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August 30, 2011

New York City Office of Environmental Remediation  
City Brownfield Cleanup Program  
c/o Shaminder Chawla  
100 Gold Street, 2<sup>nd</sup> Floor  
New York, NY 10038

**Re: 12CBCP021K  
470 Driggs Avenue  
Remedial Action Work Plan (RAWP) Stipulation List**

Dear Mr. Chawla:

Brinkerhoff Environmental Corp hereby submits a Remedial Action Work Plan (RAWP) Stipulation List for the subject site to the New York City Office of Environmental Remediation (NYCOER) on behalf of Biergarten Williamsburg LLC. This letter serves as an addendum to the RAWP to stipulate additional content, requirements and procedures that will be followed during the site remediation. The contents of this list are added to the RAWP and will supersede the content in the RAWP where there is a conflict in purpose or intent. The additional requirements/procedures include the following:

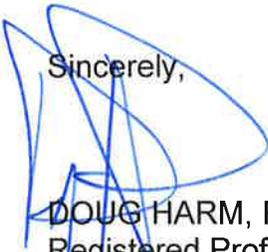
**Stipulation List**

1. The applicant is Biergarten Williamsburg, LLC.
2. The criterion attached in Addendum 1 will be utilized if petroleum containing tank or vessel is identified during the remedial action or subsequent redevelopment excavation activities. All petroleum spills will be reported to the NYSDEC hotline as required by applicable laws and regulations. This contingency plan is designed for heating oil tanks and other small or moderately sized storage vessels. If larger tanks, such as gasoline storage tanks are identified, OER will be notified before this criterion is utilized.

3. Collection and analysis of End Point Samples will be conducted to evaluate the performance of the remedy with respect to attainment of Track 4 SCOs. End point samples will be taken for parameters of concern. A map indicating post-remedial End Point Sampling Locations is attached as Addendum 2. Samples will be collected at the base of the excavation.
4. Addendum 3 provides design specifications on the type, thickness and installation process for the vapor barriers. The vapor barrier planned for this project includes a Raven Industries Vaporblock Plus 20 mil liner to be installed beneath the building slab and along the below grade foundation sidewalls. This barrier is an impermeable membrane that is capable of preventing the migration of soil vapor into the building. Design and Technical Specification for the Vapor Barriers are attached in Addendum 3.
5. Certified, signed, and stamped architectural and engineering plans, including final cover slab design, excavation diagram for footings/development-related excavation, vapor barrier design (cross-section and plan showing horizontal extent), and sub-slab depressurization system design are attached in Addendum 4.
6. Certified letter/ project description from architect/ engineer of record describing the development, including plans to install vapor barrier and active sub-slab depressurization system is included in Addendum 5.
7. This NYC BCP project involving the removal and transportation of hazardous waste may be subject to the New York state Department of Environmental Conservation's Special Assessment Tax (ECL 27-0923) and Hazardous Waste Regulatory Fees (ECL 72-00402). See DEC's website for more information: <http://www.dec.ny.gov/chemical/9099.html>.
8. Pre-approval letter from all disposal facilities will be provided to OER prior to any soil removal. Documentation specified in the RAWP Appendix 3, Section 1.6 will be provided to OER.
9. A CD containing the final RAWP including this approved Stipulation List will be placed in the library that constitutes the primary public repository for project documents.

10. Signage for the project will include a sturdy placard mounted in a publically accessible right of way to building and other permits signage will consist of the NYC BCP Information Sheet (attached Addendum 6) announcing the remedial action. The Information sheet will be laminated and permanently affixed to the placard.
11. Updated project schedule is provided in **Addendum 7**.
12. Updated Construction Health and Safety Plan is provided in Addendum 8.
13. Groundwater sampling data is provided in Addendum 9.

Sincerely,



DOUG HARM, P.G.  
Registered Professional Geologist  
Vice President

cc: H. Moore

## **Addendum 1**

### **Generic Procedures for Management of Underground Storage Tanks identified under the NYC BCP**

Prior to Tank removal, the following procedures should be followed:

- Remove all fluid to its lowest draw-off point.
- Drain and flush piping into the tank.
- Vacuum out the “tank bottom” consisting of water product and sludge.
- Dig down to the top of the tank and expose the upper half.
- Remove the fill tube and disconnect the fill, gauge, product, vent lines and pumps. Cap and plug open ends of lines.
- Temporarily plug all tank openings, complete the excavation, remove the tank and place it in a secure location.
- Render the tank safe and check the tank atmosphere to ensure that petroleum vapors have been satisfactorily purged from the tank.
- Clean tank or remove to storage yard for cleaning.
- If the tank is to be moved, it must be transported by licensed waste transporter. Plug and cap all holes prior to transport leaving a 1/8 inch vent hole located at the top of the tank during transport.
- After cleaning, the tank must be made acceptable for disposal at a scrap yard, cleaning the tanks interior with a high pressure rinse and cutting the tank in several pieces.

During the tank and pipe line removal, the following field observations should be made and recorded:

- A description and photographic documentation of the tank and pipe line condition (pitting, holes, staining, leak points, evidence of repairs, etc.).
- Examination of the excavation floor and sidewalls for physical evidence of contamination (odor, staining, sheen, etc.).
- Periodic field screening (through bucket return) of the floor and sidewalls of the excavation, with a calibrated photoionization detector (PID).

#### Impacted Soil Excavation Methods

The excavation of the impacted soil will be performed following the removal of the existing tanks. Soil excavation will be performed in accordance with the procedures described under Section 5.5 of Draft DER-10 as follows:

- A description and photographic documentation of the excavation.
- Examination of the excavation floor and sidewalls for physical evidence of contamination (odor, staining, sheen, etc.).
- Periodic field screening (through bucket return) of the floor and sidewalls of the excavation, with calibrated photoionization detector (PID).

Final excavation depth, length, and width will be determined in the field, and will depend on the horizontal and vertical extent of contaminated soils as identified through physical examination (PID response, odor, staining, etc.). Collection of verification samples will be performed to evaluate the success of the removal action as specified in this document.

The following procedure will be used for the excavation of impacted soil (as necessary and appropriate):

