbon (TOC)	Iron- Soluble	Manganese- Soluble	Nitrate, mg/L-N	Sulfate	Ethane	Ethene	Methane	pH (units)	Temperature (°C)	Specific Conductance (uS)	Turbidity	ORP (mV)	DO (ppm)
GWQS [3]		**50**	**3**	**5**	**5**	**5**	**5**	--	--	--	--	--		**300**	**300**	**10**	**250**	--	--	**250**	**6.5 - 8.5**	--	--	--	--	--
Off-Site NYSDEC Wells (S = shallow, D = deep) [5]																									
MW-21S	08/18/08	HRC INJECTION																							
	05/28/09	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	06/07/11	<10	<5.0	<5.0	<5.0	<5.0	<5.0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-21D	08/18/08	HRC INJECTION																							
	05/28/09	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	06/07/11	<10	<5.0	<5.0	<5.0	<5.0	<5.0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-22S	08/18/08	HRC INJECTION																							
	05/28/09	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	06/07/11	<10	<5.0	<5.0	<5.0	<5.0	<5.0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-22D	08/18/08	HRC INJECTION																							
	05/28/09	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	06/07/11	<10	<5.0	<5.0	<5.0	<5.0	<5.0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-23S	08/18/08	HRC INJECTION																							
	05/28/09	<5.0	<1.0	47	<1.0	560 D	3.6	610.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	06/07/11	<10	<5.0	<5.0	<5.0	650	<5.0	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	06/04/12	<10	<1.0	11	<1.0	1800 D	4.1	1815.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.63	11.8	3366	46.6	482	2.35
MW-23D	08/18/08	HRC INJECTION																							
	05/28/09	<5.0	<1.0	<1.0	<1.0	3.4	<1.0	3.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	06/07/11	<10	<5.0	<5.0	<5.0	<5.0	<5.0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-24S	08/18/08	HRC INJECTION																							
	05/28/09	<5	<1.0	5.8	<1.0	180 D	35	220.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	06/07/11	<100	<50	<50	<50	1300	<50	1300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	06/04/12	<10	<1.0	2.2	<1.0	2900 D	1.1	2903.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.51	13.1	3198	59.5	300	1.74
MW-24D	08/18/08	HRC INJECTION																							
	05/28/09	<5	<1.0	<1.0	<1.0	<1.0	<1.0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	06/07/11	<10	<5.0	11	<5.0	3 J	<5.0	14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	06/04/12	<10	<1.0	100 D	<1.0	1.1	<1.0	101.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.60	13.6	2400	34.7	-69	1.68

TABLE 10

SUMMARY OF HISTORICAL GROUNDWATER ANALYTICAL RESULTS

Remedial Investigation Report
275 Franklin Street & 432 Pearl Street Sites
BCP Sites No. C915208 & C915237

Monitoring Location & Sample Date		Parameter [1,2]																							
		TCL Volatile Organic Compounds (ug/L)							Microbial Parameters (cells/mL)				Water Quality Parameters (mg/L)							Field Measurements (units as indicated)					
		2-Butanone (MEK)	1,2-Dichlorobenzene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	*Total TCL cVOCs*	Dehalococcoides	TCE R-Dase	BAV1 VC R-Dase	Vinyl Chloride Reductase (VC R-Dase)	Total Organic Carbon (TOC)	Iron- Soluble	Manganese- Soluble	Nitrate, mg/L-N	Sulfate	Ethane	Ethene	Methane	pH (units)	Temperature (°C)	Specific Conductance (uS)	Turbidity	ORP (mV)	DO (ppm)
GWQS [3]		50	3	5	5	5	5	--	--	--	--	--		300	300	10	250	--	--	250	6.5 - 8.5	--	--	--	--	--
MW-25S	08/18/08	HRC INJECTION																							
	10/24/12	<1.3	<0.79	2.9	<0.90	1900	6.6	1909.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	(6)	(6)	(6)	(6)	(6)	(6)
MW-26S	08/18/08	HRC INJECTION																							
	10/24/12	<1.3	<0.79	5.4	<0.90	3100	12	3117.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	(6)	(6)	(6)	(6)	(6)	(6)
MW-27S	08/18/08	HRC INJECTION																							
	10/24/12	<1.3	<0.79	<0.81	<0.90	1.7	<0.46	1.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	(6)	(6)	(6)	(6)	(6)	(6)

Notes:

1. Only those parameters detected above their specific Groundwater Quality Standard at a minimum of one sample location are presented in this table.
2. Blue cells above the dashed line represents monitoring events conducted prior to the IRM HRC injection event completed in August 18-20, 2008.
3. Groundwater Quality Standard (GWQS) per NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1.
4. Total reduction of cVOCs was calculated by comparing the highest observed cVOC concentration to the most recent cVOC observation.
5. Groundwater data for the May 2009, June 2011, and October 2012 events obtained from NYSDEC. The June 2012 samples were collected by Benchmark.
6. Field parameter results were not provided by the NYSDEC.

Definitions:

ND = Parameter not detected above laboratory detection limit.
NA = Sample not analyzed for parameter.
"--" = No groundwater quality standard available.
J = Estimated value; result is less than the sample quantitation limit but greater than zero.
b = Analyte was detected in the associated blank as well as in the sample. Value is above the action level for consideration as being external contamination.
B = Indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit.

* = Indicates the spike or duplicate analysis is not within the quality control limits.
D = All compounds were identified in an analyisis at the secondary dilution factor.
N = Indicates spike sample recovery is not within the quality control limits.
E = Indicates value estimated or not reported due to the presence of interferences.
P = Detected concentrations between the two GC columns is greater than 25%; lower value is reported and flagged (for CLP methodology only).
H = Initial analysis within holding time. Reanalysis for the required dilution was past holding time.

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TABLE 11

SUMMARY OF SOIL ANALYTICAL DATA vs. UNRESTRICTED SCOs - NOVEMBER 2006

275 Franklin Street & 432 Pearl Street Sites
BCP Sites No. C915208 & C915237
Buffalo, New York

Parameter [1]	Sample Event																					Unrestricted SCOs [3]
	Historical Data							Brownfield Cleanup Program Remedial Investigation Data														
	275-277 Franklin St. (September 2004)		279 Franklin St. (January 2006)		432 Pearl St. (January and November 2006)			279 Franklin St. (November 2006)			275-277 Franklin St. (November 2006)					432 Pearl St. (November 2006)						267 Franklin St. (November 2006)	
	B-3 (10-12')	B-5 (10-12')	SB-1	SB-2	SB-1	SB-2	SB-3	PZ-1 (1-4')	PZ-2 (6-8')	PZ-3 (2-4')	PZ-4 (6-8')	PZ-5 (8-9')	PZ-6 (6-8')	MW-1 (6-10')	BD [2] (6-10')	PZ-8 (1-4')	PZ-9 (2-4')	PZ-9 (4-8')	PZ-10 (4-8')	SB-4 (4-8')	MW-2 (2-6')	MW-3 (6-8')	
TCL SVOCs - base neutral fraction (mg/kg) [4]																						
Acenaphthene	NA	NA	ND	ND	ND	1.4 J	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	ND	NA	ND	NA	NA	**20**
Acenaphthylene	NA	NA	ND	ND	ND	0.48 J	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	ND	NA	ND	NA	NA	**100 ***
Anthracene	NA	NA	ND	ND	ND	2.7 J	ND	NA	NA	NA	NA	NA	NA	ND	0.009 J	0.024 J	NA	ND	NA	ND	NA	NA	**100 ***
2,4-Dinitrophenol	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	1.4 J	3.7 J	1 J	NA	0.86 J	NA	0.85 J	NA	NA	**--**
Benzo(a)anthracene	NA	NA	ND	0.44 J	**7.2 J**	**7.7 J**	0.8 J	NA	NA	NA	NA	NA	NA	0.013 J	0.041 J	0.14 J	NA	ND	NA	ND	NA	NA	**1**
Benzo(b)fluoranthene	NA	NA	ND	0.57 J	**10 J**	**12**	0.93 J	NA	NA	NA	NA	NA	NA	0.015 J	0.062 J	0.16 J	NA	ND	NA	ND	NA	NA	**1**
Benzo(k)fluoranthene	NA	NA	ND	ND	**4.4 J**	**2.6 J**	0.35 J	NA	NA	NA	NA	NA	NA	0.012 J	0.016 J	0.16 J	NA	ND	NA	ND	NA	NA	**0.8**
Benzo(ghi)perylene	NA	NA	ND	0.47 J	4.7 J	4.2 J	0.38 J	NA	NA	NA	NA	NA	NA	0.014 J	0.035 J	0.05 J	NA	ND	NA	ND	NA	NA	**100**
Benzo(a)pyrene	NA	NA	ND	ND	**7.2 J**	**8.3**	0.74 J	NA	NA	NA	NA	NA	NA	0.009 J	0.044 J	0.14 J	NA	ND	NA	ND	NA	NA	**1**
Bis (2-ethylhexyl) phthalate	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	11	5.9	ND	NA	ND	NA	ND	NA	NA	**--**
Butyl benzyl phthalate	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.75	0.4	ND	NA	ND	NA	ND	NA	NA	**--**
Carbazole	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	0.039 J	NA	ND	NA	ND	NA	NA	**--**
Chrysene	NA	NA	ND	ND	**7.8 J**	**8.4 J**	0.71 J	NA	NA	NA	NA	NA	NA	0.012 J	0.04 J	0.2 J	NA	ND	NA	ND	NA	NA	**1**
Dibenzo (a,h) anthracene	NA	NA	ND	ND	ND	**1.3 J**	ND	NA	NA	NA	NA	NA	NA	0.014 J	0.011 J	0.017 J	NA	ND	NA	ND	NA	NA	**0.33**
Dibenzofuran	NA	NA	ND	ND	ND	1.1 J	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	ND	NA	ND	NA	NA	**--**
Di-n-butyl phthalate	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.18 J	0.13 J	ND	NA	ND	NA	ND	NA	NA	**--**
Di-n-octyl phthalate	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.52	0.3 J	ND	NA	ND	NA	ND	NA	NA	**--**
Fluoranthene	NA	NA	0.63 J	0.55 J	18 J	20	1.9 J	NA	NA	NA	NA	NA	NA	0.019 J	0.083 J	0.49	NA	ND	NA	ND	NA	NA	**100**
Fluorene	NA	NA	ND	ND	ND	1.3 J	ND	NA	NA	NA	NA	NA	NA	ND	ND	0.011 J	NA	ND	NA	ND	NA	NA	**30**
Indeno (1,2,3-cd) pyrene	NA	NA	ND	ND	**4.3 J**	**3.8 J**	0.36 J	NA	NA	NA	NA	NA	NA	0.016 J	0.038 J	0.065 J	NA	ND	NA	ND	NA	NA	**0.5**
2-Methylnaphthalene	NA	NA	ND	ND	ND	0.66 J	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	ND	NA	ND	NA	NA	**--**
Naphthalene	NA	NA	ND	ND	ND	1.3 J	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	ND	NA	ND	NA	NA	**12**
N-Nitroso-Di-n-propylamine	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	0.34 J	0.34 J	NA	ND	NA	NA	**--**
Phenanthrene	NA	NA	ND	ND	12 J	17	1.5 J	NA	NA	NA	NA	NA	NA	0.01 J	0.044 J	0.22 J	NA	ND	NA	ND	NA	NA	**100**
Pyrene	NA	NA	0.53 J	0.58 J	17 J	21	1.7 J	NA	NA	NA	NA	NA	NA	0.016 J	0.059 J	0.27 J	NA	ND	NA	ND	NA	NA	**100**
Total SVOCs	--	--	*1.16*	*2.61*	*92.6*	*113*	*9.37*	--	--	--	--	--	--	*14.0*	*10.9*	*2.99*	*0.34*	*1.20*	--	*0.85*	--	NA	--
Pesticides/PCBs (mg/kg) [4]																						
Dieldrin	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	**0.0051 J**	0.0038 J	ND	NA	ND	NA	ND	NA	NA	**0.005**
4,4'-DDE	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	**0.0053 J**	**0.0037 J**	ND	NA	ND	NA	ND	NA	NA	**0.0033**
4,4'-DDD	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	**0.0089 J**	**0.0067 J**	ND	NA	ND	NA	ND	NA	NA	**0.0033**
4,4'-DDT	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	**0.044 J**	**0.026 J**	0.0005 J	NA	ND	NA	ND	NA	NA	**0.0033**
Methoxychlor	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	0.0068 NJ	ND	NA	ND	NA	ND	NA	NA	**--**
Endrin	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	**0.015 J**	**0.019 J**	ND	NA	ND	NA	ND	NA	NA	**0.014**
Endrin ketone	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.003 J	ND	ND	NA	0.0007 J	NA	ND	NA	NA	**--**
Endrin aldehyde	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	1E-03 NJ	NA	ND	NA	ND	NA	NA	**--**
alpha-Chlordane	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.0035 J	ND	ND	NA	ND	NA	ND	NA	NA	**0.094**
gamma-Chlordane	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.0034 J	0.0024 NJ	ND	NA	ND	NA	ND	NA	NA	**--**
Arochlor 1254	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	**0.15 J**	**0.19 J**	ND	NA	ND	NA	ND	NA	NA	**0.1**
TAL Metals (mg/kg)																						
Aluminum	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	2190 J	2770 J	5930 *	NA	2310 *	NA	1500 *	NA	NA	**--**
Antimony	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.92 B	ND	ND	NA	ND	NA	ND	NA	NA	**--**
Arsenic	NA	NA	3.5	5.1	5.3	9	4.3	NA	NA	NA	NA	NA	NA	1.6 J	1.9 J	2.6 J	NA	0.44 J	NA	0.69 J	NA	NA	**13**
Barium	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	15.7 B	21.6	111	NA	13.2 B	NA	12.5 B	NA	NA	**350**

