ExxonMobil

*Environmental Services*

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Steve Trifiletti
Project Manager

February 5, 2010

Mr. Brian Davidson
New York State Department of Environmental Conservation
Remedial Bureau B
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-7016

Re: Interim Remedial Measure Feasibility Study Work Plan
Former Pratt Oil Works
Inland Parcels, Queens, New York

Dear Mr. Davidson:

Exxon Mobil Corporation ("ExxonMobil") is submitting for your review and comment the enclosed Interim Remedial Measure (IRM) Feasibility Study Work Plan for the subject site. Three hard copies and an electronic copy are provided per Section VIII of the Consent Order (D2-1002-12-07AM) executed between ExxonMobil and NYSDEC. This report has been prepared on behalf of ExxonMobil by Kleinfelder of Bohemia, New York.

Please do not hesitate to contact me at (516) 239-5232 if you have any questions.

Very truly yours,

Steve Trifiletti
Project Manager

Enclosure

Via FEDEX Overnight

cc: N. Sherman (HP Sherman Co. Inc. – hard copy only)
L. Forte (A&L Cesspool Ser./Co. – hard copy only)
A. Michaels (NYSDEC – electronic copy only)
J. Wolf (Kleinfelder)

KLEINFELDER
Bright People. Right Solutions.

***DELIVERED VIA ELECTRONIC MAIL***

February 5, 2010

Mr. Steve Trifiletti
ExxonMobil Environmental Services Company
Global Remediation - Major Projects
464 Doughty Boulevard
Inwood, New York 11096

**Re: Interim Remedial Measure Feasibility Study Work Plan**
The Inland Parcels (Tract I)
Former Pratt Oil Works
Parcel A - 38-40 Railroad Avenue
Parcel C - 38-70 Review Avenue
Parcel D - 38-84 Railroad Avenue
Parcel E - 38-50 Review Avenue and 38-54 Railroad Avenue
Parcel F - 38-98 Review Avenue
Parcel G - 38-78 review Avenue
Parcel H - 39-30 Review Avenue
Parcel I - 38-20 Review Avenue
Parcel J - 37-88 Review Avenue
Parcel K - 38-60 Review Avenue
Long Island City, New York

NYSDEC Case No. 07-07418 (Parcel A)
NYSDEC Case No. 08-13060 (Parcel C)
NYSDEC Case No. 09-04539 (Parcel D)
NYSDEC Case No. 09-03356 (Parcel E)
NYSDEC Case No. 09-03488 (Parcel G)
NYSDEC Case No. 09-03616 (Parcel H)
NYSDEC Case No. 09-03287 (Parcel I)
Consent Order Case No. D2-1002-12-07AM
Document Tracking No. S241115

Dear Mr. Trifiletti:

Kleinfelder East, Inc. (Kleinfelder) was retained by ExxonMobil Environmental Services Company (ExxonMobil), on behalf of ExxonMobil Oil Corporation, to prepare this Interim Remedial Measure Feasibility Study Work Plan (Work Plan) for the above-referenced former Pratt Oil Works (FPOW), Inland Parcels (Tract I), herein identified as the Site




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(Figure 1). This Work Plan has been reviewed by Kleinfelder Engineering, P.C. for accuracy, content and quality of presentation as described in the engineering certification provided as Attachment A.

This Work Plan has been prepared in accordance with a *Site Characterization Work Plan for the Inland Parcels, Former Pratt Oil Works Site,* prepared by Parsons dated August 2008 and a *Site Characterization Work Plan Addendum* prepared by Kleinfelder on November 21, 2008 which were approved by the New York State Department of Environmental Conservation (NYSDEC) on December 1, 2008. Investigative and interim remedial activities (IRM) are on-going and are being conducted in accordance with a Corrective Action Plan (CAP) included in Order on Consent No. D2-1002-12-07 AM, which was executed between ExxonMobil Oil Corporation and the NYSDEC on July 15, 2008. A site characterization, including the advancement of three soil borings (SB-13 to SB-15), installation of 11 monitoring wells (MW-14 to MW-24), and excavation of three test pits (TP-12 to TP-15), was completed at the Site on September 24, 2009. A description of the methods and results will be submitted to the NYSDEC under separate cover.

Light non-aqueous phase liquid (LNAPL) was detected in seven of the 11 monitoring wells installed during the site characterization. LNAPL distribution and thickness are presented on Table 1. A description including, but not limited to, the nature and extent of LNAPL detected will be submitted to the NYSDEC under separate cover. The intent of this Work Plan is to describe the technical approach to evaluate LNAPL recovery technologies and select the optimal method to implement for IRM LNAPL recovery. Additional criteria, including but not limited to, the temporary on-site storage options, availability to recycle and/or dispose of accumulated LNAPL, LNAPL waste characterization, and access agreement requirements will also be considered prior to selecting the final IRM technology. Based on the evaluation and the criteria stated above, a combination of LNAPL recovery methodologies may be utilized.