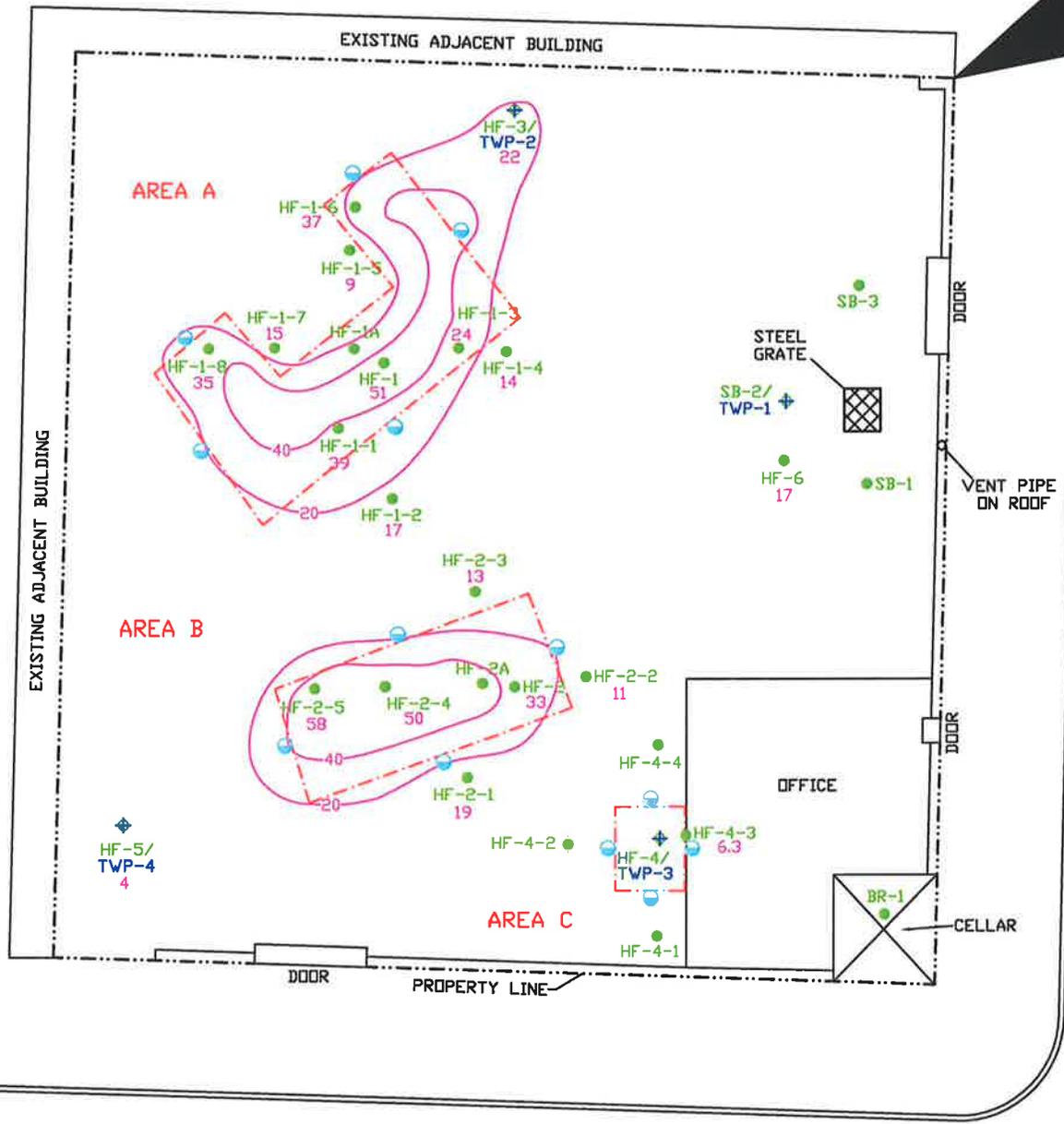
- Wear appropriate health and safety equipment as outlined in the Health and Safety Plan.
- Prior to excavation, ensure that the area is clear of utility lines or other obstructions. Lay plastic sheeting on the ground next to the area to be excavated.
- Using a rubber-tired backhoe or track mounted excavator, remove overburden soils and stockpile, or dispose of, separate from the impacted soil.
- If additional UST's are discovered, the NYSDEC will be notified and the best course of action to remove the structure should be determined in the field. This may involve the continued trenching around the perimeter to minimize its disturbance.
- If physically contaminated soil is present (e.g., staining, odors, sheen, PID response, etc.) an attempt will be made to remove it, to the extent not limited by the site boundaries or the bedrock surface. If possible, physically impacted soil will be removed using the backhoe or excavator, segregated from clean soils and overburden, and staged on separated dedicated plastic sheeting or live loaded into trucks from the disposal facility. Removal of the impacted soils will continue until visibly clean material is encountered and monitoring instruments indicate that no contaminants are present.
- Excavated soils which are temporarily stockpiled on-site will be covered with tarp material while disposal options are determined. Tarp will be checked on a daily basis and replaced, repaired or adjusted as needed to

provide full coverage. The sheeting will be shaped and secured in such a manner as to drain runoff and direct it toward the interior of the property.

Once the site representative and regulatory personnel are satisfied with the removal effort, verification of confirmatory samples will be collected from the excavation in accordance with DER-10.

**Addendum 2**  
End Point Sampling Plan

SUBJECT PROPERTY



0' 10' 20'  
 SCALE: 1"=20'

**LEGEND**

- AREA OF REMEDIATION
- - PROPOSED END POINT SAMPLE LOCATION
- - SOIL SAMPLE LOCATION
- SB-1
- ⊕ - SOIL SAMPLE AND WELL POINT LOCATION
- HF-5/TWP-4

CONTOUR INTERVAL = 20ppm ARSENIC

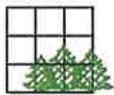
**BRINKERHOFF**   
 ENVIRONMENTAL SERVICES, INC.

FIGURE 4  
 PROPOSED REMEDIATION AREAS MAP  
 470 DRIGGS AVENUE  
 BLOCK 2298, LOT 21  
 BROOKLYN, NEW YORK

DATE: 8/30/11	JOB NO.: 11BR021	SCALE: 1" = 20'
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**Addendum 3**  
Vapor Barrier Warranty

## Doug Harm

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**From:** Rod Aasheim <Rod.Aasheim@ravenind.com>  
**Sent:** Wednesday, August 24, 2011 12:14 PM  
**To:** Doug Harm  
**Cc:** EFDConstruction  
**Subject:** RE: Vaporblock Plus 20 Mil

Hello Doug—When used as an under slab moisture vapor/gas barrier (what it's designed for), the VaporBlock Plus 20 is designed to last for the life span of the building. Let me know if you need further info.

Thanks---Rod Aasheim

**Rod Aasheim**  
**National Market Specialist-Construction**  
**Raven Industries-Engineered Films Division**  
**1813 "E" Avenue**  
**Sioux Falls, SD 57104**  
**(800) 635-3456 ext. 1580**  
**(605) 331-0333 (Fax)**  
[rod.aasheim@ravenind.com](mailto:rod.aasheim@ravenind.com)



“Visit our website today at [www.RavenEFD.com](http://www.RavenEFD.com) to view our entire product line of High Performance Plastic Film and Sheeting.”

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**From:** Doug Harm [mailto:dharm@brinkenv.com]  
**Sent:** Wednesday, August 24, 2011 10:48 AM  
**To:** EFDsales  
**Subject:** Vaporblock Plus 20 Mil

I have spec'ed the Vaporblock Plus 20 mil vapor barrier for beneath a building with VOC issues in the City of NY.

I was asked what the projected lifetime of the barrier is. Can you provide any info on that question?

Thanks,

Doug Harm

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# VAPORBLOCK® PLUS™ VBP20

Under-Slab Vapor / Gas Barrier



## Product Description

VaporBlock® Plus™ 20 is a seven-layer co-extruded barrier made from state-of-the-art polyethylene and EVOH resins to provide unmatched impact strength as well as superior resistance to gas and moisture transmission. VaporBlock® Plus™ 20 is a highly resilient underslab / vertical wall barrier designed to restrict naturally occurring gases such as radon and/or methane from migrating through the ground and concrete slab. VaporBlock® Plus™ 20 is more than 100 times less permeable than typical high-performance polyethylene vapor retarders against Methane, Radon and other harmful VOCs.

VaporBlock® Plus™ 20 is one of the most effective underslab gas barriers in the building industry today far exceeding ASTM E-1745 (Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs) Class A, B and C requirements. Available in a 20 (Class A) mil thicknesses designed to meet the most stringent requirements. VaporBlock® Plus™ 20 is produced within the strict guidelines of our ISO 9001:2008 Certified Management System.

## Product Use

VaporBlock® Plus™ 20 resists gas and moisture migration into the building envelop when properly installed to provide protection from toxic/harmful chemicals. It can be installed as part of a passive or active control system extending across the entire building including floors, walls and crawl spaces. When installed as a passive system it is recommended to also include a ventilated system with sump(s) that could be converted to an active control system with properly designed ventilation fans.

VaporBlock® Plus™ 20 works to protect your flooring and other moisture-sensitive furnishings in the building's interior from moisture and water vapor migration, greatly reducing condensation, mold and degradation.

## Size & Packaging

VaporBlock® Plus™ 20 is available in 10' x 150' rolls to maximize coverage. All rolls are folded on heavy-duty cores for ease in handling and installation. Other custom sizes with factory welded seams are available based on minimum volume requirements. Installation instructions and ASTM E-1745 classifications accompany each roll.