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TABLE 11

SUMMARY OF SOIL ANALYTICAL DATA vs. UNRESTRICTED SCOs - NOVEMBER 2006

275 Franklin Street & 432 Pearl Street Sites
BCP Sites No. C915208 & C915237
Buffalo, New York

Parameter [1]	Sample Event																					Unrestricted SCOs [3]
	Historical Data							Brownfield Cleanup Program Remedial Investigation Data														
	275-277 Franklin St. (September 2004)		279 Franklin St. (January 2006)		432 Pearl St. (January and November 2006)			279 Franklin St. (November 2006)			275-277 Franklin St. (November 2006)					432 Pearl St. (November 2006)						267 Franklin St. (November 2006)	
	B-3 (10-12')	B-5 (10-12')	SB-1	SB-2	SB-1	SB-2	SB-3	PZ-1 (1-4')	PZ-2 (6-8')	PZ-3 (2-4')	PZ-4 (6-8')	PZ-5 (8-9')	PZ-6 (6-8')	MW-1 (6-10')	BD [2] (6-10')	PZ-8 (1-4')	PZ-9 (2-4')	PZ-9 (4-8')	PZ-10 (4-8')	SB-4 (4-8')	MW-2 (2-6')	MW-3 (6-8')	
Beryllium	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.09 B	0.1 B	ND	NA	ND	NA	ND	NA	NA	**7.2**
Cadmium	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	0.14 B	0.22 B	0.16 B	NA	ND	NA	0.1 B	NA	NA	**2.5**
Calcium	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	41200 J	53300 J	28600 *	NA	59200 *	NA	38300 *	NA	NA	**--**
Chromium	NA	NA	6.3	11.1	6.6	11.4	8.2	NA	NA	NA	NA	NA	NA	3.9	7.1	7.6	NA	3.3	NA	2.5	NA	NA	**30**
Cobalt	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	1.8 B	2.3 B	2.9 B	NA	1.3 B	NA	1.3 B	NA	NA	**--**
Copper	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	5.8	12.4	16.4	NA	4.2	NA	4.8	NA	NA	**50**
Iron	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	6370	8470	8910 *	NA	5680 *	NA	4010 *	NA	NA	**--**
Lead	NA	NA	**87.8**	**358**	**103**	**507**	**78.1**	NA	NA	NA	NA	NA	NA	6.3 J	9.4 J	**72.3 J**	NA	3.8 J	NA	8.3 J	NA	NA	**63**
Magnesium	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	18800	24400	6960 *	NA	24300 *	NA	16900 *	NA	NA	**--**
Manganese	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	208 J	266 J	428 J	NA	157 J	NA	137 J	NA	NA	**1600**
Mercury	NA	NA	0.18	**0.33**	0.089	**1.1**	0.11	NA	NA	NA	NA	NA	NA	ND	ND	**0.426**	NA	ND	NA	ND	NA	NA	**0.18**
Nickel	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	3.7 B	4.7	7.0	NA	3.2 B	NA	2.6 B	NA	NA	**30**
Potassium	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	547	707	886	NA	615	NA	382 B	NA	NA	**--**
Selenium	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	0.69 B	NA	ND	NA	ND	NA	NA	**3.9**
Silver	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	0.15 B	NA	ND	NA	ND	NA	NA	**2**
Sodium	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	153 B	224 B	1080	NA	124 B	NA	113 B	NA	NA	**--**
Thallium	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	ND	NA	ND	NA	NA	**--**
Vanadium	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	9.3	12.2	12.9	NA	8.1	NA	5.4	NA	NA	**--**
Zinc	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	52.3 J	64.9 J	88.8 *	NA	42.9 *	NA	43.6 *	NA	NA	**109**
Wet Chemistry Analysis (units as indicated)																							
Leachable pH (S.U.)	NA	NA	NA	NA	NA	NA	NA	7.84	8.1	8.31	8.03	8.06	8.19	8.38	7.85	9.18	9.28	8.12	8.62	8.85	NA	NA	**--**

Notes:
1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Blind duplicate collected from MW-1.
3. Values per NYSDEC Part 375 Soil Cleanup Objectives (December 2006). "100* " = the SCOs for unrestricted use were capped at a maximum value of 100 ppm.
4. Sample results were reported by the laboratory in ug/kg and converted to mg/kg for comparison to SCOs.

Definitions:
ND = Parameter not detected above laboratory detection limit.
NA = Sample not analyzed for parameter.
J = Estimated value; result is less than the sample quantitation limit but greater than zero.
b = Analyte was detected in the associated blank as well as in the sample. Value is above the action level for consideration as being external contamination.
B = Indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit.
* = Indicates the spike or duplicate analysis is not within the quality control limits.
D = All compounds were identified in an analyisis at the secondary dilution factor.
N = Indicates spike sample recovery is not within the quality control limits.
E = Indicates value estimated or not reported due to the presence of interferences.
P = Detected concentrations between the two GC columns is greater than 25%; lower value is reported and flagged (for CLP methodology only).
BOLD = Sample Result exceeds unrestricted SCO

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 12A

COST FOR IRM, GROUNDWATER TREATMENT, SOIL COVER, SOIL VAPOR MITIGATION AND IMPLEMENTATION OF A SITE MANAGEMENT PLAN

Remedial Investigation Report
Buffalo Development Corporation Site
Buffalo, New York

Item	Quantity[2]	Units	Unit Cost	Total Cost
Groundwater Treatment				
In-Situ Treatment	1	LS	$ 100,000.00	$ 100,000
Performance Groundwater Monitoring	3	Q	$ 5,000.00	$ 15,000
Subtotal:				**$ 115,000**
Soil Vapor Mitigation				
System Design and Engineering	1	EST	$ 5,000.00	$ 5,000
System Material and Installation	1	EST	$ 20,000.00	$ 20,000
Subtotal:				**$ 25,000**
Subtotal Capital Cost				**$ 140,000**
Contractor Mobilization/Demobilization (5%)				$ 7,000
Health and Safety (2%)				$ 2,800
Engineering/Contingency (35%)				$ 49,000
Total Track 4 Commercial Cleanup Cost				**$ 198,800**
Total IRM Cost				**$ 350,000**
Total Capital Cost				**$ 548,800**
Annual Operation Maintenance & Monitoring (OM&M):				
Annual Groundwater Monitoring	1	Yr	$ 8,800.00	$ 8,800
Annual Certifications	1	Yr	$ 1,800.00	$ 1,800
Total Annual OM&M Cost				**$ 10,600**
Number of Years (n):				30
Interest Rate (I):				5%
p/A value:				15.3725
OM&M Present Worth (PW):				**$ 162,949**
Total Present Worth (PW): Capital Cost + OM&M PW				**$ 711,749**

Notes:

1. VOCs, SVOCs, Metals, PCBs, Pesticides; expedited turn around time of 3 days.
2. The volume of impacted soil/fill was determined as follows:

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TABLE 12B

COST FOR UNRESTRICTED USE CLEANUP

Remedial Investigation Report
Buffalo Development Corporation Site
Buffalo, New York

Item	Quantity[2]	Units	Unit Cost	Total Cost
Impacted Soil/Fill Removal				
Soil/Fill Excavating & Hauling	2169	CY	$ 20.00	$ 43,384
Disposal at TSDF (1.5 tons per CY)	3688	TON	$ 50.00	$ 184,381
Verification Sampling[1]	20	EA	$ 850.00	$ 17,000
Subtotal:				**$ 244,764**
Site Restoration				
Backfill, Place & Compact	2169	CY	$ 15.00	$ 32,538
Subtotal:				**$ 32,538**
Groundwater Treatment				
In-Situ Treatment	1	LS	$ 100,000.00	$ 100,000
Performance Groundwater Monitoring	3	Q	$ 5,000.00	$ 15,000
Subtotal:				**$ 115,000**
Soil Vapor Mitigation				
System Design and Engineering	1	EST	$ 5,000.00	$ 5,000
System Material and Installation	1	EST	$ 20,000.00	$ 20,000
Subtotal:				**$ 25,000**
Subtotal Capital Cost				**$ 417,302**
Contractor Mobilization/Demobilization (5%)				$ 20,865
Health and Safety (2%)				$ 8,346
Engineering/Contingency (35%)				$ 146,056
Total Unrestricted Cleanup Cost				**$ 592,569**
Total IRM Cost				**$ 350,000**
Total Capital Cost				**$ 942,569**
Annual Operation Maintenance & Monitoring (OM&M):				
Annual Groundwater Monitoring	1	Yr	$ 8,800.00	$ 8,800
Annual Certifications	1	Yr	$ 1,800.00	$ 1,800
Total Annual OM&M Cost				**$ 10,600**
Number of Years (n):				30
Interest Rate (I):				5%
p/A value:				15.3725
OM&M Present Worth (PW):				**$ 162,949**
Total Present Worth (PW): Capital Cost + OM&M PW				**$ 1,535,138**

Notes:

1. VOCs, SVOCs, Metals, PCBs, Pesticides; expedited turn around time of 3 days.
2. The volume of impacted soil/fill was determined as follows:

	Area (ft^2)	Depth (ft)	Volume (ft^3)	Volume (CY)
Area 1	1928	4	7712	286
Area 2	768	10	7680	284
Area 3	10794	4	43176	1599
TOTAL			**58568**	**2169**