## SITE DESCRIPTION

The FPOW property encompassed approximately 18.5 acres located adjacent to Newtown Creek. The property has since been subdivided into 16-lots of Block 312. The property is divided north and south by the Long Island Railroad (LIRR) train tracks. Properties north of the LIRR are the Inland Parcels (Tract I) and properties south are the Waterfront Parcels (Tract II). Each tract is further subdivided into parcels (Parcels A through K) based on property ownership. Therefore, each parcel may have more than one address based on property ownership. This Work Plan is limited to the Inland Parcels. A Site Plan illustrating pertinent site features including, but not limited to, block and lot, parcel identification, property boundaries, LIRR, and current buildings and structure layouts is provided on Figure 2.

The Inland Parcels include 11 commercial/industrial properties between the LIRR and Review Avenue, approximately 1,000 feet southeast of the Greenpoint Avenue Bridge. Public utilities servicing the Inland Parcels include underground water, electric, and

telecommunication lines. Sanitary waste is stored on each parcel in what appear to be septic tanks; however the construction of the structures was not confirmed.

The Inland parcels are located in an industrial business zone. Below is a description of current property use per parcel:

- Parcel A is owned by Waste Management Corporation (WMC) and is used for parking by A&L Recycling.
- Parcel C is owned by Keane Realty LLC and is used for vehicle storage associated with V.I.P. Towing Inc.
- Parcel D is owned by A&L Cesspool Services Company and currently operates as A&L Recycling which specializes in restaurant oil and grease recovery and recycling, as well as cesspool services (http://aandlrecycling.com).
- Parcel E is owned by HP Sherman Co. Inc. and operates as William E. Williams Valve Corporation which designs and manufactures valves for industrial and commercial applications (http://www.williamsvalve.com/).
- Parcel F is owned by DG Properties LLC and operates as J&S Supply Corporation, a wholesale stocking distributor of residential and commercial building materials (www.jandssupply.com/).
- Parcel G is owned by Werwaiss Realty Company and operates as United Refrigeration Inc., a commercial refrigeration supply distributor (www.uri.com).
- Parcel H operates as American Cleaning Solutions a division of American Wax Co., who manufactures and sells cleaning and maintenance products (http://www.cleaning-solutions.com/).
- Parcel I is owned by Review Associates and includes a warehouse building partially occupied by Lenoble Lumber on the east side. Lenoble Lumber is a retail lumber and building supply distribution facility (www.lenoblelumber.com). On the west side of the warehouse is National Van Equipment Company Inc., a manufacturer of furniture pads and moving equipment www.nationalvanequip.com.
- Parcel J is owned by Up from the Ashes, Inc. and occupied by Phoenix Beverage Inc. a wholesale beverage distributor.
- Parcel K is owned by Renari Realty, LLC.

The Site is bound to the northeast by Review Avenue. Further northeast is Calvary Cemetery. The Site is bordered to the northwest by a former Quanta Resources site (State Superfund Site #2-41-005) (Quanta). Southwest of the Site is the LIRR followed by the Waterfront Parcels and Newtown Creek. Southeast is a former cement facility that is currently not operational.

## SITE GEOLOGY

The Site geology is generally heterogeneous, consisting of deposits of sands, silt, peat, gravel, cobbles, and urban fill material. Bedrock was not encountered during Site investigations.

The deposits beneath the Inland parcels are predominantly composed of sand of unknown thickness, observed to the maximum depth of investigation (25 to 37 feet below grade [fbg]). Fill material is absent from the northeastern portion of the site. Sporadic lenses of silt, gravels and cobbles were observed in borings on the Inland Parcels.

Heterogeneity of the subsurface deposits increases from the center of the Inland Parcels towards Newtown Creek. A silt layer approximately 2 to 5 feet thick is present in the central portion of the Inland Parcels extending towards the southwest. The silt layer appears to dip towards the southwest, with its highest observed elevation at approximately 10 feet above mean sea level (ft-msl) in the center of the Inland Parcels.

## SITE HYDROGEOLOGY

Groundwater is present beneath the Site in perched and leaky confined conditions at depths ranging from approximately 3 feet along Newtown Creek to approximately 25 fbg in the northernmost portions of the Inland Parcels.

On October 26, 2009, a synoptic round of liquid level gauging was conducted on the monitoring well network (including the Waterfront Parcels) MW-1 through MW-24 at low slack water during a neap tide event in Newtown Creek. Gauging during neap tide slack water was preferred to minimize tidal fluctuations on gauging data. Neap tides are tides with lower than average tidal fluctuation with longer slack water times. Neap tides occur when the moon is at first or third quarter. Monitoring well gauging data are summarized on Table 1. Groundwater flow direction at the water table during the neap tide on October 26, 2009 was generally south and southeast towards Newtown Creek. The average water table gradient between the northern and southern boundaries of the Site was calculated to be approximately 0.009 feet per foot (ft/ft).