Under-Slab Vapor/Gas Retarder

Product	Part #
VaporBlock Plus 20 .....	VBP 20

## APPLICATIONS

Radon Barrier	Under-Slab Vapor Retarder
Methane Barrier	Foundation Wall Vapor Retarder
VOC Barrier	



# VAPORBLOCK<sup>®</sup> PLUS<sup>™</sup> VBP20



Under-Slab Vapor / Gas Barrier

		VAPORBLOCK PLUS 20	
PROPERTIES	TEST METHOD	IMPERIAL	METRIC
APPEARANCE		White/Gold	
THICKNESS, NOMINAL		20 mil	0.51 mm
WEIGHT		102 lbs/MSF	498 g/m <sup>2</sup>
CLASSIFICATION	ASTM E 1745	CLASS A, B & C	
TENSILE STRENGTH LBF/IN (N/CM) AVERAGE MD & TD (NEW MATERIAL)	ASTM E 154 Section 9 (D-882)	58 lbf	102 N
IMPACT RESISTANCE	ASTM D 1709	2600 g	
MAXIMUM USE TEMPERATURE		180° F	82° C
MINIMUM USE TEMPERATURE		-70° F	-57° C
PERMEANCE (NEW MATERIAL)	ASTM E 154 Section 7  ASTM E 96 Procedure B	0.0051 Perms grains/(ft <sup>2</sup> ·hr·in·Hg)	0.0034 Perms g/(24hr·m <sup>2</sup> ·mm Hg)
RADON DIFFUSION COEFFICIENT	K124/02/95	< 1.1 x 10 <sup>-13</sup> m <sup>2</sup> /s	
METHANE PERMEANCE	ASTM D 1434	< 1.7 x 10 <sup>-10</sup> m <sup>2</sup> /d·atm 0.32 GTR (Gas Transmission Rate) ml/m <sup>2</sup> ·D·ATM	

## VaporBlock<sup>®</sup> Plus<sup>™</sup> Placement

All instructions on architectural or structural drawings should be reviewed and followed.  
Detailed installation instructions accompany each roll of VaporBlock<sup>®</sup> Plus<sup>™</sup> and can also be located on our website.  
ASTM E-1643 also provides general installation information for vapor retarders.



VaporBlock<sup>®</sup> Plus<sup>™</sup> is a seven-layer co-extruded barrier made using high quality virgin-grade polyethylene and EVOH resins to provide unmatched impact strength as well as superior resistance to gas and moisture transmission.

Note: To the best of our knowledge, unless otherwise stated, these are typical property values and are intended as guides only, not as specification limits. Chemical resistance as well as other performance criteria is not implied or given and actual testing must be performed for applicability in specific applications and/or conditions. RAVEN INDUSTRIES MAKES NO WARRANTIES AS TO THE FITNESS FOR A SPECIFIC USE OR MERCHANTABILITY OF PRODUCTS REFERRED TO, no guarantee of satisfactory results from reliance upon contained information or recommendations and disclaims all liability for resulting loss or damage.



### Engineered Films Division

P.O. Box 5107  
Sioux Falls, SD 57117-5107  
Ph: (605) 335-0174 • Fx: (605) 331-0333

Limited Warranty available at [www.RavenEFD.com](http://www.RavenEFD.com)

Toll Free: 800-635-3456  
Email: [efdsales@ravenind.com](mailto:efdsales@ravenind.com)  
[www.ravenefd.com](http://www.ravenefd.com)

10/10 EFD 1125

# VaporBlock<sup>®</sup> Plus<sup>™</sup>

UNDERSLAB VAPOR RETARDER / GAS BARRIER

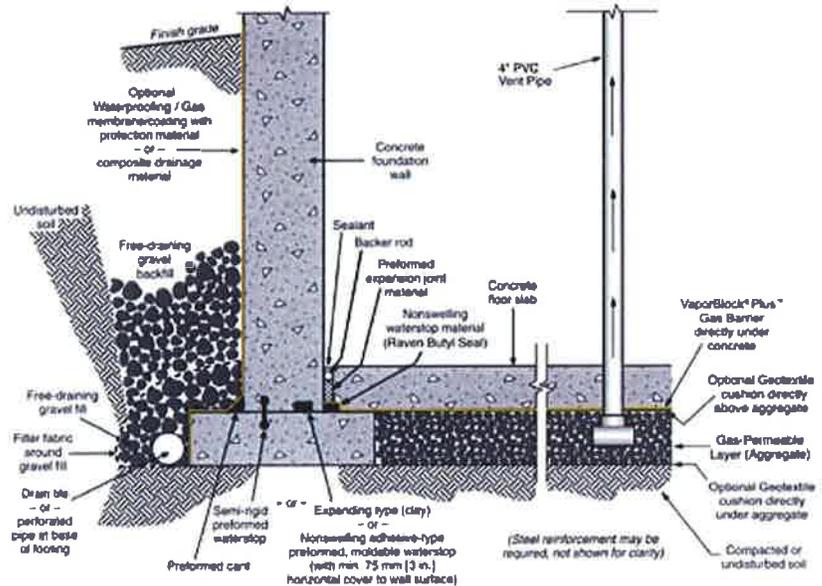
## INSTALLATION GUIDELINES

**Please Note:** Read these instructions thoroughly before installation to ensure proper use of VaporBlock<sup>®</sup> Plus<sup>™</sup>. ASTM E 1465, ASTM E 2121 and, ASTM E 1643 also provide valuable information regarding the installation of vapor / gas barriers. When installing this product, contractors shall conform to all applicable local, state and federal regulations and laws pertaining to residential and commercial building construction.

- When VaporBlock Plus gas barrier is used as part of an active control system for radon or other gas, a ventilation system will be required.
- If designed as a passive system, it is recommended to install a ventilation system that could be converted to an active system if needed.

### Materials List:

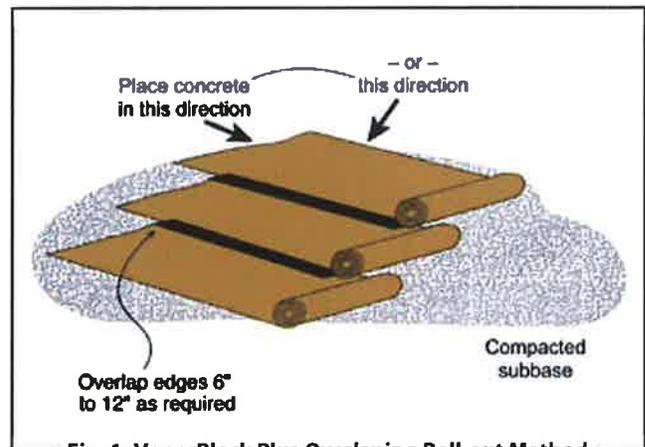
VaporBlock<sup>®</sup> Plus<sup>™</sup> Vapor / Gas Barrier  
 VaporBond Plus 4" Foil Seaming Tape  
 Butyl Seal 2-Sided Tape  
 VaporBoot Plus Pipe Boots 12/Box (recommended)  
 VaporBoot Tape (optional)



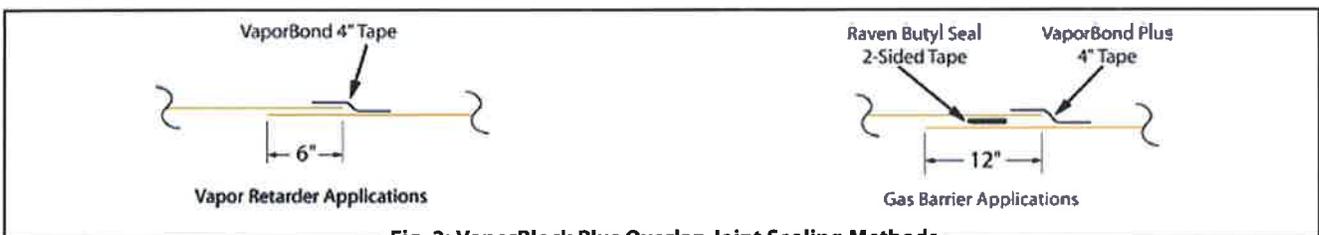
**Elements of a moisture/gas-resistant floor system. General illustration only.**  
 (Note: This example shows multiple options for waterstop placement.)

## VAPORBLOCK<sup>®</sup> PLUS<sup>™</sup> PLACEMENT

- 1.1. Level and tamp or roll granular base as specified. A base for a gas-reduction system may require a 4" to 6" gas permeable layer of clean coarse aggregate as specified by your architectural or structural drawings after installation of the recommended gas collection system. In this situation, a cushion layer consisting of a non-woven geotextile fabric placed directly under VaporBlock<sup>®</sup> Plus<sup>™</sup> will help protect the barrier from damage due to possible sharp coarse aggregate.
- 1.2. Unroll VaporBlock Plus running the longest dimension parallel with the direction of the pour and pull open all folds to full width. (Fig. 1)
- 1.3. Lap VaporBlock Plus over the footings and seal with Raven Butyl Seal tape at the footing-wall connection. Prime concrete surfaces and assure they are dry and clean prior to applying Raven Butyl Seal Tape. Apply even and firm pressure with a rubber roller. Overlap joints a minimum of 6" and seal overlap with Raven VaporBond Tape. When used as a gas



**Fig. 1: VaporBlock Plus Overlapping Roll-out Method**



**Fig. 2: VaporBlock Plus Overlap Joint Sealing Methods**

Top original diagram and figure #1 were reprinted with permission by the Portland Cement Association. Reference: Kanare, Howard M., Concrete Floors and Moisture, EB119, Portland Cement Association, Skokie, Illinois, and National Ready Mixed Concrete Association, Silver Spring, Maryland, USA, 2008, 176 pages.