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TABLE 12C

SUMMARY OF REMEDIAL ALTERNATIVES COSTS

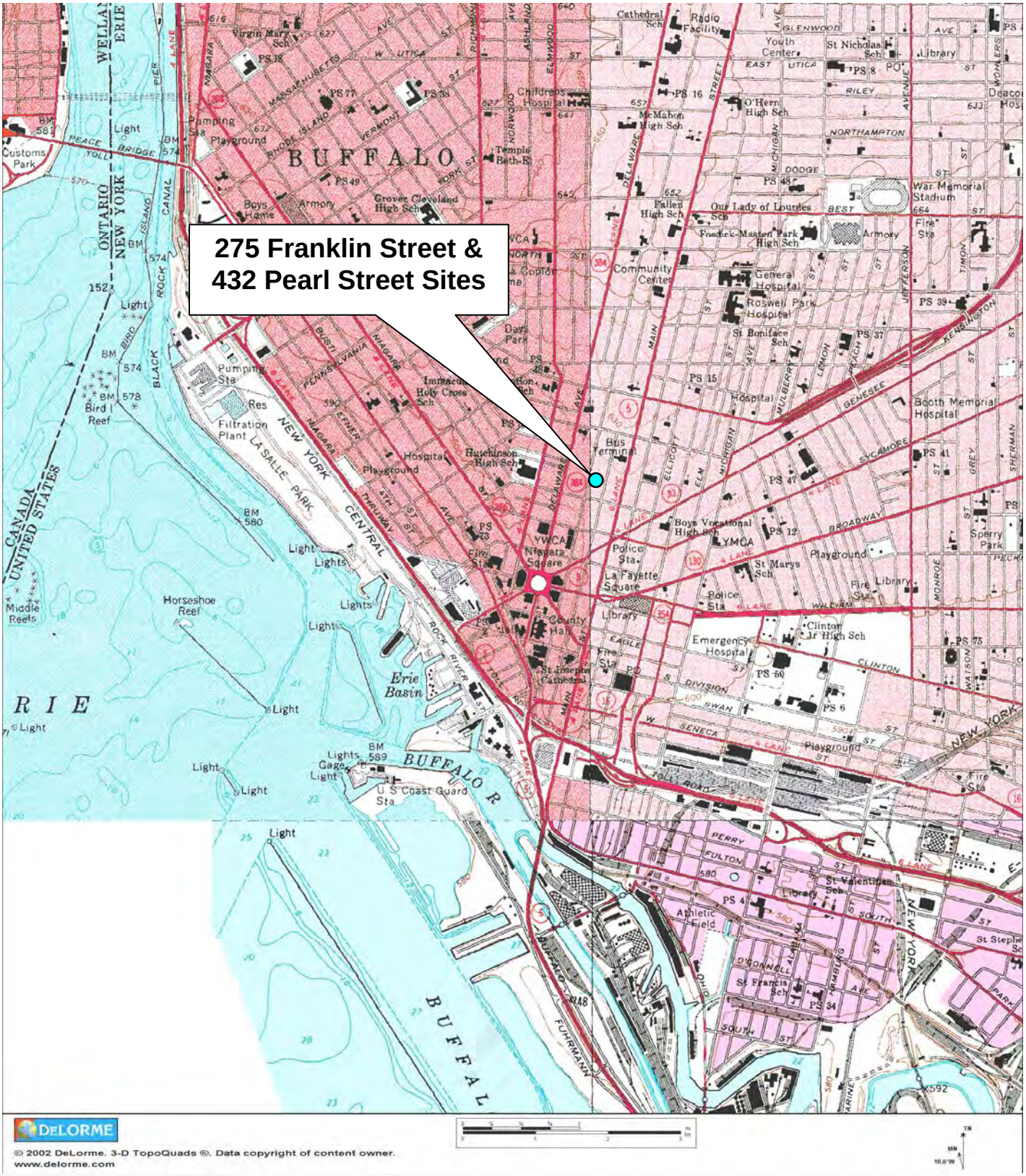
Remedial Investigation Report
Buffalo Development Corporation Site
Buffalo, New York

Remedial Alternative	Estimated Cost
No Further Action (Cost of completed IRM)	**$350,000**
IRM and Implementation of Site Management Plan (SMP) (Cost of completed IRM, Groundwater Treatment, Soil Cover, Soil Vapor Mitigation, SMP and future O&M)	**$711,749**
Unrestricted Use Cleanup (Cost of completed IRM, plus unrestricted use cleanup and future O&M)	**$1,535,138**

FIGURES

F:\CAD\Benchmark\Buffalo Development Corp\275 Franklin Street Site\RI-AA-IRM Report (July 2013)\Figure 1; Site Location and Vicinity Map (July 2013).dwg

FIGURE 1



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PROJECT NO.: 0156-001-102

DATE: JULY 2013

DRAFTED BY: BCH

SITE LOCATION AND VICINITY MAP

RI-AA-IRM REPORT

275 FRANKLIN STREET & 432 PEARL STREET SITES
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F:\CAD\Benchmark\Buffalo Development Corp\275 Franklin Street Site\RI-AA-IRM Report (July 2013)\Figure 2; Site Plan (July 2013).dwg

LEGEND:

- 275 FRANKLIN STREET BCP SITE
- 432 PEARL STREET BCP SITE
- EXISTING BUILDING
- PARCEL LINE
- FENCE

DATE: JULY 2013
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SITE PLAN

RI-AA-IRM REPORT

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FIGURE 2

F:\CAD\Benchmark\Buffalo Development Corp\275 Franklin Street Site\RI-AA-IRM Report (July 2013)\Figure 3; Sampling Locations (July 2013).dwg

LEGEND:

- 275 FRANKLIN STREET BCP SITE
- 432 PEARL STREET BCP SITE
- EXISTING BUILDING
- PARCEL LINE
- FENCE
- HISTORIC SOIL BORING (4) (Nature's Way, September 2004)
- SB-1 SOIL BORING (13)
- AIR SGV-1 SOIL VAPOR SAMPLE (5)
- MW-5 SHALLOW MONITORING WELL (1)
- MW-1 INTERMEDIATE MONITORING WELL (3)
- MW-4 DEEP MONITORING WELL (2)
- PZ-1 SHALLOW PIEZOMETER (14)
- BMW-3 ABANDONED TEMP. MONITORING WELL (2) (Nature's Way, Sept. 2004)
- MW-21S OFF-SITE SHALLOW MONITORING WELL (4) (NYSDEC, July 2009)
- MW-21D OFF-SITE DEEP MONITORING WELL (4) (NYSDEC, July 2009)
- MW-25S OFF-SITE SHALLOW MONITORING WELL (3) (NYSDEC, September 2012)

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SAMPLING LOCATIONS

RI-AA-IRM REPORT

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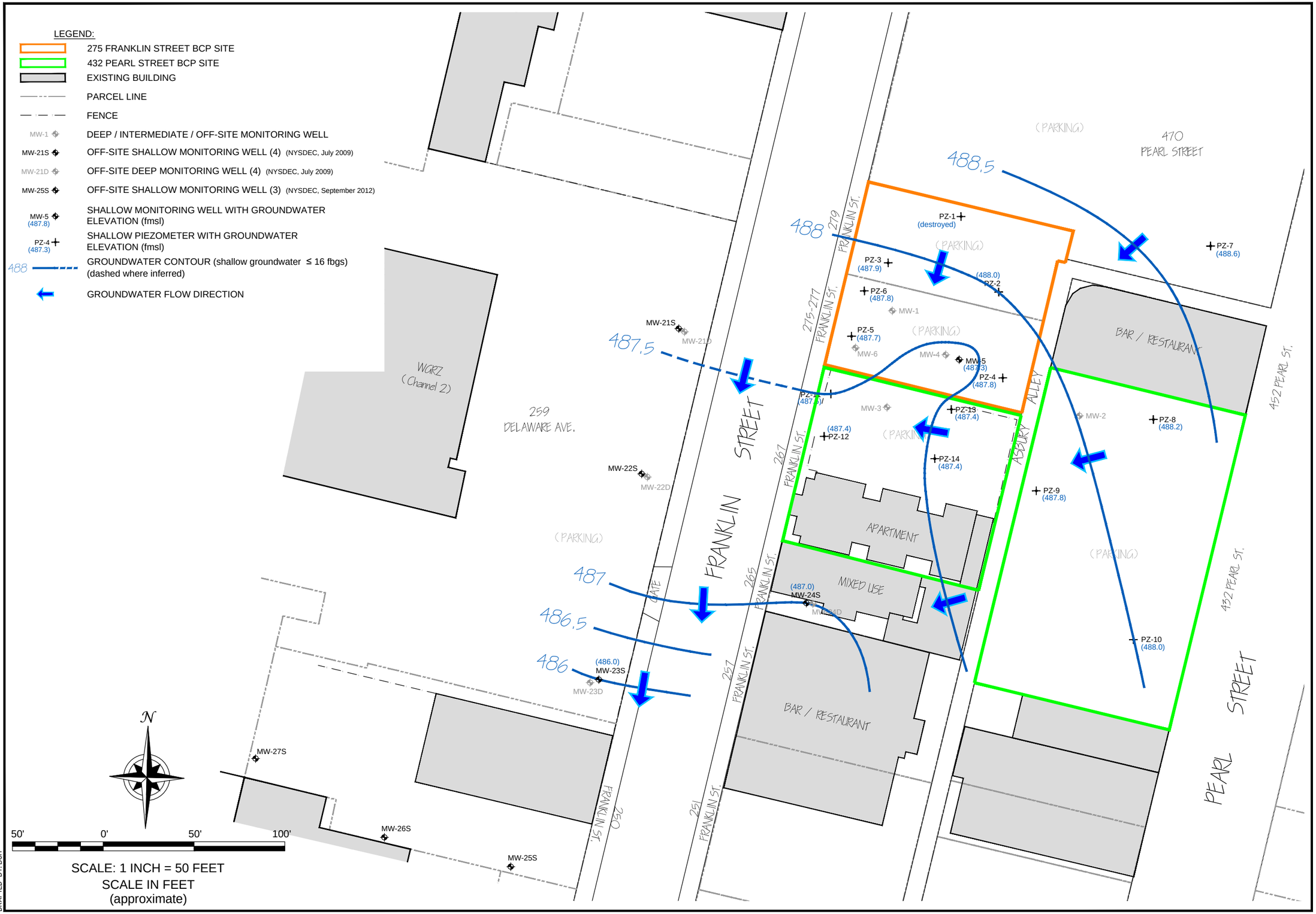
FIGURE 3

F:\CAD\Benchmark\Buffalo Development Corp\275 Franklin Street Site\RI-AA-IRM Report (July 2013)\Figure 4; Shallow GW Isopotential Map - June 2012 (July 2013).dwg

LEGEND:

- 275 FRANKLIN STREET BCP SITE
- 432 PEARL STREET BCP SITE
- EXISTING BUILDING
- PARCEL LINE
- FENCE
- MW-1 — DEEP / INTERMEDIATE / OFF-SITE MONITORING WELL
- MW-21S — OFF-SITE SHALLOW MONITORING WELL (4) (NYSDEC, July 2009)
- MW-21D — OFF-SITE DEEP MONITORING WELL (4) (NYSDEC, July 2009)
- MW-25S — OFF-SITE SHALLOW MONITORING WELL (3) (NYSDEC, September 2012)
- MW-5 (487.8) — SHALLOW MONITORING WELL WITH GROUNDWATER ELEVATION (fmsl)
- PZ-4 (487.3) — SHALLOW PIEZOMETER WITH GROUNDWATER ELEVATION (fmsl)
- 488 — GROUNDWATER CONTOUR (shallow groundwater ≤ 16 fbgs) (dashed where inferred)
- GROUNDWATER FLOW DIRECTION