## PROPOSED SCOPE OF WORK

Several LNAPL recovery methodologies, including manual gauging and bailing, submersible pumping (electronic and pneumatic), and enhanced fluid recovery (EFR), are proposed to be evaluated. Liquid level gauging of the monitoring well network located on the Site on October 26, 2009, detected LNAPL in monitoring wells MW-14, MW-16, MW-17, MW-19 and MW-22 through MW-24, ranging in thickness from 0.02 feet in MW-16 to 8.46 feet in MW-24. Use of submersible pumping and EFR will be contingent upon whether favorable recharge rates are exhibited, following the manual gauging and bailing, as well as the initial gauging results of the monitoring wells during the commencement of those techniques. Monitoring well gauging data are summarized on Table 1.

Monitoring wells MW-17 (Parcel E) and MW-24 (Parcel D) are proposed to be tested to complete the study. Monitoring wells MW-17 and MW-24 were selected based on the following criteria:

- The wells have similar geology and LNAPL thicknesses and are located approximately 120 feet apart from each other.
- LNAPL thicknesses ranging between approximately 6 and 8 feet at the water table.
- Location of the wells outside of high traffic patterns.
- Waste characterization analysis of LNAPL samples collected from the wells was acceptable for recycling as a non-hazardous recoverable product by a disposal facility with vacuum truck services.

The monitoring well locations are illustrated on Figure 2. The feasibility study results will be compared in an effort to evaluate the optimal LNAPL recovery methodology. Additional criteria, including, but not limited to, the temporary on-site storage options, availability to recycle and/or dispose of accumulated LNAPL, LNAPL waste characterization, and access agreement requirements will also be considered prior to selecting the final IRM technology. Based on the evaluation and the criteria stated above, a combination of LNAPL recovery methodologies may be utilized.

Proposed LNAPL recovery methodologies for the evaluation are summarized as follows.

***Manual Gauge and Bail Events - Week 1***

Monitoring wells MW-17 and MW-24 will be gauged for depth to product (DTP) and depth to water (DTW) using an electronic interface probe (EIP) to measure LNAPL thickness. LNAPL will be bailed from the monitoring wells with 1 or 3-inch diameter polyethylene bailers. Upon retrieval at the surface, LNAPL will be temporarily stored in grounded and vented United States Department of Transportation (USDOT) approved 55-gallon, steel drums staged on spill containment pallets and covered with plastic sheeting pending off-site disposal. Following bailing, the monitoring well will be gauged in approximately 1-minute increments, for approximately 15 minutes, to evaluate LNAPL recharge rates.

***Submersible Pumping***

The following subsections describe the proposed submersible pumping methodologies for evaluation.

- ***Electric Powered Submersible Pumping - Week 2***

  Monitoring wells MW-17 and MW-24 will be gauged for DTP and DTW using an EIP to measure LNAPL thickness. LNAPL will be pumped from the monitoring wells using a submersible Spill Buster™ pumping system or the equivalent. The submersible Spill Buster™ is equipped with a sensor which will seek the groundwater/LNAPL interface. After locating the groundwater/LNAPL interface, the pump will position itself above the interface and will collect LNAPL through the pump intake. The LNAPL will be pumped to the surface where it will be transferred and temporarily stored in grounded and vented USDOT approved 55-




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gallon, steel drums staged on spill containment pallets and covered with plastic pending off-site disposal. Pumping will continue for up to 6 hours of recovery. Following pumping, the monitoring wells will be gauged in approximately 1-minute increments, for approximately 15 minutes, to evaluate LNAPL recharge rates.

- ***Pneumatic Powered Submersible Pumping - Week3***

  Monitoring wells MW-17 and MW-24 will be gauged for DTP and DTW using an EIP to measure LNAPL thickness. LNAPL will be pumped from the monitoring wells using a pneumatic skimming pumping system equipped with a LNAPL skimmer attached to the top of a pump. LNAPL from the skimmer will feed the pump chamber where compressed air will force it to the surface. At the surface, the LNAPL will be transferred and temporarily stored in grounded and vented USDOT approved 55-gallon, steel drums staged on spill containment pallets pending off-site disposal. Pumping will continue for up to 6 hours of recovery. Following pumping, the monitoring wells will be gauged in approximately 1-minute increments, for approximately 15 minutes, to evaluate LNAPL recharge rates.