# SINGLE PENETRATION PIPE BOOT INSTALLATION

barrier, overlap joints a minimum of 12" and seal in-between overlap with 2-sided Raven Butyl Seal Tape. Then seal with VaporBond Plus Tape centered on the overlap seam. (Fig. 2)

- Seal around all plumbing, conduit, support columns or other penetrations that come through the **VaporBlock Plus** membrane. Pipes four inches or smaller can be sealed with Raven VaporBoot Plus preformed pipe boots. VaporBoot Plus preformed pipe boots are formed in steps for 1", 2", 3" and 4" PVC pipe or IPS size and are sold in units of 12 per box (Fig. 3 & 5).

Pipe boots may also be fabricated from excess **VaporBlock Plus** membrane (Fig. 4 & 6) and sealed with VaporBoot Tape or VaporBond Plus Tape (sold separately).

*Reminder Note: All holes or penetrations through the membrane will need a patch cut to a minimum of 12" from the opening in all directions.*

To fabricate pipe boots from **VaporBlock Plus** excess material (see Fig. 4 & 6 for A-F):

- Cut a square large enough to overlap 12" in all directions.
- Mark where to cut opening on the center of the square and cut four to eight slices about 3/8" less than the diameter of the pipe.
- Force the square over the pipe leaving the tightly stretched cut area around the bottom of the pipe with approximately a 1/2" of the boot material running vertically up the pipe. *(no more than a 1/2" of stretched boot material is recommended)*
- Once boot is positioned, seal the perimeter to the membrane by applying 2-sided Raven Butyl Seal Tape in between the two layers. Secure boot down firmly over the membrane taking care not to have any large folds or creases.
- Use VaporBoot Tape or VaporBond Plus Tape to secure the boot to the pipe.
 

VaporBoot Tape (option) – fold tape in half lengthwise, remove half of the release liner and wrap around the pipe allowing 1" extra for overlap sealing. Peel off the second half of the release liner and work the tape outward gradually forming a complete seal.

VaporBond Plus Tape (option) - Tape completely around pipe overlapping the to get a tight seal against the pipe.
- Complete the process by taping over the boot perimeter edge with VaporBond Plus Tape to create a monolithic membrane between the surface of the slab and gas/moisture sources below and at the slab perimeter. (Fig. 4 & 6)

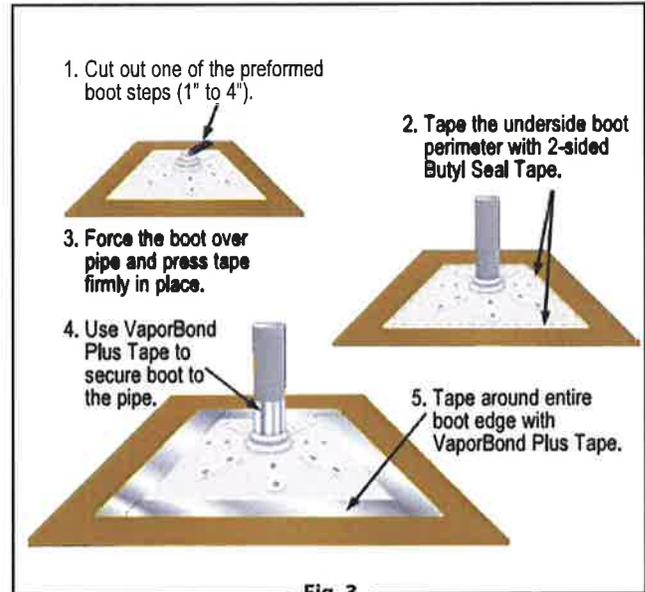


Fig. 3

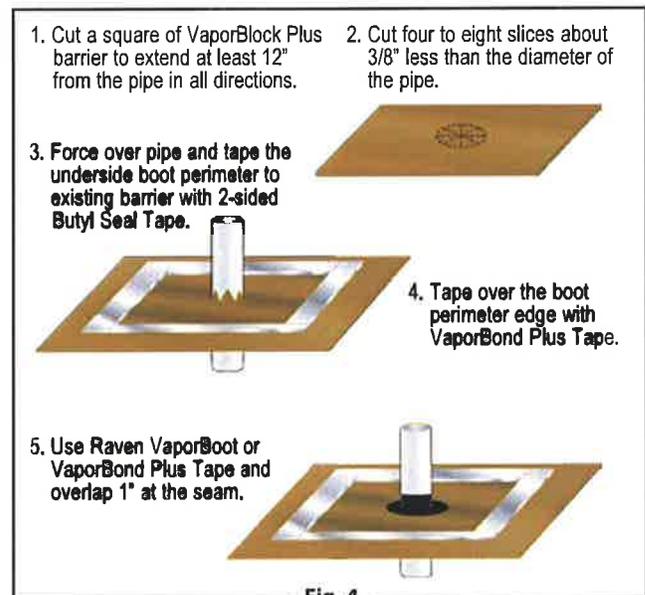


Fig. 4

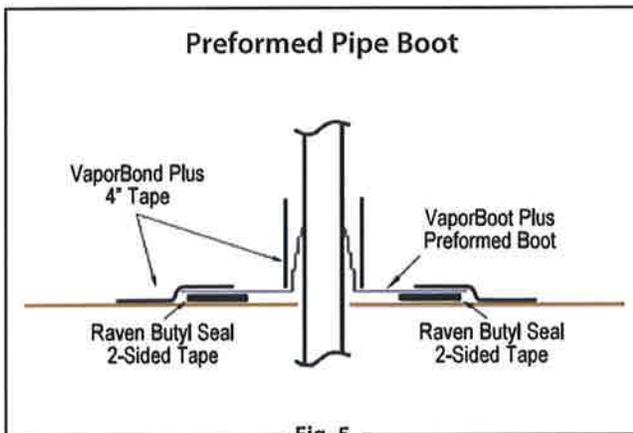


Fig. 5

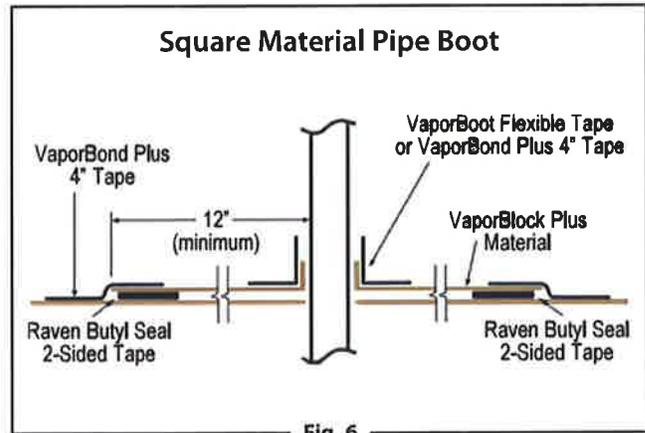


Fig. 6

Original figure #4 diagram is reprinted with permission by the Portland Cement Association, Reference: Kanare, Howard M., Concrete Floors and Moisture, EB118, Portland Cement Association, Skokie, Illinois, and National Ready Mixed Concrete Association, Silver Spring, Maryland, USA, 2008, 176 pages.