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SHALLOW GROUNDWATER ISOPOTENTIAL MAP - JUNE 2012

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FIGURE 4

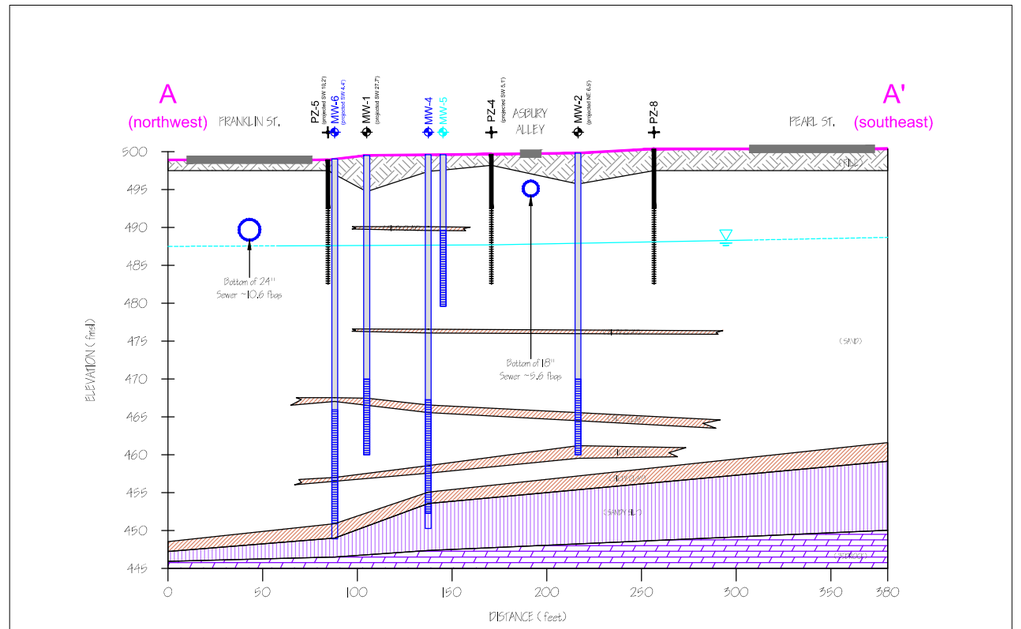
LEGEND:

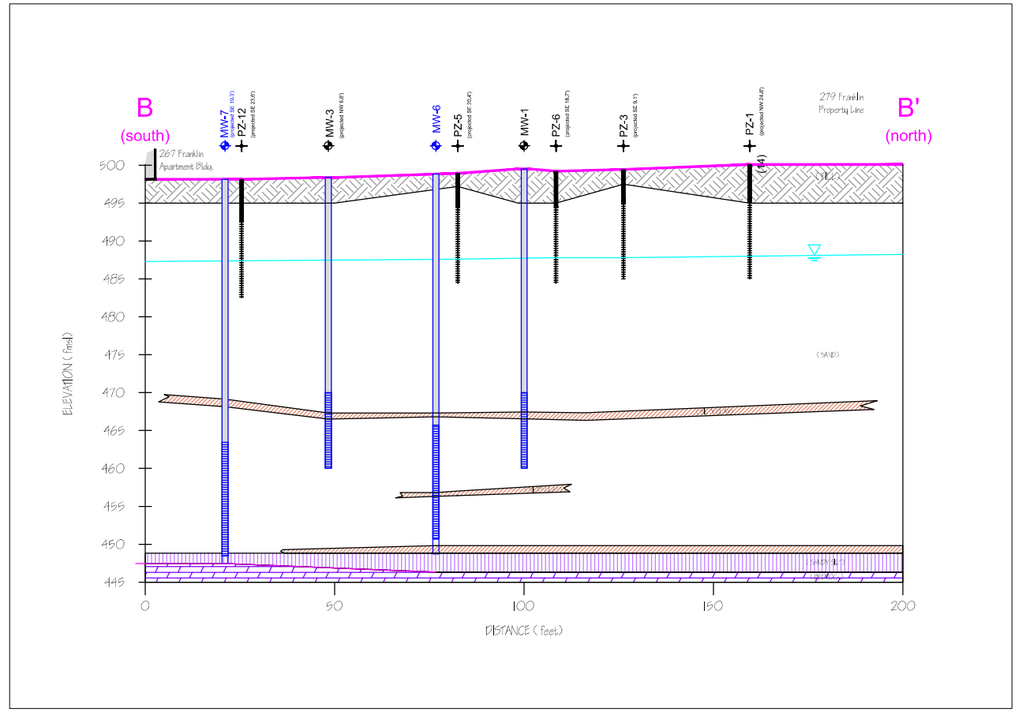
- 275 FRANKLIN STREET BCP SITE
- 432 PEARL STREET BCP SITE
- EXISTING BUILDING
- PARCEL LINE
- FENCE
- MW-5 — SHALLOW MONITORING WELL (1)
- MW-1 — INTERMEDIATE MONITORING WELL (3)
- MW-4 — DEEP MONITORING WELL (2)
- PZ-1 — SHALLOW PIEZOMETER (14)

N

60' 0' 60' 120'

SCALE: 1 INCH = 60 FEET
SCALE IN FEET
(approximate)





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GEOLOGIC CROSS SECCTIONS A & B

RI-AA-IRM REPORT

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FIGURE 5

DATE: JULY 2013
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F:\CAD\Benchmark\Buffalo Development Corp\275 Franklin Street Site\RI-AA-IRM Report (July 2013)\Figure 5; Geologic Cross-Sections A & B (July 2013).dwg

F:\CAD\Benchmark\Buffalo Development Corp\275 Franklin Street Site\RI-AA-IRM Report (July 2013)\Figure 6, IRM HRC Injection Points (July 2013).dwg

LEGEND:

- 275 FRANKLIN STREET BCP SITE
- 432 PEARL STREET BCP SITE
- EXISTING BUILDING
- PARCEL LINE
- FENCE
- HISTORIC SOIL BORING (4) (Nature's Way, September 2004)
- SB-1 SOIL BORING (13)
- AIR SGV-1 SOIL VAPOR SAMPLE (5)
- MW-5 SHALLOW MONITORING WELL (1)
- MW-1 INTERMEDIATE MONITORING WELL (3)
- MW-4 DEEP MONITORING WELL (2)
- PZ-1 SHALLOW PIEZOMETER (14)
- BMW-3 ABANDONED TEMP. MONITORING WELL (2) (Nature's Way, Sept. 2004)
- MW-21S OFF-SITE SHALLOW MONITORING WELL (4) (NYSDEC, July 2009)
- MW-21D OFF-SITE DEEP MONITORING WELL (4) (NYSDEC, July 2009)
- MW-25S OFF-SITE SHALLOW MONITORING WELL (3) (NYSDEC, September 2012)
- PZ-1 (1.0' - 4.0') / PCE = 44 ug/kg — SOIL SAMPLE LOCATION WITH SAMPLE DEPTH (fbgs) & PCE CONCENTRATION (ug/kg)
- MW-21D (18'-20') / PCE = 18 J ug/kg — NYSDEC SOIL SAMPLE LOCATION WITH SAMPLE DEPTH (fbgs) & PCE CONCENTRATION (ug/kg)

Note:
1. NYSDEC soil data obtained from *Immediate Investigation Work Assignment Summary Report*, 275 Franklin Street, Buffalo, NY, December 2009.

MW-1 (6.0' - 10.0') / PCE = 130 ug/kg
PZ-6 (6.0' - 8.0') / PCE = 10 ug/kg
PZ-3 (2.0' - 4.0') / PCE = 42 ug/kg
PZ-1 (1.0' - 4.0') / PCE = 44 ug/kg
B-3 (10.0' - 12.0') / PCE = 12,700 ug/kg
PZ-2 (6.0' - 8.0') / PCE = 6 ug/kg
PZ-5 (8.0' - 9.0') / PCE = 15 ug/kg
MW-21D (18'-20') / PCE = ND ug/kg
MW-21D (44'-46') / PCE = ND ug/kg
PZ-7 (2.0' - 4.0') / PCE = ND
PZ-4 (6.0' - 8.0') / PCE = 18 ug/kg
MW-6 (PCE ug/Kg) / (4.0-6.0) - 870 / (8.0-10.0) - 2,200,000 / (10.0-12.0) - 350,000
MW-22D (18'-20') / PCE = ND ug/kg
MW-22D (44'-46') / PCE = ND ug/kg
MW-3 (6.0' - 8.0') / PCE = 78 ug/kg
MW-23D (18'-20') / PCE = 18 J ug/kg
MW-23D (44'-46') / PCE = ND ug/kg
MW-24D (10'-12') / PCE = 330 ug/kg
MW-24D (44'-46') / PCE = ND ug/kg
B-5 (10.0' - 12.0') / PCE = 671 ug/kg
MW-4 (PCE ug/Kg) / (4.0-6.0) - 1,600 / (8.0-10.0) - 20,000 / (10.0-12.0) - 4,100
PZ-9 (2.0' - 4.0') / PCE = ND
PZ-8 (1.0' - 4.0') / PCE = ND
MW-2 (2.0' - 6.0') / PCE = 5 J ug/kg
PZ-10 (4.0' - 8.0') / PCE = ND

FRANKLIN STREET
279 FRANKLIN ST.
277 FRANKLIN ST.
275 FRANKLIN ST.
267 FRANKLIN ST.
265 FRANKLIN ST.
257 FRANKLIN ST.
259 DELAWARE AVE.
452 PEARL ST.
PEARL ST.
ASBURY ALLEY
GATE
(PARKING)
BAR / RESTAURANT
APARTMENT
MIXED USE
WGRZ

N

50' 0' 50' 100'

SCALE: 1 INCH = 50 FEET
SCALE IN FEET
(approximate)