### *Enhanced Fluid Recovery - Weeks 4 & 5*

Monitoring wells MW-17 (Parcel E) and MW-24 will be gauged for DTP and DTW using an EIP to measure LNAPL thickness. The EFR event will be conducted via vacuum truck to remove LNAPL from the monitoring wells. LNAPL saturated sand under water table conditions (i.e., no confining strata) at MW-17 and MW-24 is a favorable condition for enhanced LNAPL recovery by vacuum extraction. A single 1 or 2-inch diameter extraction pipe ("stinger") will be temporarily installed within the monitoring wells and connected to the vacuum truck via a cam lock fitting and hose. The stinger will be installed at/or above the LNAPL level or approximately 1-foot below the water-table and adjusted vertically as necessary in an effort to maximize LNAPL recovery. The water table will not be depressed to a depth below the observed depth of LNAPL. A vacuum will be applied for approximately 1 hour. The monitoring wells and vacuum truck holding tank will be gauged after 1 hour to evaluate the amount of LNAPL recovered. This procedure will continue until less than approximately 0.01-foot of LNAPL is detected in the monitoring wells, or up to 6 hours of recovery. Following EFR, the monitoring wells will be gauged in approximately 1-minute increments, for approximately 15 minutes, to evaluate LNAPL recharge rates. Recovered liquids will be transported off-site for disposal at an approved facility.

## IMPLEMENTATION SCHEDULE

The above-stated IRM feasibility testing is planned to be implemented within 45 days of NYSDEC approval of this Work Plan, contingent upon, but not limited to, access and weather conditions. Each of the four methodologies proposed will be separately conducted during consecutive weeks. A letter report summarizing the findings and results of the LNAPL recovery feasibility study will be provided to the NSYDEC within 45

days of completion of the evaluation. The results of the IRM Study will be used to evaluate an IRM strategy for the implementation of a LNAPL recovery technology.

The feasibility testing and reporting will be implemented and completed according to the schedule discussed above assuming no unforeseen circumstances occur, no issues with obtaining timely access, no occurrence of weather unfavorable to the conducting of such testing, or additional activities are required by the NYSDEC. If additional work is required by the NYSDEC for this Site during the same time frame described above, the implementation of said additional work, as well as the activities listed above, will be completed on a revised schedule to be agreed upon by ExxonMobil and the NYSDEC. Additional IRM and feasibility testing actions may be proposed to the NYSDEC based on the findings of the above stated feasibility testing.

If you have questions or require additional information, please contact the undersigned at (631) 218-0612.

Very truly yours,
**Kleinfelder East, Inc.**

John E. Wolf
Senior Project Manager

Michael Meyerhoefer
Project Manager

Attachments

Copy: File (12)

*"Kleinfelder performed the services for this project under the Standard Procurement Agreement with Procurement, a division of ExxonMobil Global Services Company (signed on June 21, 2007). Kleinfelder states that the services performed are consistent with professional standard of care defined as that level of services provided by similar professionals under like circumstances. This report is based on the regulatory standards in effect on the date of the report. It has been produced for the primary benefit of Exxon Mobil Global Services Company and its affiliates."*