## MULTIPLE PENETRATION PIPE BOOT INSTALLATION

1.5. For side-by-side multiple penetrations;

- A) Cut a patch large enough to overlap 12" in all directions (Fig. 7) of penetrations.
- B) Mark where to cut openings and cut four to eight slices about 3/8" less than the diameter of the penetration for each.
- C) Slide patch material over penetration to achieve a tight fit.
- D) Once patch is positioned, seal the perimeter to the membrane by applying 2-sided Raven Butyl Seal Tape in-between the two layers. (Fig. 8)
- E) After applying Raven Butyl Seal Tape between the patch and membrane, tape around each of the penetrations and the patch with VaporBond Plus 4" foil tape. (Fig. 9) For additional protection apply an acceptable polyurethane elastomeric sealant around the penetrations. (Fig. 10)

1.6. Holes or openings through **VaporBlock Plus** are to be repaired by cutting a piece of **VaporBlock Plus** 12" larger in all directions from the opening. Seal the patch to the barrier with 2-sided Raven Butyl Seal Tape and seal the edges of the patch with VaporBond Plus Tape.

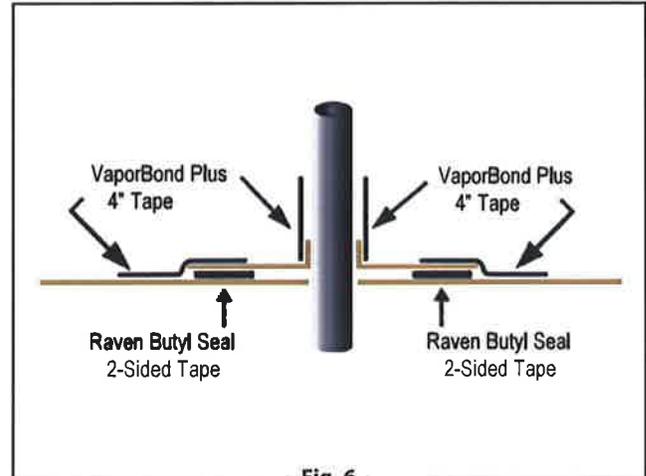


Fig. 6

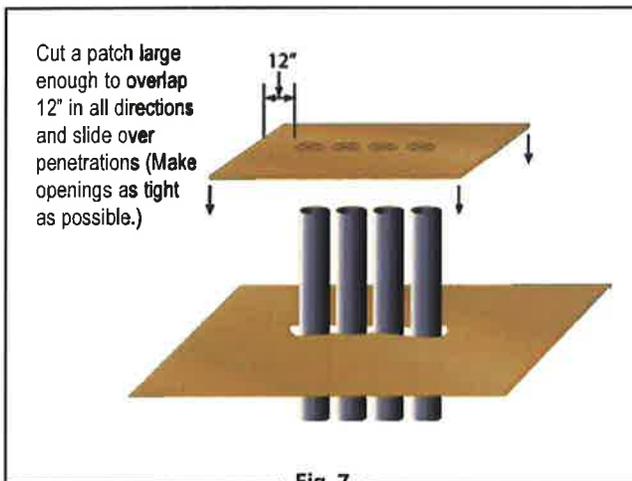


Fig. 7

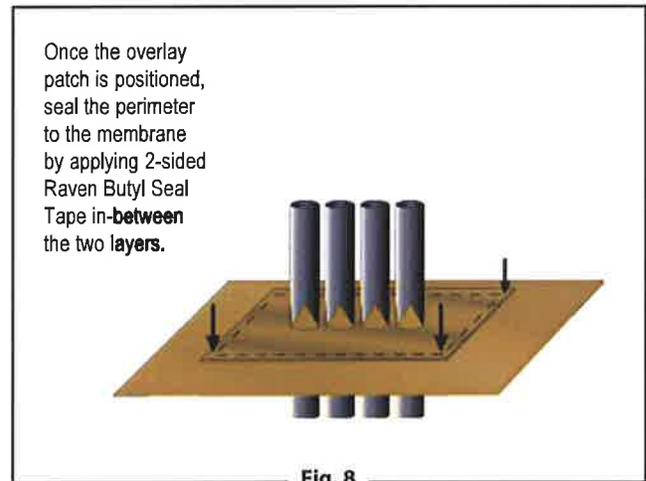


Fig. 8

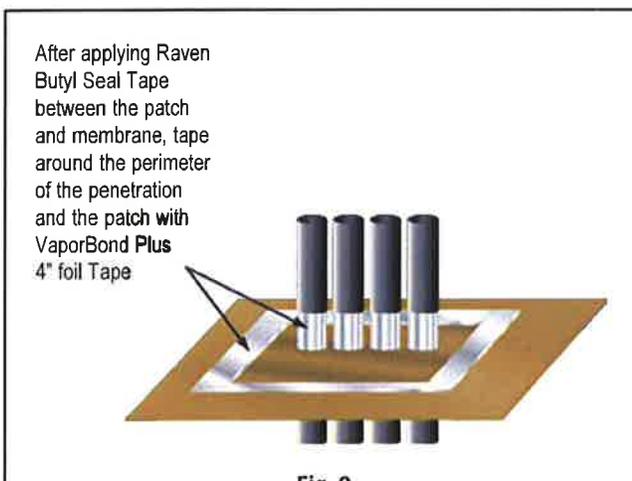


Fig. 9

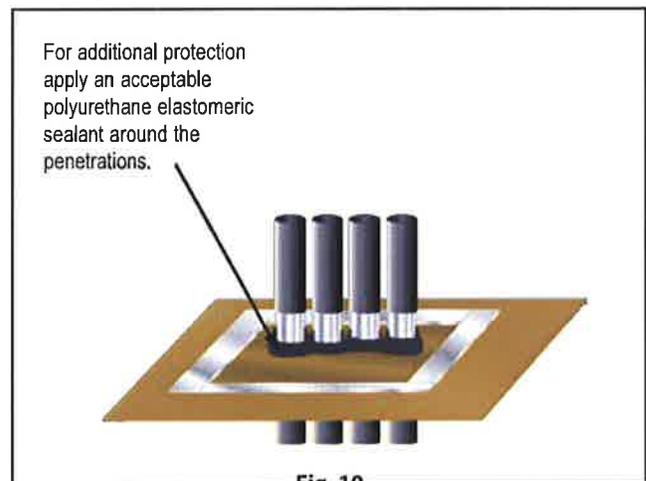


Fig. 10

## VAPORBLOCK® PLUS™ PROTECTION

- 2.1. When installing reinforcing steel and utilities, in addition to the placement of concrete, take precaution to protect **VaporBlock Plus**. Carelessness during installation can damage the most puncture-resistant membrane. Sheets of plywood cushioned with geotextile fabric temporarily placed on **VaporBlock Plus** provide for additional protection in high traffic areas including concrete buggies.
- 2.2. Use only brick-type or chair-type reinforcing bar supports to protect **VaporBlock Plus** from puncture.
- 2.3. Avoid driving stakes through **VaporBlock Plus**. If this cannot be avoided, each individual hole must be repaired per section 1.6.
- 2.4. If a cushion or blotter layer is required in the design between **VaporBlock Plus** and the slab, additional care should be given if sharp crushed rock is used. Washed rock will provide less chance of damage during placement. Care must be taken to protect blotter layer from precipitation before concrete is placed.



Note: To the best of our knowledge, these are typical installation procedures and are intended as guidelines only. Architectural or structural drawings must be reviewed and followed as well on a project basis. NO WARRANTIES ARE MADE AS TO THE FITNESS FOR A SPECIFIC USE OR MERCHANTABILITY OF PRODUCTS OR GUIDELINES REFERRED TO, no guarantee of satisfactory results from reliance upon contained information or recommendations and we disclaim all liability for resulting loss or damage.