DATE: JULY 2013
DRAFTED BY: BCH

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JOB NO.: 0156-001-102

PRE-IRM PCE IN SOIL

RI-AA-IRM REPORT

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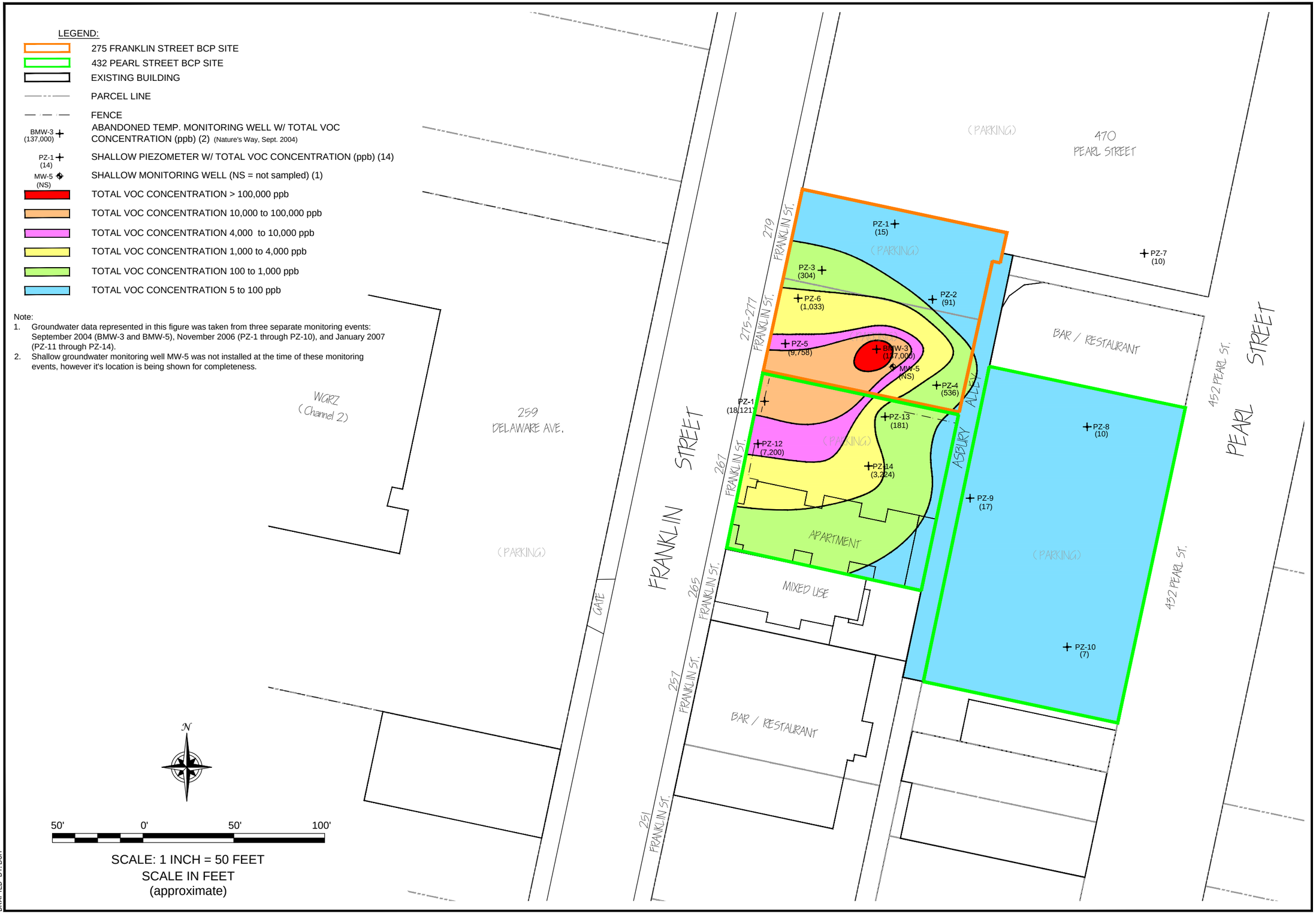
FIGURE 6

F:\CAD\BenchmarkBuffalo Development Corp\275 Franklin Street Site\RI-AA-IRM Report (July 2013)\Figure 7- Pre-IRM Total VOCs in Shallow GW Isoconcentration Map (July 2013).dwg

LEGEND:

- 275 FRANKLIN STREET BCP SITE
- 432 PEARL STREET BCP SITE
- EXISTING BUILDING
- PARCEL LINE
- FENCE
- BMW-3 (137,000) — ABANDONED TEMP. MONITORING WELL W/ TOTAL VOC CONCENTRATION (ppb) (2) (Nature's Way, Sept. 2004)
- PZ-1 (14) — SHALLOW PIEZOMETER W/ TOTAL VOC CONCENTRATION (ppb) (14)
- MW-5 (NS) — SHALLOW MONITORING WELL (NS = not sampled) (1)
- TOTAL VOC CONCENTRATION > 100,000 ppb
- TOTAL VOC CONCENTRATION 10,000 to 100,000 ppb
- TOTAL VOC CONCENTRATION 4,000 to 10,000 ppb
- TOTAL VOC CONCENTRATION 1,000 to 4,000 ppb
- TOTAL VOC CONCENTRATION 100 to 1,000 ppb
- TOTAL VOC CONCENTRATION 5 to 100 ppb

Note:
1. Groundwater data represented in this figure was taken from three separate monitoring events: September 2004 (BMW-3 and BMW-5), November 2006 (PZ-1 through PZ-10), and January 2007 (PZ-11 through PZ-14).
2. Shallow groundwater monitoring well MW-5 was not installed at the time of these monitoring events, however it's location is being shown for completeness.



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PRE-IRM TOTAL VOCs IN SHALLOW GROUNDWATER ISOCONCENTRATION MAP

RI-AA-IRM REPORT

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FIGURE 7

F:\CAD\Benchmark\Buffalo Development Corp\275 Franklin Street Site\RI-AA-IRM Report (July 2013)\Figure 8; Pre-IRM PCE in Shallow GW Isoconcentration Map (July 2013).dwg

LEGEND:

- 275 FRANKLIN STREET BCP SITE
- 432 PEARL STREET BCP SITE
- EXISTING BUILDING
- PARCEL LINE
- FENCE
- BMW-3 (137,000) — ABANDONED TEMP. MONITORING WELL W/ PCE CONCENTRATION (ppb) (2) (Nature's Way, Sept. 2004)
- PZ-1 (14) — SHALLOW PIEZOMETER W/ PCE CONCENTRATION (ppb) (14)
- MW-5 (NS) — SHALLOW MONITORING WELL (NS = not sampled) (1)
- TOTAL PCE CONCENTRATION > 100,000 ppb
- TOTAL PCE CONCENTRATION 10,000 to 100,000 ppb
- TOTAL PCE CONCENTRATION 4,000 to 10,000 ppb
- TOTAL PCE CONCENTRATION 1,000 to 4,000 ppb
- TOTAL PCE CONCENTRATION 100 to 1,000 ppb
- TOTAL PCE CONCENTRATION 5 to 100 ppb

Note:
1. Groundwater data represented in this figure was taken from three separate monitoring events: September 2004 (BMW-3 and BMW-5), November 2006 (PZ-1 through PZ-10), and January 2007 (PZ-11 through PZ-14).
2. Shallow groundwater monitoring well MW-5 was not installed at the time of these monitoring events, however it's location is being shown for completeness.

SCALE: 1 INCH = 50 FEET
SCALE IN FEET
(approximate)

DATE: JULY 2013
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PRE-IRM PCE IN SHALLOW GROUNDWATER ISOCONCENTRATION MAP

RI-AA-IRM REPORT

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FIGURE 8

F:\CAD\Benchmark\Buffalo Development Corp\275 Franklin Street Site\RI-AA-IRM Report (July 2013)\Figure 9; Pre-IRM TCE in Shallow GW Isoconcentration Map (July 2013).dwg

LEGEND:

- 275 FRANKLIN STREET BCP SITE
- 432 PEARL STREET BCP SITE
- EXISTING BUILDING
- PARCEL LINE
- FENCE
- BMW-3 (137,000) — ABANDONED TEMP. MONITORING WELL W/ TCE CONCENTRATION (ppb) (2) (Nature's Way, Sept. 2004)
- PZ-1 (14) — SHALLOW PIEZOMETER W/ TCE CONCENTRATION (ppb) (14)
- MW-5 (NS) — SHALLOW MONITORING WELL (NS = not sampled) (1)
- TOTAL TCE CONCENTRATION > 100,000 ppb
- TOTAL TCE CONCENTRATION 10,000 to 100,000 ppb
- TOTAL TCE CONCENTRATION 4,000 to 10,000 ppb
- TOTAL TCE CONCENTRATION 1,000 to 4,000 ppb
- TOTAL TCE CONCENTRATION 100 to 1,000 ppb
- TOTAL TCE CONCENTRATION 5 to 100 ppb

Note:
1. Groundwater data represented in this figure was taken from three separate monitoring events: September 2004 (BMW-3 and BMW-5), November 2006 (PZ-1 through PZ-10), and January 2007 (PZ-11 through PZ-14).
2. Shallow groundwater monitoring well MW-5 was not installed at the time of these monitoring events, however it's location is being shown for completeness.

N

50' 0' 50' 100'

SCALE: 1 INCH = 50 FEET
SCALE IN FEET
(approximate)

DATE: APRIL 2010
DRAFTED BY: BCH

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JOB NO.: 0156-001-102

PRE-IRM TCE IN SHALLOW GROUNDWATER ISOCONCENTRATION MAP

RI-AA-IRM REPORT

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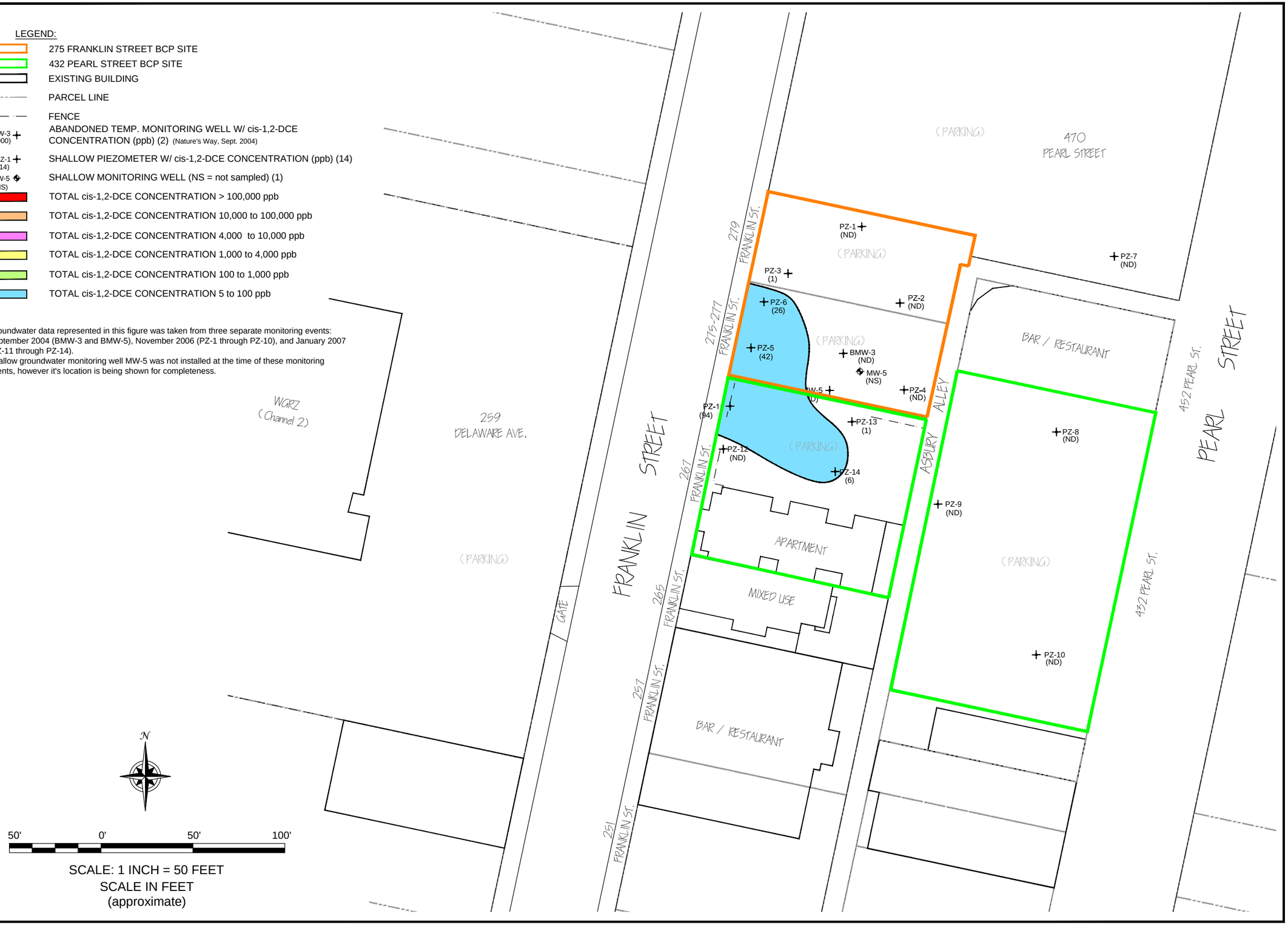
FIGURE 9

F:\CAD\Benchmark\Buffalo Development Corp\275 Franklin Street Site\RI-AA-IRM Report (July 2013)\Figure 10; Pre-IRM cis-1,2-DCE in Shallow GW Isoconcentration Map (July 2013).dwg

LEGEND:

- 275 FRANKLIN STREET BCP SITE
- 432 PEARL STREET BCP SITE
- EXISTING BUILDING
- PARCEL LINE
- FENCE
- BMW-3 (137,000) — ABANDONED TEMP. MONITORING WELL W/ cis-1,2-DCE CONCENTRATION (ppb) (2) (Nature's Way, Sept. 2004)
- PZ-1 (14) — SHALLOW PIEZOMETER W/ cis-1,2-DCE CONCENTRATION (ppb) (14)
- MW-5 (NS) — SHALLOW MONITORING WELL (NS = not sampled) (1)
- TOTAL cis-1,2-DCE CONCENTRATION > 100,000 ppb
- TOTAL cis-1,2-DCE CONCENTRATION 10,000 to 100,000 ppb
- TOTAL cis-1,2-DCE CONCENTRATION 4,000 to 10,000 ppb
- TOTAL cis-1,2-DCE CONCENTRATION 1,000 to 4,000 ppb
- TOTAL cis-1,2-DCE CONCENTRATION 100 to 1,000 ppb
- TOTAL cis-1,2-DCE CONCENTRATION 5 to 100 ppb

Note:
1. Groundwater data represented in this figure was taken from three separate monitoring events: September 2004 (BMW-3 and BMW-5), November 2006 (PZ-1 through PZ-10), and January 2007 (PZ-11 through PZ-14).
2. Shallow groundwater monitoring well MW-5 was not installed at the time of these monitoring events, however it's location is being shown for completeness.