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**TABLE**

**Table 1**
**GROUNDWATER GAUGING AND FIELD PARAMETERS SUMMARY**

Former Pratt Oil Works
Long Island City, New York

April 7, 2009 through September 24, 2009

| | | Gauging Data | | | | | |
|---|---|---|---|---|---|---|---|
| **Sample ID** | **Date** | **Top of Casing Elevation** (feet) | **Depth to Water** (feet) | **Depth to LNAPL** (feet) | **Specific Gravity** (g/cm3) | **LNAPL Thickness** (feet) | **Corrected GW Elevation** (feet) |
| MW-1(6-18) | 4/7/2009 | 13.49 | 9.51 | ND | NA | ND | 3.98 |
| | 4/17/2009 | 13.49 | 9.43 | ND | NA | ND | 4.06 |
| | 7/29/2009 | 13.49 | 8.56 | ND | NA | ND | 4.93 |
| | 10/26/2009 | 13.49 | 8.08 | ND | NA | ND | 5.41 |
| MW-2(2-17) | 4/7/2009 | 6.56 | 5.45 | ND | NA | ND | 1.11 |
| | 4/17/2009 | 6.56 | 7.81 | 7.72 | NA | 0.09 | -1.17 |
| | 7/29/2009 | 6.56 | 8.88 | 7.78 | NA | 1.10 | -2.32 |
| | 10/26/2009 | 6.56 | 8.09 | 6.72 | NA | 1.37 | -1.53 |
| MW-3(3-18) | 4/7/2009 | 7.95 | NM | NM | NA | NM | NM |
| | 4/17/2009 | 7.95 | NM | NM | NA | NM | NM |
| | 7/29/2009 | 7.95 | NM | NM | 0.9386 | NM | NM |
| | 10/26/2009 | 7.95 | 9.70 | 8.15 | 0.9386 | 1.55 | -1.75 |
| MW-4(5-22) | 4/7/2009 | 8.87 | 9.65 | 6.59 | 0.8908 | 3.06 | 1.95 |
| | 4/17/2009 | 8.87 | 11.55 | 6.52 | 0.8908 | 5.03 | 1.80 |
| | 7/29/2009 | 8.87 | 10.95 | 6.00 | 0.8908 | 4.95 | 2.33 |
| MW-4S | 10/26/2009 | 8.81 | 7.20 | 6.31 | 0.8908 | 0.89 | 2.40 |
| MW-4D | 10/26/2009 | 8.57 | 6.95 | ND | 0.9086 | ND | 1.62 |
| | 10/29/2009 | 8.57 | 6.78 | ND | 0.9086 | ND | 1.79 |
| MW-5(13-21) | 4/7/2009 | 9.62 | 18.82 | 7.14 | 0.8952 | 11.68 | 1.26 |
| | 4/17/2009 | 9.62 | 18.66 | 7.32 | 0.8952 | 11.34 | 1.11 |
| | 7/29/2009 | 9.62 | 20.00 | 6.99 | 0.8952 | 13.01 | 1.27 |
| | 9/4/2009 | 9.62 | 17.10 | 7.00 | 0.8952 | 10.10 | 1.56 |
| | 9/10/2009 | 9.62 | 20.35 | 8.52 | 0.8952 | 11.83 | -0.14 |
| | 10/26/2009 | 9.62 | 18.05 | 7.69 | 0.8952 | 10.36 | 0.84 |
| MW-6(18-23) | 4/7/2009 | 11.80 | 12.18 | 9.09 | 0.8944 | 3.09 | 2.40 |
| | 4/17/2009 | 11.80 | 12.55 | 9.35 | 0.8944 | 3.20 | 2.13 |
| | 7/29/2009 | 11.80 | 12.82 | 8.79 | 0.8944 | 4.03 | 2.58 |
| | 10/26/2009 | 11.80 | 15.55 | 9.08 | 0.8944 | 6.47 | 2.04 |
| MW-7(1-15) | 4/7/2009 | 6.54 | 5.18 | 4.82 | 0.9129 | 0.36 | 1.68 |
| | 4/17/2009 | 6.54 | 8.42 | 7.74 | 0.9129 | 0.68 | -1.27 |
| | 7/29/2009 | 6.54 | 9.30 | 7.80 | 0.9129 | 1.50 | -1.39 |
| | 10/26/2009 | 6.54 | 7.70 | 7.07 | 0.9129 | 0.63 | -0.58 |
| MW-8(1-13) | 4/7/2009 | 5.80 | 4.09 | ND | NA | ND | 1.71 |
| | 4/17/2009 | 5.80 | 7.54 | ND | NA | ND | -1.74 |
| | 7/28/2009 | 5.80 | 5.65 | ND | NA | ND | 0.15 |
| | 7/29/2009 | 5.80 | 7.50 | ND | NA | ND | -1.70 |
| | 10/26/2009 | 5.80 | 6.83 | ND | NA | ND | -1.03 |
| | 10/27/2009 | 5.80 | 5.37 | ND | NA | ND | 0.43 |
| MW-9(3-18) | 4/7/2009 | 9.76 | 17.70 | 8.40 | 0.9074 | 9.30 | 0.50 |
| | 4/17/2009 | 9.76 | 17.51 | 8.28 | 0.9074 | 9.23 | 0.63 |
| | 7/29/2009 | 9.76 | 17.90 | 8.35 | 0.9074 | 9.55 | 0.53 |
| | 9/4/2009 | 9.76 | 17.98 | 8.35 | 0.9074 | 9.63 | 0.52 |
| | 9/10/2009 | 9.76 | 19.30 | 9.51 | 0.9074 | 9.79 | -0.66 |
| | 9/16/2009 | 9.76 | 17.90 | 8.25 | 0.9074 | 9.65 | 0.62 |
| | 10/26/2009 | 9.76 | 17.90 | 8.84 | 0.9074 | 9.06 | 0.08 |