RAVEN INDUSTRIES, INC. / Engineered Films Division  
P.O. Box 5107 • Sioux Falls, SD 57117-5107  
Ph: (605) 335-0174 • Fx: (605) 331-0333  
**Toll Free: 800-635-3456**



**ISO 9001:2000**  
CERTIFIED MANAGEMENT SYSTEM

[www.vaporblockplus.com](http://www.vaporblockplus.com)

6/09 EFD 1127

**Addendum 4**  
Signed and Stamped Plans





PROJECT NAME  
470 DRIGGS AVENUE  
BROOKLYN, NEW YORK

DATE: 04/11  
SCALE: AS NOTED  
DRAWING TITLE: SUB-SLAB DEPRESSION DEPRESSURIZATION SYSTEM  
DRAWING NUMBER: M-105.00  
SHEET 3 OF 3  
ISSUE: 05/04/11

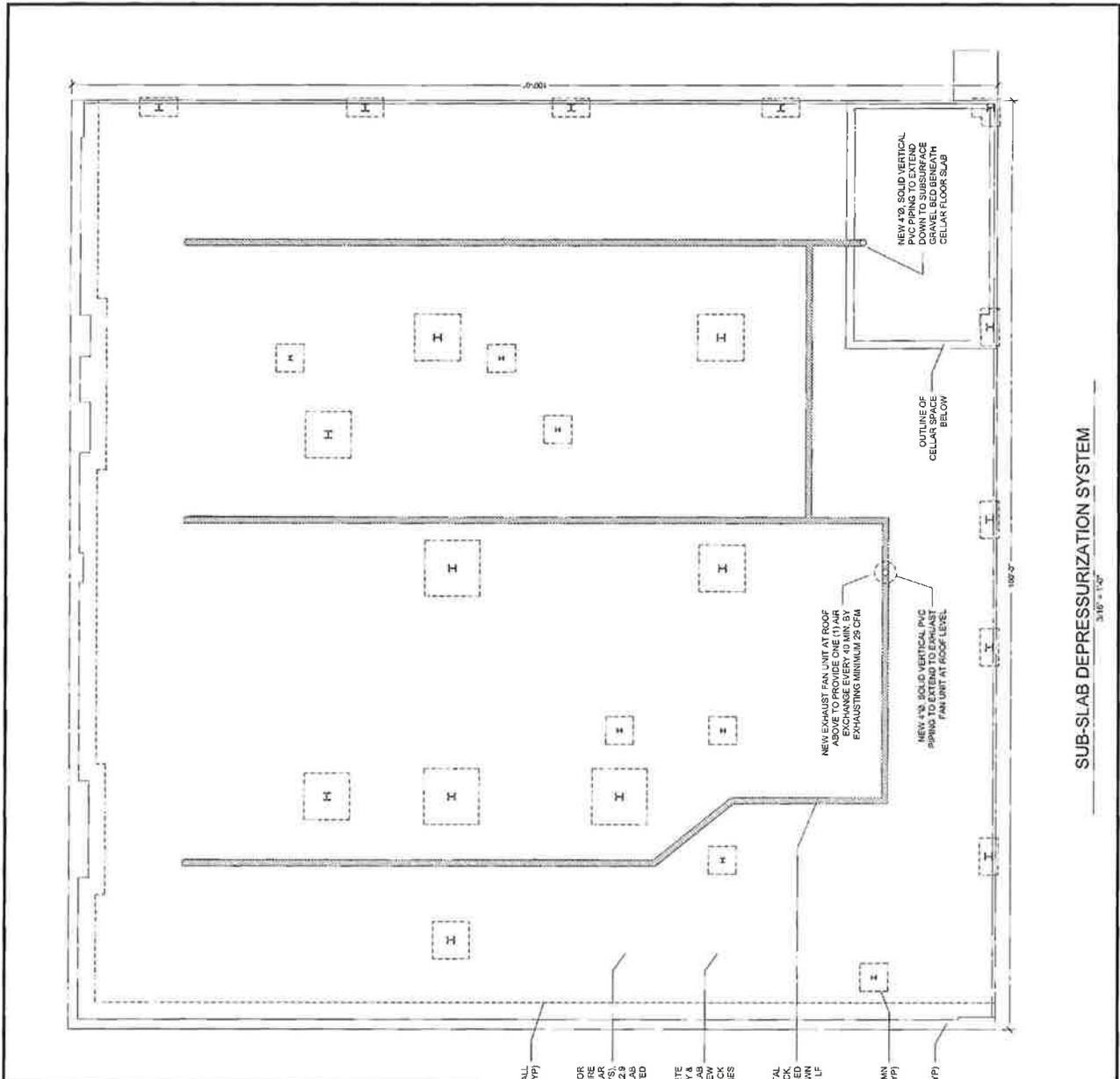
05 ENGINEERING SERVICES, P.C.  
WESTFIELD, N.J. 07090  
PHONE: (973) 985-4718  
FAX: (908) 201-1118  
EMAIL: dcooper@eservices.net



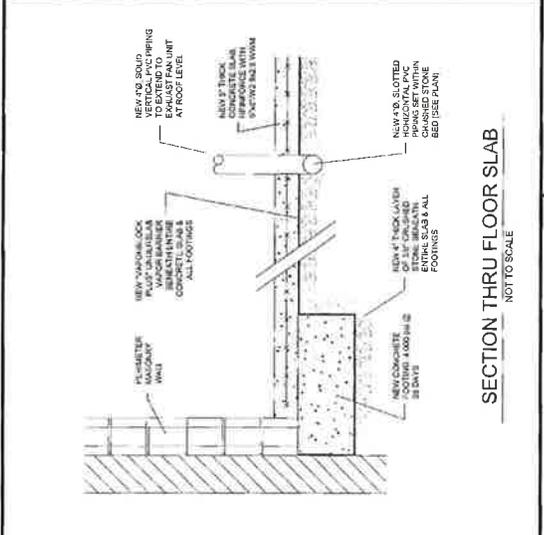
NO.	DATE	REVISIONS

PROJECT NUMBER: 470 DRIGGS  
DATE: 04/11  
SCALE: AS NOTED

DRAWING TITLE: SUB-SLAB DEPRESSION DEPRESSURIZATION SYSTEM  
DRAWING NUMBER: M-105.00  
SHEET 3 OF 3  
ISSUE: 05/04/11



SUB-SLAB DEPRESSION SYSTEM  
3/16" = 1'-0"



SECTION THRU FLOOR SLAB  
NOT TO SCALE

- LINE OF NEW CONCRETE WALL FOOTING (TYP)
- NEW 5" THICK CONCRETE FLOOR SLAB ON GRADE AT ENTIRE GRADE LEVEL. CELLAR FLOOR JOIST IS 2" x 4" SIPS WITH 1/2" x 1/2" x 1/2" W/WALL. SET OVER UNDERSLAB VAPOR BARRIER NOTED
- BENEATH ENTIRE CONCRETE SLAB & ALL FOOTINGS, SUPPLY A NEW 6 MIL POLYETHYLENE VAPOR BARRIER SYSTEM PLUS BY RAVEN INDUSTRIES
- NEW 420, SLOTTED HORIZONTAL PVC PIPING SET WITHIN 4" THICK REFINISHED STONE BED BENEATH CELLAR FLOOR SLAB. HATCHED, APPROX. 285 LF
- LINE OF NEW CONCRETE COLUMN FOOTING (TYP)
- PERIMETER WALLS (TYP)

**Addendum 5**  
Certified Project Description



# Betro Design Group

ARCHITECT/EXPEDITING

29-10 120<sup>th</sup> Street, Mezzanine Floor  
(212) 481-7448 Office (718)886-9358 Fax  
[bernie@betrodesign.com](mailto:bernie@betrodesign.com)

August 30, 2011

New York City Office of Environmental Remediation  
City Brownfield Cleanup Program  
c/o Shaminder Chawla  
100 Gold Street, 2<sup>nd</sup> Floor  
New York, NY 10038

*Re: 470 Driggs Avenue, Bklyn NY  
OER No. 11EHAZ206K  
Alteration # 320258403*

To Shaminder Chawla:

As Architect of record for the above mentioned premises and application, I hereby state that the project description as filed with the Department of Buildings is to convert existing 10,000 Sq. Ft. Factory at first floor to Retail Store (food related) and Eating & Drinking Establishments along with the addition of a partial second floor. The existing partial cellar floor shall remain as a utility room in conjunction with the commercial spaces. There shall be a centralized kitchen that will service the majority of the Eating & Drinking Establishments and storage for these establishments will be accessible on the second floor.

We are proposing all new interior construction including the removal of the existing roof to create a new second floor. The proposed new work shall include structural, mechanical, plumbing and sprinkler work as well as a new façade facing Driggs Avenue and North 10<sup>th</sup> Street. There shall also be new concrete footing and slab work as described by the engineer (Daniel Siegel) which will incorporate the installation of a vapor barrier and active sub-slab depressurization system as requested by OER.

If you should have any questions, please do not hesitate to call me.

Sincerely,

  
Bernard Ocasio, R.A.