DATE: JULY 2013
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JOB NO.: 0156-001-102

PRE-IRM cis-1,2-DCE IN SHALLOW GROUNDWATER ISOCONCENTRATION MAP

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FIGURE 10

F:\CAD\Benchmark\Buffalo Development Corp\275 Franklin Street Site\RI-AA-IRM Report (July 2013)\Figure 11 - Pre-IRM PCE in GW Deep Isoconcentration Map (July 2013).dwg

LEGEND:

- 275 FRANKLIN STREET BCP SITE
- 432 PEARL STREET BCP SITE
- EXISTING BUILDING
- PARCEL LINE
- FENCE
- MW-1 (64) — INTERMEDIATE MONITORING WELL W/ PCE CONCENTRATION (ppb) (3)
- MW-4 (NS) — DEEP MONITORING WELL (NS = not sampled) (2)
- TOTAL PCE CONCENTRATION > 100,000 ppb
- TOTAL PCE CONCENTRATION 10,000 to 100,000 ppb
- TOTAL PCE CONCENTRATION 4,000 to 10,000 ppb
- TOTAL PCE CONCENTRATION 1,000 to 4,000 ppb
- TOTAL PCE CONCENTRATION 100 to 1,000 ppb
- TOTAL PCE CONCENTRATION 5 to 100 ppb

Note:
1. Groundwater data represented in this figure was taken from three separate monitoring events: September 2004 (BMW-3 and BMW-5), November 2006 (PZ-1 through PZ-10), and January 2007 (PZ-11 through PZ-14).
2. Shallow groundwater monitoring well MW-5 was not installed at the time of these monitoring events, however it's location is being shown for completeness.

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PRE-IRM PCE IN INTERMEDIATE / DEEP GROUNDWATER ISOCONCENTRATION MAP

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FIGURE 11

F:\CAD\Benchmark\Buffalo Development Corp\275 Franklin Street Site\RI-AA-IRM Report (July 2013)\Figure 12; Chlorinated VOCs in Soil Vapor (July 2013).dwg

LEGEND:

- 275 FRANKLIN STREET BCP SITE
- 432 PEARL STREET BCP SITE
- EXISTING BUILDING
- PARCEL LINE
- FENCE
- SOIL VAPOR SAMPLE (5)
- cVOCs IN SOIL VAPOR (ug/m³)
- cVOCs IN SOIL VAPOR (NYSDEC) (ug/m³)

Note:
1. NYSDEC pre- and post-Active Subslab Depressurization (ASD) system soil vapor data obtained from *Immediate Investigation Work Assignment Summary Report*, 275 Franklin Street, Buffalo, NY, December 2009.

267 FRANKLIN STREET
Pre-ASD System
(October 29, 2008)

Outdoor Air:
TCE = 0.21 ug/m³
PCE = 12 J ug/m³

Subslab Air Sample:
cis-1,2-DCE = 0.81 J ug/m³
TCE = 17 ug/m³
PCE = 340 ug/m³

Basement 1 Boiler Room Indoor Air:
cis-1,2-DCE = 20 ug/m³
TCE = 13 ug/m³
PCE = 1200 ug/m³

Basement 2 Indoor Air:
cis-1,2-DCE = 12 ug/m³
TCE = 7 ug/m³
PCE = 670 ug/m³

Basement 3 Indoor Air:
cis-1,2-DCE = 18 ug/m³
TCE = 11 ug/m³
PCE = 900 ug/m³

267 FRANKLIN STREET
Pre-ASD System
(February 24, 2009)

Outdoor Air:
Total cVOCs = ND ug/m³

Subslab Air Sample:
TCE = 1.9 ug/m³
PCE = 18 ug/m³

Basement 1 Boiler Room Indoor Air:
TCE = 0.26 ug/m³
PCE = 19 ug/m³

Basement 2 Indoor Air:
cis-1,2-DCE = 0.72 ug/m³
TCE = 0.8 ug/m³
PCE = 97 ug/m³

Basement 3 Indoor Air:
cis-1,2-DCE = 1.4 ug/m³
TCE = 1.4 ug/m³
PCE = 180 ug/m³

267 FRANKLIN STREET
Post-ASD System
(September 15, 2009)

Outdoor Air:
Total cVOCs = ND ug/m³

Subslab Air Sample:
Not Analyzed

Basement 1 Boiler Room Indoor Air:
PCE = 0.81 ug/m³

Basement 2 Indoor Air:
TCE = 0.094 ug/m³
PCE = 4 ug/m³

Basement 3 Indoor Air:
PCE = 0.76 ug/m³

265 FRANKLIN STREET
Pre-ASD System
(May 28, 2008)

Outdoor Air:
Total cVOCs = ND ug/m³

First Floor Indoor Air:
TCE = 1.1 ug/m³
PCE = 93 ug/m³

Crawl Space Indoor Air:
TCE = 0.26 ug/m³
PCE = 20 ug/m³

AIR
TCE = 70 ug/m³
PCE = 14,000 ug/m³

AIR
PCE = 140 ug/m³

SGV-3
PCE = 21 ug/m³

SGV-2
PCE = 21 ug/m³

SGV-1
ND

259 DELAWARE AVE.
279 FRANKLIN ST.
275-277 FRANKLIN ST.
267 FRANKLIN ST.
265 FRANKLIN ST.
257 FRANKLIN ST.
251 FRANKLIN ST.
250 FRANKLIN ST.
FRANKLIN STREET
470 PEARL STREET
452 PEARL ST.
432 PEARL ST.
PEARL STREET
ALLEY
GATE
(PARKING)
BAR / RESTAURANT
APARTMENT
MIXED USE

N

50' 0' 50' 100'

SCALE: 1 INCH = 50 FEET
SCALE IN FEET
(approximate)

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cVOCs IN SOIL VAPOR

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FIGURE 12

F:\CAD\Benchmark\Buffalo Development Corp\275 Franklin Street Site\RI-AA-IRM Report (July 2013)\Figure 13; IRM SVE System Layout (July 2013).dwg

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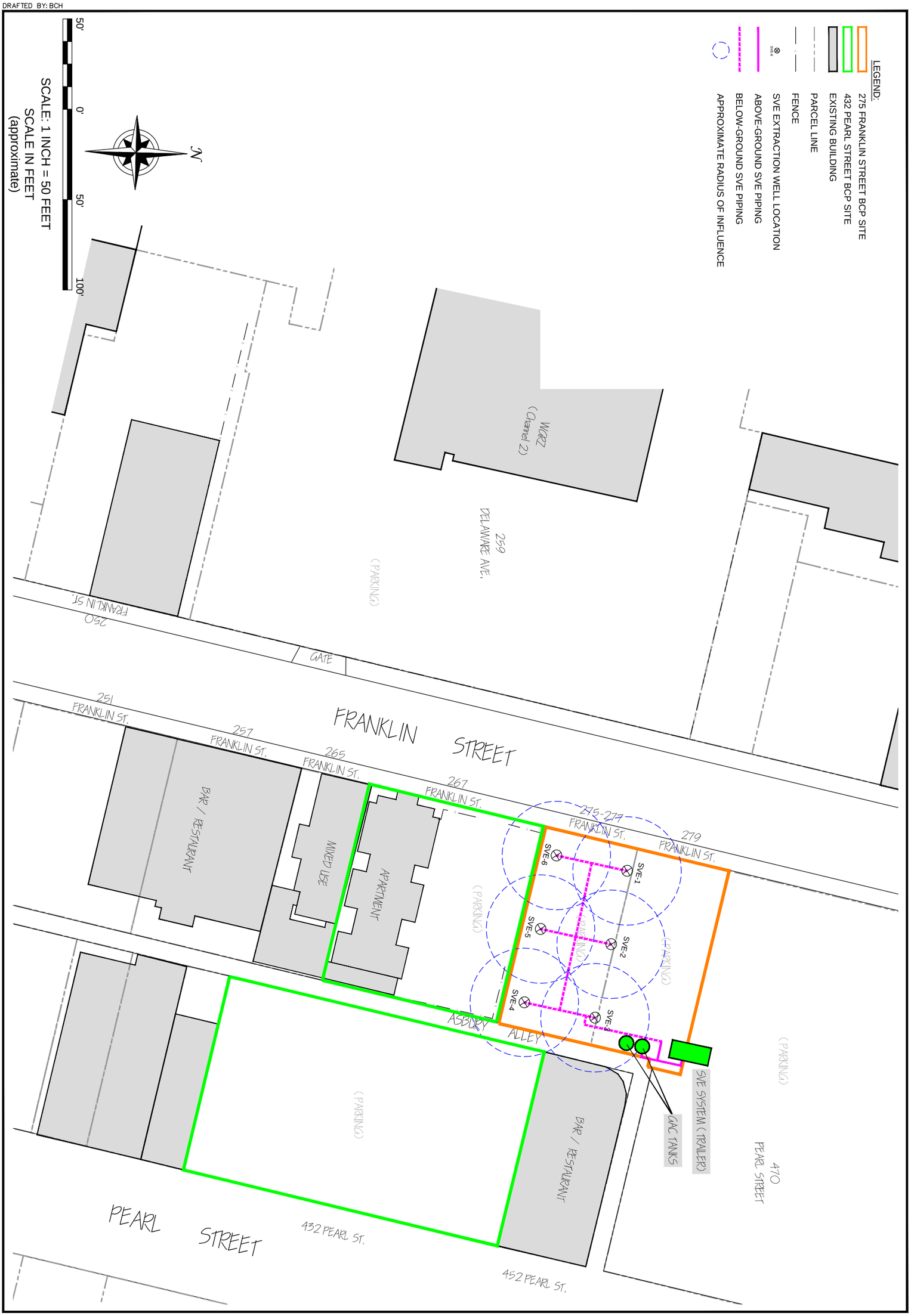

FIGURE 13

IRM SVE SYSTEM LAYOUT

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F:\CAD\Benchmark\Buffalo Development Corp\275 Franklin Street Site\RI-AA-IRM Report (July 2013)\Figure 14; IRM HRC Injection Points (July 2013).dwg