**Kleinfelder**
One Corporate Drive, Suite 201, Bohemia, NY

**Table 1**
**GROUNDWATER GAUGING AND FIELD PARAMETERS SUMMARY**

Former Pratt Oil Works
Long Island City, New York

April 7, 2009 through September 24, 2009

| | | Gauging Data | | | | | |
|---|---|---|---|---|---|---|---|
| **Sample ID** | **Date** | **Top of Casing Elevation** (feet) | **Depth to Water** (feet) | **Depth to LNAPL** (feet) | **Specific Gravity** (g/cm3) | **LNAPL Thickness** (feet) | **Corrected GW Elevation** (feet) |
| MW-10(3-13) | 4/7/2009 | 10.56 | 8.74 | ND | NA | ND | 1.82 |
| | 4/17/2009 | 10.56 | 8.64 | ND | NA | ND | 1.92 |
| | 7/29/2009 | 10.56 | 8.10 | ND | NA | ND | 2.46 |
| | 7/30/2009 | 10.56 | 8.04 | ND | NA | ND | 2.52 |
| | 10/26/2009 | 10.56 | 8.20 | ND | NA | ND | 2.36 |
| | 10/27/2009 | 10.56 | 8.20 | ND | NA | ND | 2.36 |
| MW-11(2-17) | 4/7/2009 | 6.98 | 5.73 | ND | NA | ND | 1.25 |
| | 4/17/2009 | 6.98 | 8.72 | ND | NA | ND | -1.74 |
| | 7/29/2009 | 6.98 | 7.98 | ND | NA | ND | -1.00 |
| | 7/30/2009 | 6.98 | 8.57 | ND | NA | ND | -1.59 |
| | 10/26/2009 | 6.98 | 8.15 | NA | NA | NA | -1.17 |
| | 10/27/2009 | 6.98 | 7.34 | NA | NA | NA | -0.36 |
| MW-12(2-16) | 4/7/2009 | 6.67 | 8.26 | ND | NA | ND | -1.59 |
| | 4/17/2009 | 6.67 | 8.41 | 8.40 | 0.91** | 0.01 | -1.73 |
| | 7/29/2009 | 6.67 | NM | ND | NA | ND | NM |
| | 10/26/2009 | 6.67 | 7.95 | 7.81 | 0.91** | 0.14 | -1.15 |
| MW-13(1-8) | 4/7/2009 | 7.82 | NM | NM | NA | NM | NM |
| | 4/17/2009 | 7.82 | 3.64 | ND | NA | ND | 4.18 |
| | 7/29/2009 | 7.82 | 3.51 | ND | NA | ND | 4.31 |
| | 7/30/2009 | 7.82 | 3.47 | ND | NA | ND | 4.35 |
| | 10/26/2009 | 7.82 | 3.59 | ND | NA | ND | 4.23 |
| | 10/27/2009 | 7.82 | 3.59 | ND | NA | ND | 4.23 |
| MW-14(7.5-27.5) | 7/29/2009 | 22.92 | 26.80 | 20.65 | 0.9086 | 6.15 | 1.71 |
| | 10/26/2009 | 22.92 | 26.50 | 21.31 | 0.9086 | 5.19 | 1.14 |
| MW-15(5.5-20.5) | 7/28/2009 | 13.05 | 10.48 | ND | NA | ND | 2.57 |
| | 7/29/2009 | 13.05 | 10.59 | ND | NA | ND | 2.46 |
| | 10/26/2009 | 13.05 | 11.32 | ND | NA | ND | 1.73 |
| | 10/28/2009 | 13.05 | NM | ND | NA | ND | NM |
| MW-16(10.5-30.5) | 7/29/2009 | 24.12 | 21.00 | 20.91 | 0.91** | 0.09 | 3.20 |
| | 10/26/2009 | 24.12 | 21.27 | 21.25 | 0.91** | 0.02 | 2.87 |
| MW-17(8.5-25.5) | 7/29/2009 | 16.81 | 22.20 | 14.76 | 0.91 | 7.44 | 1.40 |
| | 10/26/2009 | 16.81 | 23.00 | 15.44 | 0.91 | 7.56 | 0.69 |
| MW-18(17.5-37.5) | 9/24/2009 | 23.55 | 20.92 | ND | NA | ND | 2.63 |
| | 10/26/2009 | 23.55 | 21.32 | ND | NA | ND | 2.23 |
| | 10/29/2009 | 23.55 | 21.76 | ND | NA | ND | 1.79 |
| MW-19(11.5-31.5) | 9/24/2009 | 24.85 | 22.55 | 21.95 | 0.9087 | 0.60 | 2.85 |
| | 10/26/2009 | 24.85 | 23.05 | 22.00 | 0.9087 | 1.05 | 2.75 |
| MW-20(9.5-29.5) | 7/27/2009 | 28.63 | 25.20 | ND | NA | ND | 3.43 |
| | 7/29/2009 | 28.63 | 21.03 | ND | NA | ND | 7.60 |
| | 10/26/2009 | 28.63 | 21.61 | ND | NA | ND | 7.02 |
| | 10/28/2009 | 28.63 | 21.57 | ND | NA | ND | 7.06 |
| MW-21(10.5-25.5) | 7/27/2009 | 16.63 | 14.50 | ND | NA | ND | 2.30 |
| | 7/29/2009 | 16.63 | 14.37 | ND | NA | ND | 2.26 |
| | 10/26/2009 | 16.63 | 14.10 | ND | NA | ND | 2.53 |
| | 10/28/2009 | 16.63 | 14.02 | ND | NA | ND | 2.61 |