**Addendum 6**



# **NYC Brownfield Cleanup Program**

This property is enrolled in the New York City Brownfield Cleanup Program for environmental remediation. This is a voluntary program administered by the NYC Office of Environmental Remediation.

For more information, log on to:

**[www.nyc.gov/oer](http://www.nyc.gov/oer)**

If you have questions or would like more information,  
please contact:

Shaminder Chawla at (212) 788-8841  
or email us at [brownfields@cityhall.nyc.gov](mailto:brownfields@cityhall.nyc.gov)

470 Driggs Avenue Site  
Site #: 12CBCP021K

**Addendum 7**  
Updated Project Schedule

## 7.0 SCHEDULE

The table below presents a schedule for the proposed remedial action and reporting. If the schedule for remediation and development activities changes, it will be updated and submitted to OER. Currently, a four to five month remediation period is anticipated.

Schedule Milestone	Weeks from Remedial Action Start	Duration (weeks)
OER Approval of RAWP	0	-
Fact Sheet 2 announcing start of remedy	0	-
Mobilization	1	1
Remedial Excavation	2	8
Demobilization	10	1
Record Declaration of Covenants and Restrictions	12	2
Submit Remedial Action Report	20	8

**Addendum 8**  
Updated CHASP

# **SITE-SPECIFIC CONSTRUCTION HEALTH AND SAFETY PLAN**

**470 Driggs Avenue  
Brooklyn, New York**

## **1.0 INTRODUCTION**

This Site-Specific Health and Safety Plan (HASP) was prepared in accordance with the requirements and guidelines of the applicable Occupational Safety and Health Administration (OSHA) requirements in 29 Code of Federal Regulations (CFR) Part 1910.120. This HASP has been prepared for the property at 470 Driggs Avenue, Brooklyn, New York. The HASP will be available for inspection and review by site workers and regulatory personnel while work activities involving the installation of soil borings. Site workers are required to comply with this HASP when conducting the site activities listed in Section B. Site workers will notify the Site Safety Officer of matters regarding health, safety and security.

All personnel and subcontractors must familiarize themselves with material contained herein, including special conditions and facilities located near each project as listed on the following pages. The information contained in this HASP pertains to installation of soil borings, collection of soil and groundwater samples for laboratory analysis.

## **2.0 ENTRY OBJECTIVES**

The objective of entry to the Work Area is to excavate for new footing within the present commercial building. Soil has been documented to be impacted by contaminants associated with urban historic fill and petroleum related compounds. Soil excavated will be stockpiled inside the commercial structure until off-site disposal is arranged. Work performed at the site will be done in accordance with 29 CFR 1926, Subpart P, and all other appropriate federal and state regulations.

## **3.0 ON-SITE ORGANIZATION AND COORDINATION**

Key project personnel and their responsibilities to carry out the stated job function at the site are discussed below.

Brinkerhoff Environmental Services, Inc. (Brinkerhoff) will provide health and safety support, including air monitoring during excavation of footings. The contact information for the designated person to provide Health and Safety support for this project is:

Duane Shinton, Health and Safety Officer  
Brinkerhoff Environmental Services, Inc.  
1913 Atlantic Avenue, Suite R5  
Manasquan, New Jersey 08736  
Phone: (732) 223-2225, Fax: (732) 223-3666

The Construction Health and Safety Officer for overall administration of this CHASP during site work will be assigned upon start of construction. The Construction Health and Safety Officer's responsibilities will include overall project safety and health monitoring for the work to be performed. The Construction Health and Safety Officer will enforce and audit the effectiveness of the CHASP on a continuing basis and make changes to ensure that the intent of the CHASP is maintained.

#### **4.0 ON-SITE CONTROL**

##### ***Excavating Precautions (Utilities)***

1. A utility markout of all underground utilities will be completed prior to the inception of ground-intrusive work, in compliance with 29 CFR 1926.651. The utility markout will utilize the One Call system prior to the commencement of operations at the site. Work will commence less than 10 business days after contacting the One Call system.
2. Visually inspect all utility markout locations on site.
3. Operations in the vicinity of overhead power lines will be conducted in accordance with 29 CFR 1910.333 (c)(3).
4. Conduct all excavations and subsequent soil sampling in the vicinity of a utility with caution.
5. If a utility line is damaged, call the utility company immediately.

##### ***Dust Prevention and Control (Track out onto Paved Public Roadways)***

1. Vehicles leaving the site should be cleaned/decontaminated prior to exiting.
2. Promptly remove mud, dirt, or similar debris from the paved road.
3. Water flush and/or vacuum sweep the paved road.
4. Prepare unpaved site ingress and egress points by applying gravel to the surface to control track out and erosion.
5. The surface of the ingress and egress points must be kept adequately wet with water.

##### ***Dust Prevention and Control (General Procedures for Unpaved Areas)***

1. Apply gravel to entrance, exit, and other areas of the site that are likely to see heavy vehicular traffic.
2. Limit vehicle traffic to required vehicles.
3. Limit vehicle speeds on unpaved areas of the site. Placement of signs near the site entrance that denote site speed restrictions is advised.
4. Apply sufficient water to unpaved surfaces that are likely to be disturbed to keep them adequately wet. According to 40 CFR Part 61, adequately wet means sufficiently mixed or penetrated with liquid to prevent the release of particulates. Visibly detectable dust emissions are the primary indication that the unpaved work area has not been kept adequately wet.

### ***Dust Prevention and Control (Procedures for Grading and Excavation)***

1. When soil is to be moved or stockpiled, the drop height of the soil should be reduced as much as possible.
2. Limit the height of soil stockpiles.
3. Limit the disturbance of soil stockpiles.
4. Keep the surface of stockpiles adequately wet.
5. All stockpiled soil shall be covered with plastic sheeting or other suitable cover material.
6. RECORD AND MONITOR ALL DUST PREVENTION/CONTROL ACTIVITIES. Recording this information will provide a superior method of monitoring and evaluating the success of the dust prevention and control plan.

In the event that visible dust is observed, associated work activities are to stop immediately and measures to mitigate commence as soon as possible (i.e., wetting down material with water).

## **5.0 HAZARD EVALUATION**

### **5.1 Environmental Hazards**

At present, suspected contaminants in the subsurface soil constitutes an environmental hazard. Various chemical compounds have been identified in the soil and groundwater at low concentrations. If encountered in the soil at higher concentrations than anticipated, exposure concerns could become a health issue. The following are known or suspected to be present at the site.

#### **5.1.1 Volatile Organic Compounds (VOCs)**

VOCs such as benzene, toluene, ethyl benzene, and xylene (BTEX), are present at low concentrations within soil. In some cases, the chemical components may be present in non-aqueous phase liquids (NAPL) such as fuels, oils, or tar within subsurface soils planned for excavation. These compounds generally have a depressant effect on the central nervous system (CNS), may cause chronic liver and kidney damage, and some are suspected human carcinogens. Benzene is a suspected human carcinogen. Acute exposure may include headache, dizziness, nausea, and skin and eye irritation. The primary route of exposure to VOCs is through inhalation; therefore, air monitoring and respiratory protection are the primary controls against exposure to VOCs.

### 5.1.2 Urban Historic Fill

Urban historic fill has been identified on the property. The urban historic fill is impacted with poly nuclear aromatic hydrocarbons (PAHs) and metals. The following substances are known or suspected might be present on site in concentrations that exceed the New York State Department of Conservation's (NYSDEC's) Subpart 375-6 Remedial Cleanup Objectives (RCO) for Commercial Use.

SUBSTANCE IN SITE SOILS	CONCENTRATIONS* (parts per million)
Benzo(a)anthracene	8.2
Benzo(a)pyrene	6.2
Benzo(b)fluoranthene	6.1
Dibenz(a,h)anthracene	0.6
Copper	2590
Lead	1260

The following are exposure limits and symptoms of overexposure. Material Safety Data Sheets are provided as an attachment to this CHASP.