LEGEND:

- 275 FRANKLIN STREET BCP SITE
- 432 PEARL STREET BCP SITE
- EXISTING BUILDING
- PARCEL LINE
- FENCE
- MW-5 ON-SITE SHALLOW MONITORING WELL
- PZ-1 ON-SITE SHALLOW PIEZOMETER
- MW-21S OFF-SITE NYSDEC SHALLOW MONITORING WELL
- MW-21D OFF-SITE NYSDEC DEEP MONITORING WELL
- HRC INJECTION LOCATION - AREA 1 (14)
- HRC INJECTION LOCATION - AREA 2 (21)

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IRM HRC INJECTION POINTS

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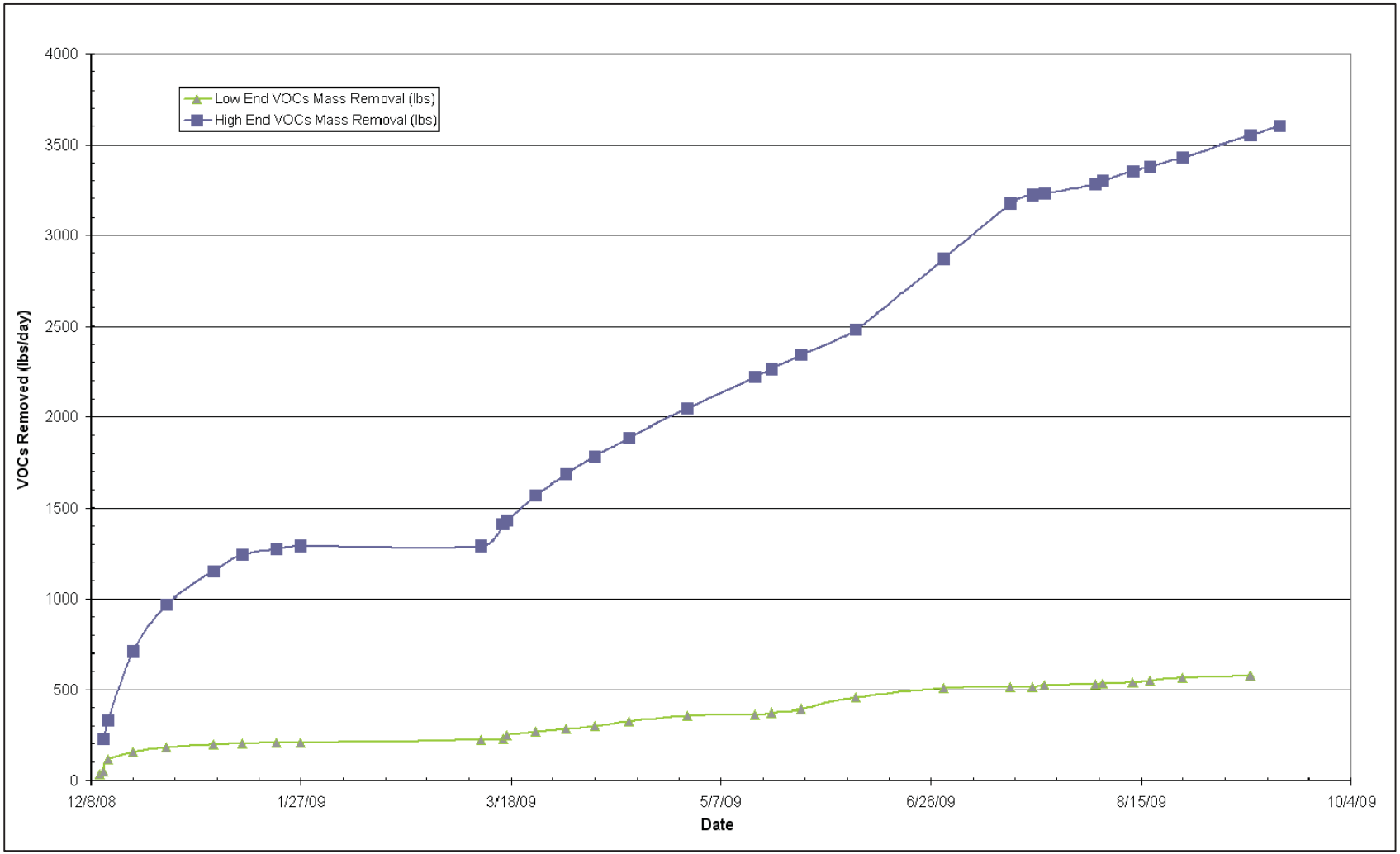
FIGURE 14

F:\CAD\Benchmark\Buffalo Development Corp\275 Franklin Street Site\RI-AA-IRM Report (April 2010)\Figure 15; SVE System Performance.dwg



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SVE SYSTEM PERFORMANCE

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FIGURE 15

F:\CAD\Benchmark\Buffalo Development Corp\275 Franklin Street Site\RI-AA-IRM Report (July 2013)\Figure 16; Post-IRM Total cVOCs in Shallow GW Isoconcentration Map (July 2013).dwg

LEGEND:

- 275 FRANKLIN STREET BCP SITE
- 432 PEARL STREET BCP SITE
- EXISTING BUILDING
- PARCEL LINE
- FENCE
- PZ-1 (14) — SHALLOW PIEZOMETER W/ TOTAL cVOC CONCENTRATION (ppb)
- MW-5 (25,000) — SHALLOW WELL W/ TOTAL cVOC CONCENTRATION (ppb)
- MW-21S (ND) — OFF-SITE NYSDEC SHALLOW WELL W/ TOTAL cVOC CONCENTRATION (ppb)
- TOTAL cVOC CONCENTRATION > 100,000 ppb
- TOTAL cVOC CONCENTRATION 10,000 to 100,000 ppb
- TOTAL cVOC CONCENTRATION 4,000 to 10,000 ppb
- TOTAL cVOC CONCENTRATION 1,000 to 4,000 ppb
- TOTAL cVOC CONCENTRATION 100 to 1,000 ppb
- TOTAL cVOC CONCENTRATION 5 to 100 ppb
- INSUFFICIENT DATA; DASHED WHERE INFERRED

Note:

1. Piezometer PZ-1 was destroyed prior to the June 2012 event; therefore it was not sampled. The analytical result shown is from the June 2011 event.
2. Groundwater data shown in this figure for all on-site piezometers and shallow monitoring wells as well as off-site NYSDEC shallow wells MW-23S and MW-24S was taken from Benchmark's June 2012 Post-IRM groundwater monitoring event .
3. Wells MW-21 (S/D), MW-22 (S/D), and MW-23D were not sampled during the June 2012 event as all VOCs were reported as non-detect during the NYSDEC June 2011off-site groundwater monitoring event. These wells are all shown as non-detect (or ND) in the figure.
4. Groundwater data shown at off-site NYSDEC shallow groundwater wells MW-25S, MW-26S, and MW-27S were obtained from the NYSDEC's IRM October 2012 groundwater monitoring event and are included per their request.
5. See Table 10 for the groundwater data shown in this figure.

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POST-IRM TOTAL cVOCS IN SHALLOW GROUNDWATER ISOCONCENTRATION MAP - JUNE 2012

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FIGURE 16

F:\CAD\Benchmark\Buffalo Development Corp\275 Franklin Street Site\RI-AA-IRM Report (July 2013)\Figure 17- VOCs in Intermediate & Deep GW (July 2013).dwg

LEGEND:

- 275 FRANKLIN STREET BCP SITE
- 432 PEARL STREET BCP SITE
- EXISTING BUILDING
- PARCEL LINE
- FENCE
- MW-5 — SHALLOW MONITORING WELL (1)
- MW-1 — INTERMEDIATE MONITORING WELL (3)
- MW-4 — DEEP MONITORING WELL (2)
- PZ-1 — SHALLOW PIEZOMETER (14)
- MW-21S — OFF-SITE SHALLOW MONITORING WELL (4) (NYSDEC, July 2009)
- MW-21D — OFF-SITE DEEP MONITORING WELL (4) (NYSDEC, July 2009)
- MW-25S — OFF-SITE SHALLOW MONITORING WELL (3) (NYSDEC, September 2012)
- JUNE 2012 GROUNDWATER SAMPLE LOCATION & CONCENTRATION (ug/L)

MW-7	
1,2-DCE	ND
Carbon tetrachloride	ND
Chloroform	ND
cis-1,2-DCE	51
PCE	18
Toluene	ND
TCE	ND

Note:
1. Data shown for June 2011 provided by NYSDEC was non-detect for wells MW-21D, MW-22D, and MW-23D; therefore, these wells were not sampled during the June 2012 groundwater sampling event.

MW-6	
1,2-DCE	ND
Carbon tetrachloride	ND
Chloroform	ND
cis-1,2-DCE	6
PCE	91
Toluene	ND
TCE	42

MW-1	
1,2-DCE	ND
Carbon tetrachloride	ND
Chloroform	ND
cis-1,2-DCE	5
PCE	62
Toluene	ND
TCE	0.71 J

MW-4	
1,2-DCE	ND
Carbon tetrachloride	ND
Chloroform	ND
cis-1,2-DCE	2.5
PCE	120 D
Toluene	ND
TCE	3.3

MW-21D
Non-Detect in June 2011
Not Sampled in June 2012

MW-22D
Non-Detect in June 2011
Not Sampled in June 2012

MW-23D
Non-Detect in June 2011
Not Sampled in June 2012

MW-24D	
1,2-DCE	ND
Carbon tetrachloride	ND
Chloroform	5.2
cis-1,2-DCE	100
PCE	1.1
Toluene	ND
TCE	ND

MW-2	
1,2-DCE	ND
Carbon tetrachloride	ND
Chloroform	ND
cis-1,2-DCE	ND
PCE	0.81 J
Toluene	ND
TCE	ND

MW-3	
1,2-DCE	ND
Carbon tetrachloride	ND
Chloroform	ND
cis-1,2-DCE	ND
PCE	1.1
Toluene	ND
TCE	ND

MW-7	
1,2-DCE	ND
Carbon tetrachloride	ND
Chloroform	ND
cis-1,2-DCE	51
PCE	18
Toluene	ND
TCE	ND

279 FRANKLIN ST.
275-277 FRANKLIN ST.
267 FRANKLIN ST.
265 FRANKLIN ST.
257 FRANKLIN ST.
251 FRANKLIN ST.
250 FRANKLIN ST.
FRANKLIN STREET
259 DELAWARE AVE.
470 PEARL STREET
452 PEARL ST.
432 PEARL ST.
ASBURY ALLEY
PEARL
WGRZ (Channel 2)
(PARKING)
BAR / RESTAURANT
APARTMENT
MIXED USE
GATE

N

50' 0' 50' 100'

SCALE: 1 INCH = 50 FEET
SCALE IN FEET
(approximate)

DATE: JANUARY 2013
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VOCs IN INTERMEDIATE & DEEP GROUNDWATER

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FIGURE 17

F:\CAD\Benchmark\Buffalo Development Corp\275 Franklin Street Site\RI-AA-IRM Report (July 2013)\Figure 18; Proposed Final GW Remedial Approach (July 2013).dwg

LEGEND:

- 275 FRANKLIN STREET BCP SITE
- 432 PEARL STREET BCP SITE
- EXISTING BUILDING
- PARCEL LINE
- FENCE
- PZ-1 ON-SITE PIEZOMETER
- MW-5 ON-SITE MONITORING WELL
- MW-21S MW-21D OFF-SITE MONITORING WELL
- MW-5 AREA IN-SITU GROUNDWATER TREATMENT
- DOWNGRADIENT IN-SITU GROUNDWATER TREATMENT AREA
- IRM TREATMENT AREA A (SHALLOW GROUNDWATER)
- IRM TREATMENT AREA B (SHALLOW GROUNDWATER)
- IRM TREATMENT AREA C (SHALLOW GROUNDWATER)