# Table 1
## GROUNDWATER GAUGING AND FIELD PARAMETERS SUMMARY

Former Pratt Oil Works
Long Island City, New York

April 7, 2009 through September 24, 2009

| | | Gauging Data | | | | | |
|---|---|---|---|---|---|---|---|
| **Sample ID** | **Date** | **Top of Casing Elevation** (feet) | **Depth to Water** (feet) | **Depth to LNAPL** (feet) | **Specific Gravity** (g/cm3) | **LNAPL Thickness** (feet) | **Corrected GW Elevation** (feet) |
| MW-22(14.5-34.5) | 7/29/2009 | 29.36 | 27.20 | 25.79 | 0.9092 | 1.41 | 3.44 |
| | 10/26/2009 | 29.36 | 28.40 | 26.15 | 0.9092 | 2.25 | 3.01 |
| MW-23(10.5-24.5) | 7/29/2009 | 19.05 | 23.85 | 17.09 | 0.9094 | 6.76 | 1.35 |
| | 10/26/2009 | 19.05 | 23.82 | 17.76 | 0.9094 | 6.06 | 0.74 |
| MW-24(5.5-25.5) | 7/29/2009 | 17.56 | 24.10 | 15.20 | 0.9034 | 8.90 | 1.50 |
| | 10/26/2009 | 17.56 | 24.25 | 15.79 | 0.9034 | 8.46 | 0.95 |

**Notes:**

~ - no standard or guidance value exists

<1.0 - Not detected at or above the laboratory reporting limit shown

ºC - degrees Celsius

F - degrees Fahrenheit

cst - centistokes

Corrected GW Elevation - calculated using the following formula:
(top of casing elevation - depth to water) + (LNAPL thickness * LNAPL specific gravity)

Depth to Water - measured in feet below land surface from top of casing

GW - Groundwater

LNAPL - Light non-aqueous phase liquid

mg/L - milligrams per liter (parts per million)