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PROPOSED FINAL GROUNDWATER REMEDIAL APPROACH

RI-AA-IRM REPORT

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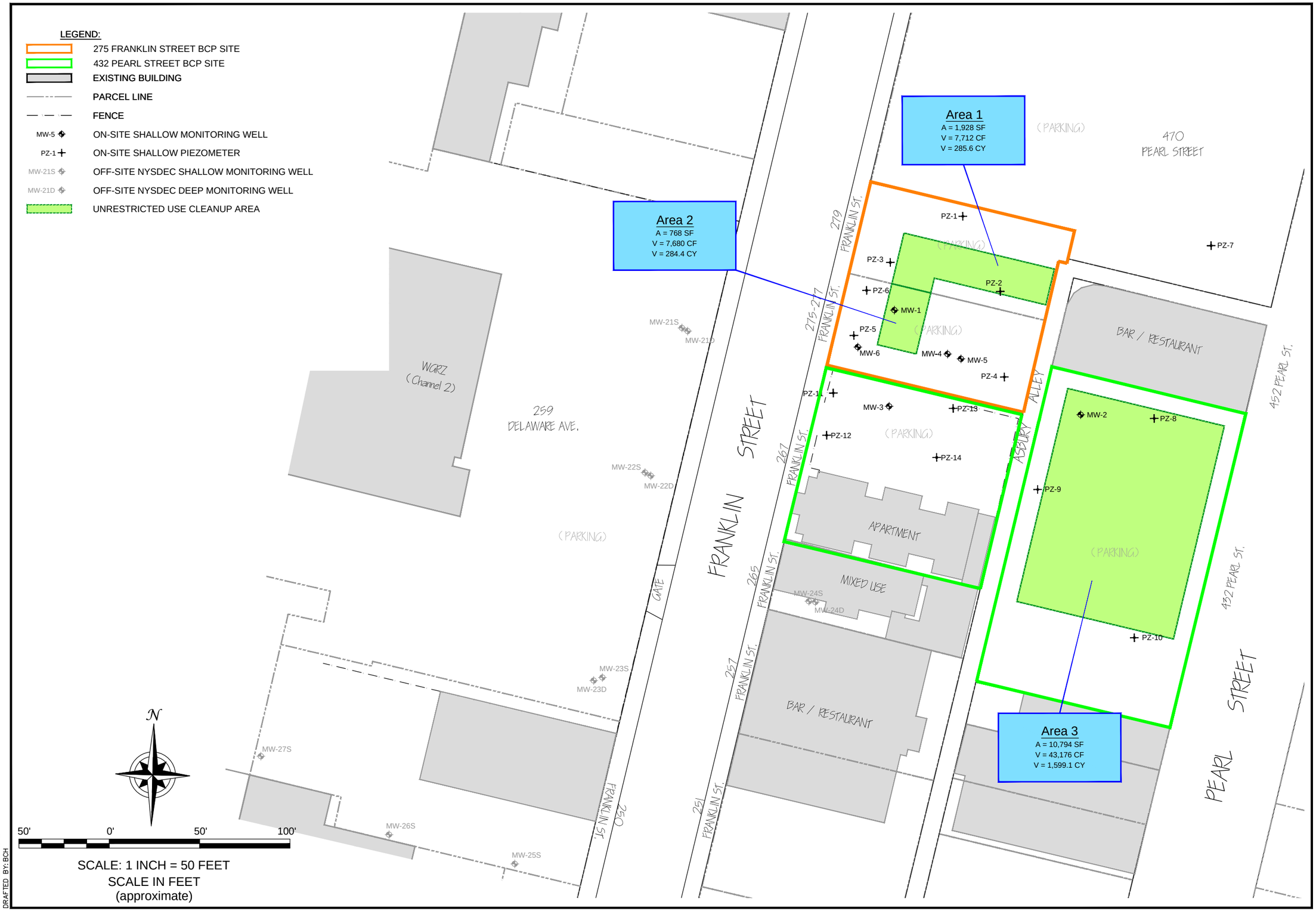
FIGURE 18

F:\CAD\Benchmark\Buffalo Development Corp\275 Franklin Street Site\RI-AA-IRM Report (July 2013)\Figure 19; Unrestricted-Use Remediation Areas (July 2013).dwg



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UNRESTRICTED-USE REMEDIATION AREAS

RI-AA-IRM REPORT
275 FRANKLIN STREET & 432 PEARL STREET SITES
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BUFFALO, NEW YORK
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FIGURE 19

APPENDIX A

PREVIOUS INVESTIGATION RESULTS

APPENDIX B

FIELD BOREHOLE LOGS & WELL COMPLETION DETAILS

APPENDIX C

GROUNDWATER DEVELOPMENT & SAMPLING FIELD FORMS

APPENDIX D

SUMMARY OF SLUG TEST EVALUATIONS

APPENDIX E

LABORATORY ANALYTICAL DATA PACKAGES

(CD ENCLOSED)

APPENDIX F

DATA USABILITY SUMMARY REPORT (DUSR)

APPENDIX G

LAND USE EVALUATION

APPENDIX G
LAND USE EVALUATION

NYSDEC's Part 375 regulations require that the reasonableness of the anticipated future land be factored into the evaluation of remedial alternatives. The regulations identify 16 criteria that must be considered. These criteria and the resultant outcome for the 275 Franklin Street & 432 Pearl Street Sites, located in Buffalo, New York, are presented below.

1. *Current use and historical and/or recent development patterns:* The 275 Franklin Street Site was a former retail drycleaning operation and 432 Pearl Street was former commercial use property, each located in a highly urbanized area in the City of Buffalo. The Sites are surrounded by a mix of commercial and residential parcels. The 275 Franklin Street Site is currently used as a surface parking lot. The 432 Pearl Street Site is currently used as a residential apartment building and parking lot. **Accordingly, restricted-residential and/or commercial site redevelopment would be consistent with current and historic site use.**

2. *Applicable zoning laws and maps:* The two BCP Sites are located in a Downtown Opportunity zone, in the City of Buffalo, which allows residential, office, limited retail, restaurant and entertainment uses. **Re-use in a restricted-residential and/or commercial capacity is therefore consistent with current zoning.**

3. *Brownfield opportunity areas as designated set forth in GML 970-r:* The Brownfield Opportunity Area (BOA) Program provides municipalities and community based organizations with assistance to complete revitalization plans and implementation strategies for areas or communities affected by the presence of brownfield sites, and site assessments for strategic sites. **The subject properties do not lie within a BOA.**

4. *Applicable comprehensive community master plans, local waterfront revitalization plans as provided for in EL article 42, or any other applicable land use plan formally adopted by a municipality:* The two BCP Sites are located in a Downtown Opportunity zone, in the City of Buffalo, which allows residential, office, limited retail, restaurant and entertainment uses. The Sites do not fall within the boundaries of the South Buffalo Redevelopment Plan or the City of Buffalo Local Waterfront Revitalization Program. **Sites outside of such designated revitalization or waterfront development areas are not as likely to require rezoning or change in use.**

APPENDIX G
LAND USE EVALUATION

5. *Proximity to real property currently used for residential use, and to urban, commercial, industrial, agricultural, and recreational areas:* Properties adjacent to and nearby the Sites include several commercial properties, including surface parking lots, restaurants, residential apartment buildings and a theatre, as well as one public service property. **Nearby and adjacent properties are mixed use, including commercial and restricted-residential. Re-use of the Sites in a commercial or restricted-residential capacity is consistent with surrounding property.**

6. *Any written and oral comments submitted by members of the public on the proposed use as part of the activities performed pursuant to the citizen participation plan:* **No comments have been received from the public relevant to Site use concerns.**

7. *Environmental justice concerns, which include the extent to which the proposed use may reasonably be expected to cause or increase a disproportionate burden on the community in which the site is located, including low-income minority communities, or to result in a disproportionate concentration of commercial or industrial uses in what has historically been a mixed use or residential community:* **Nearby and adjacent properties are predominantly used in a commercial and restricted-residential capacity. Maintaining use of the Sites in the same capacity does not pose environmental justice issues.**

8. *Federal or State land use designations:* The properties are designated Urban Land by the Soil Conservation Service. **Reuse in a restricted capacity is typical in urban areas where background conditions sometimes preclude achieving unrestricted use soil cleanup objectives.**

9. *Population growth patterns and projections:* The City of Buffalo, encompassing 40.6 square miles, has a population of 292,648 persons (2000 U.S. Census Bureau), a decrease of 35,527 from the 1990 U.S. census. A declining population indicates a surplus housing market**. Reuse of the Sites in a restricted-residential and/or commercial capacity does not materially affect opportunities for residential growth.**

10. *Accessibility to existing infrastructure:* The Sites are located in a highly urbanized area with Franklin Street, Pearl Street and Asbury Alley providing access to the Site. Utilities (sewer, water, gas, electric) are present along these neighboring streets**. Existing infrastructure supports reuse in a restricted-residential and/or commercial capacity**.

APPENDIX G
LAND USE EVALUATION

11. Proximity of the site to important cultural resources, including federal or State historic or heritage sites or Native American religious sites: **No such resources or sites are known to be present on or near the properties.**

12. *Natural resources, including proximity of the site to important federal, State or local natural resources, including waterways, wildlife refuges, wetlands, or critical habitats of endangered or threatened species:* The Erie County Internet Mapping System shows that State or Federal wetlands do not exist on the subject properties. Lake Erie is located approximately two miles west of the Sites. **The absence of significant ecological resources on or adjacent to the Sites indicates that cleanup to restricted use conditions will not pose an ecological threat.**

13. *Potential vulnerability of groundwater to contamination that might emanate from the site, including proximity to wellhead protection and groundwater recharge areas and other areas identified by the Department and the State's comprehensive groundwater remediation and protection program established set forth in ECL article 15 title 31:* Groundwater at the Sites is assigned Class "GA" by 6NYCRR Part 701.15. 19 groundwater monitoring wells exist on the Sites. Groundwater data obtained during the RI indicate residual impacts from volatile organic compounds (VOCs) across the Sites. There are no groundwater supply wells present on the Sites. Regionally, groundwater in the area has not been developed for industrial, agriculture, or public supply purposes. Potable water service is provided off-site and on-site by the local municipal water authority. **The absence of potable wells, wellhead protection and groundwater recharge areas indicates that cleanup to restricted use conditions will not pose a drinking water threat.**

14. *Proximity to flood plains:* The Erie County Internet Mapping System indicates that flood plains are not present on the property; therefore there is no risk of significant soil erosion due to flooding. **As such, cleanup to restricted-residential standards does not pose a threat to surface water.**

15. *Geography and geology:* The Sites are located within the Erie-Ontario lake plain physiographic province, which is typified by little topographic relief and gentle slope toward Lake Erie, except in the immediate vicinity of major drainage ways. Surface soils within the City are characterized as urban land with level to gently sloping land in which 80 percent or more of the soil surface is covered by asphalt, concrete, buildings, or other impervious structures typical of an urban environment. **Geography and geology are consistent with a restricted-residential and/or commercial re-use.**

APPENDIX G
LAND USE EVALUATION

16. *Current institutional controls applicable to the site:* **No institutional controls are currently present that would affect redevelopment options.**

Based on the above analysis, reuse of the Sites in a restricted-residential and/or commercial capacity is consistent with past and current development and zoning on and around the Sites, and does not pose additional environmental or human health risk.

APPENDIX H

ELECTRONIC COPY OF RI/AA/IRM REPORT