mS/cm - milliSiemens per centimeter

mV - millivolts

N/A - Not applicable

NA - Not analyzed

ND - Not detected

NM - Not monitored

NS - Not sampled

NSVD - Not surveyed to vertical datum

ntu - nephelometric turbidity units

ppmv - parts per million by volume

ppt - parts per thousand

s.u. - standard units

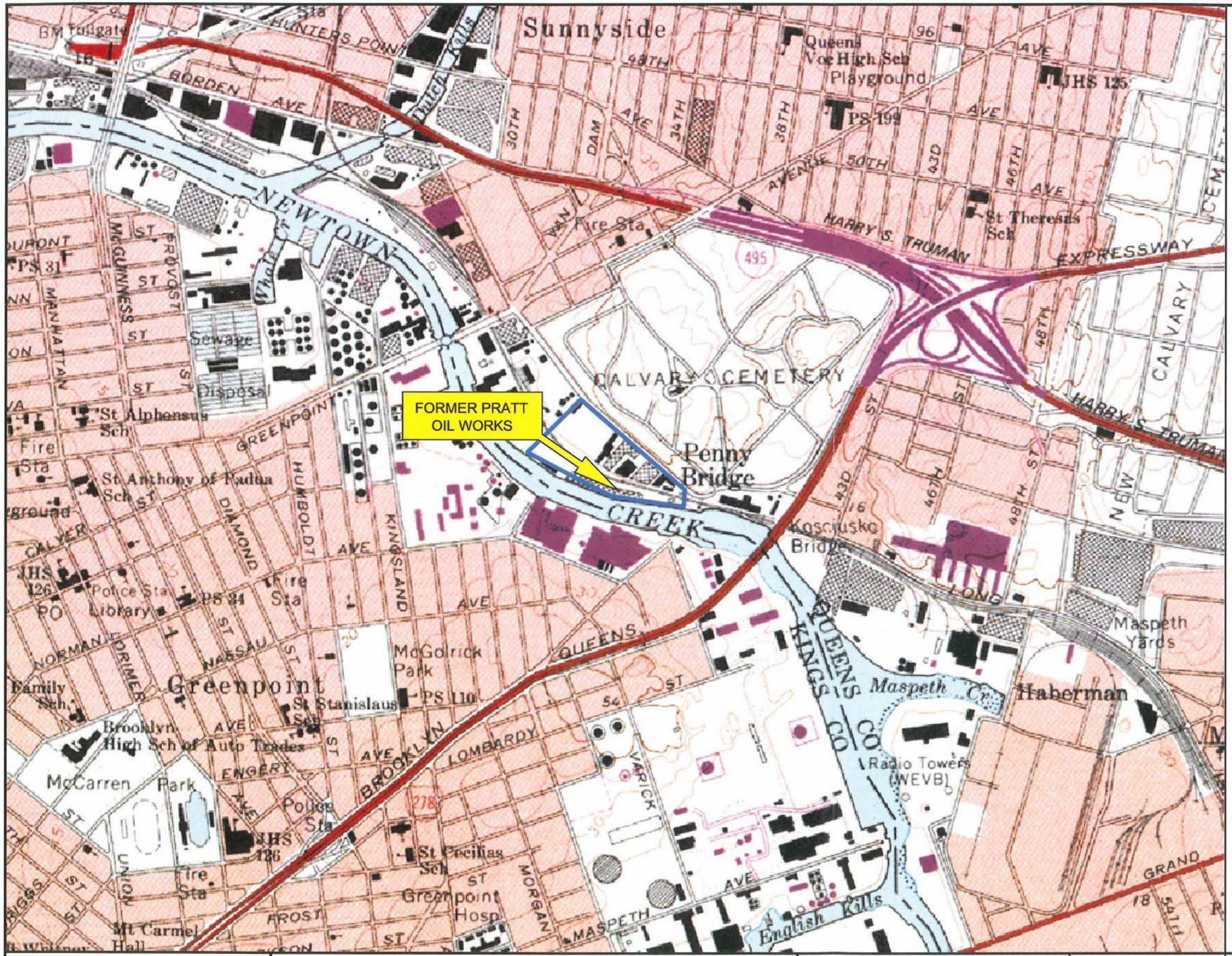
* - equipment malfunction

** - estimated value based on surrounding wells



**Kleinfelder**
One Corporate Drive, Suite 201, Bohemia, NY

# FIGURES




0 500 1,000 2,000

SCALE (feet)

PROPERTY LINE

N

LATITUDE: 40° 43' 47.32" N

LONGITUDE: 73° 56' 08.26" W


SOURCE:
USGS 7.5' SERIES TOPOGRAPHIC MAP,
"BROOKLYN, NY QUADRANGLE
PHOTOREVISED 1979"

QUADRANGLE LOCATION



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| | |
|---|---|
| PROJECT NO. | 102179 |
| DRAWN: | 12/16/2009 |
| DRAWN BY: | JR |
| CHECKED BY: | |
| FILE NAME: | |

**LOCUS PLAN**

FORMER PRATT OIL WORKS
THE INLANDS PARCELS (TRACT I)
THE WATERFRONT PARCELS (TRACT II)
LONG ISLAND CITY, NEW YORK

FIGURE
**1**

BOHEMIA, NY




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| | |
|---|---|
| PROJECT NO. | 104206 |
| DRAWN: | 12/16/2009 |
| DRAWN BY: | J.R. |
| CHECKED BY: | |
| FILE NAME: | |

**SITE PLAN - INLAND PARCELS**

FORMER PRATT OIL WORKS
THE INLAND PARCELS (TRACT I)
THE WATERFRONT PARCELS (TRACT II)
LONG ISLAND CITY, NEW YORK

FIGURE
**2**

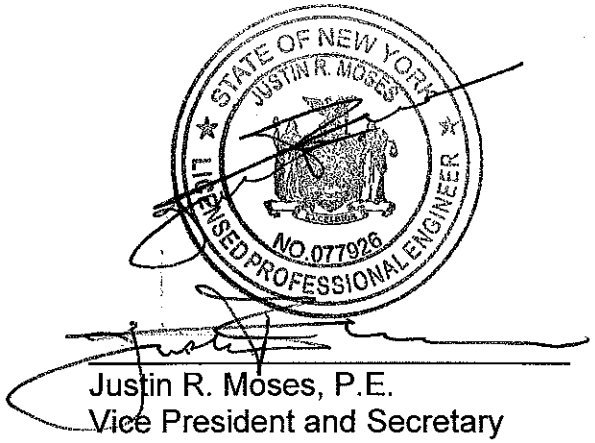
**ATTACHMENT A**
**ENGINEERING CERTIFICATION**

**INTERIM REMEDIAL MEASURE FEASIBIBILITY STUDY WORK PLAN**

**The Inland Parcels (Tract I)**
**Former Pratt Oil Works**
**Long Island City, New York**

## ENGINEERING CERTIFICATION

This report has been reviewed by Kleinfelder Engineering, P.C. for accuracy, content and quality of presentation. The Education Law of the State of New York prohibits any person from altering anything in the report in anyway unless it is under the direction of the licensed professional engineer. Where such alterations are made, the professional engineer must sign, seal, date and describe the full extent of the alteration (NYS Education Law Section 7209-2).




Justin R. Moses, P.E.
Vice President and Secretary
Kleinfelder Engineering, P.C.

Date 2/5/10