*Contaminant*

PAHs (Example, benzo (a) anthracene)

*Exposure Limits*

OSHA PEL: 0.2mg/m<sup>3</sup>

NIOSH REL: 0.1mg/m<sup>3</sup>

*Symptoms of Overexposure*

Eye irritation, nausea, vomiting, diarrhea and confusion

*Contaminant*

Lead

*Exposure Limits*

OSHA PEL: 0.050 mg/m<sup>3</sup>

NIOSH REL: 0.100 mg/m<sup>3</sup>

*Systems of Overexposure*

Weakness, insomnia, abdominal pain, eye irritation

*Contaminant*

Mercury

*Exposure Limits*

OSHA PEL: 0.1 mg/m<sup>3</sup>

NIOSH REL: 0.1mg/m<sup>3</sup>

*Symptoms of Overexposure*

Eye irritation, cough, chest pain, insomnia, tremors. Ulceration of nasal septum, hyper pigmentation of skin, respiratory irritation

## 5.2 Physical Hazards

The work to be completed at the site in conjunction with this CHASP consists of excavation for the installation of new footings. Additional physical hazards expected on site include buried utilities, slip, trip, and fall hazards, and hazards associated with heavy machinery.

## 6.0 HAZARD MONITORING

Air monitoring and visual inspection of soil during excavation operations should be conducted. A photo ionization detector (PID) will be used to screen both the soil and ambient air for the presence of VOCs.

The following are the Short Term (ST) Exposure Limits on a 15 minute time weighted average and the Immediate Danger to Life and Health (IDLH) conditions for VOCs which may be present in the subsurface soil. The levels are presented in parts per million (ppm).

Compound	ST	IDLH
Benzene	5 ppm	500 ppm
Ethyl benzene	100 ppm	500 ppm
Toluene	150 ppm	500 ppm
Xylenes	150 ppm	900 ppm

### 6.1 Personal Protective Equipment (PPE)

Based upon evaluation of potential hazards, the following levels of personal protection have been designated for the Work Area:

Location	Job Function	Level of Protection			
Entire Site	Excavation	A	B	C	<input checked="" type="checkbox"/> D

If VOCs are detected with the indicate a need to upgrade the PPE, the Health and Safety Officer will stop all work and evaluate the level of protection required to complete the project. A determination will be made regarding the safety of the situation and the type of PPE that will be required. *At no time will work be conducted in an environment where an IDLH condition could be present.*

The following are monitoring levels for which a change in the level of protection or evacuation of the work area would be implemented. If the work area is evacuated, procedures such as the use of ventilation would be utilized if possible to lower monitoring levels to below the threshold for raising the level of protection.

PID 150 ppm

*It should be noted that the work proposed will not be performed in a level of PPE other than Level D. Procedures would have to be put in place to lower the PPE requirement to Level D, should conditions suggest an increase in the level of PPE required.*

Precautions will be implemented to limit direct contact with the soil or inhalation of dust. At a minimum, nitrile gloves are to be worn when handling soil, dust control procedures used if necessary and through hand washing prior to handling food.

Specific protective equipment for potential levels of protection is as follows:

### **6.1.1 Levels A & B**

Since levels A & B are for IDLH environments, they are not applicable to this project.

### **6.1.2 Level C**

The concentration(s) and type(s) of airborne substance(s) is (are) known and the criteria for using air-purifying respirators are met. The following constitute Level C equipment:

- National Institute for Occupational Safety and Health (NIOSH)-approved full-face or half-face air purifying respirators;
- Chemical-resistant clothing (overalls, chemical-splash suit, disposable chemical-resistant overalls);
- Gloves, outer and inner, chemical-resistant;
- Boots, outer, chemical-resistant, with steel toe and shank;
- Optional chemical resistant boot covers;
- Hard hat;
- Safety glasses with side shields;
- Face shield and safety glasses when not wearing a full face respirator; and,
- Hearing protection when working in noise hazardous areas or near operating heavy equipment.

### **6.1.3 Level D**

A work uniform providing no respiratory protection is used only for prevention of skin contamination. The following constitute Level D equipment:

- Coveralls or other skin-protective clothing (long-sleeve shirts and long pants);
- Gloves;
- Boots or shoes, chemical-resistant, steel toe and shank;
- Optional chemical resistant boot covers;
- Safety glasses or chemical splash goggles;
- Hard hat;
- Hearing protection when working in noise-hazardous areas or near operating heavy equipment; and,
- High-visibility safety vest.

***NO CHANGES TO THE SPECIFIED LEVELS OF PROTECTION SHALL BE MADE WITHOUT THE APPROVAL OF THE CONSTRUCTION SITE SAFETY OFFICER.***

## 7.0 COMMUNICATION PROCEDURES

The following standard hand signals will be used in case of emergency:

<u>Message</u>	<u>Interpretation(s)</u>
Hands gripping throat .....	Out of air; can't breathe.
Grip partner's wrist.....	Leave area immediately.
Hands on top of head .....	Need assistance.
Thumbs up .....	OK; I am all right; I understand.
Thumbs down.....	No; Negative.

## 8.0 DECONTAMINATION PROCEDURES

Should hazardous materials be encountered, a decontamination procedure will be implemented. Generated waste, such as disposable PPE, will be disposed of in accordance with applicable local, state, and federal regulations. The decontamination protocol shall be used with the following decontamination stations:

- (1) Equipment drop;
- (2) Detergent and Water Rinse (optional); and,
- (3) Remove PPE (if utilized) and place in waste container

Decontamination of equipment is not anticipated to be required for this project.

## 9.0 MEDICAL MONITORING

As per 29 CFR 1910.120 (b)(4)(ii)(D) and in accordance with 29 CFR 1910.120 (f), persons engaging in on-site activities during which they are or may be exposed to hazardous substances or health hazards at or above the permissible exposure limits or published exposure levels for 30 days or more a year are included in a Medical Surveillance Program.

The timing and location of this project may be such that heat/cold stress could pose a threat to the health and safety of site personnel. Work/rest regimens will be employed as deemed necessary by the Site Safety Officer so site workers do not suffer adverse effects from heat/cold stress. Special clothing and an appropriate diet and fluid intake will be recommended to all on-site personnel to further reduce these temperature-related hazards. Site workers should stop work and notify the Site Safety Officer when they observe symptoms of heat/cold stress in themselves or co-workers.

## **9.1 Heat Stress Monitoring**

Heat stress monitoring of personnel wearing protective clothing (i.e., impermeable fabric) should be considered when the ambient temperature is 70 degrees Fahrenheit or above. To monitor the worker, one of the following methods should be employed:

- Heart rate should be measured by the radial pulse for a 30-second period as early as possible in the rest period. If the heart rate exceeds 110 beats per minute, shorten the next work cycle by one-third (0.3) and keep the rest period the same. If the heart rate still exceeds 110 beats per minute at the next rest period, shorten the following cycle by one-third (0.3).
- Oral temperature should be measured at the end of the work period (before drinking). If oral temperature exceeds 99.6 degrees Fahrenheit, shorten the next work cycle by one-third (0.3) without changing the rest period. If the oral temperature still exceeds 99.6 degrees Fahrenheit at the beginning of the next rest period, shorten the next work cycle by one-third (0.3). Do not permit a worker to wear a semipermeable or impermeable garment when his/her oral temperature exceeds 100.6 degrees Fahrenheit.

## **9.2 Cold Stress Monitoring**

Work/rest schedules must be altered to minimize the potential for cold stress. Cold stress is defined as a decrease in core body temperature to 96.8 degrees Fahrenheit and/or cold injury to body extremities. Decreases in core body temperature are associated with reduced mental alertness, reduction in rational decision-making, or loss of consciousness in severe cases. Symptoms of cold stress include pain in extremities (i.e., hands and feet) and severe shivering.

## **9.0 MEDICAL EMERGENCIES**

### **9.1 Emergency Medical Care**

- First Aid & Rescue Squad (Call 911).
- Wyckoff Heights Medical Center, 374 Stockholm Street, Brooklyn, NY
- Phone: 718-963-7272

### **9.2 Directions to Wyckoff Heights Medical Center**

See attached turn by turn driving directions and map.

### 9.3 List of Emergency Phone Numbers

Agency/Facility	Phone Number
All Services	911
Police	911
Fire Emergency	911
Wyckoff Heights Medical Center	718-963-7272

### 9.4 First Aid Equipment

First aid equipment is available on site at the following locations:

Equipment	Location
First Aid Kit	Field Vehicle
Fire Extinguisher	Field Vehicle

## 10.0 EMERGENCY PROCEDURES

On-site personnel will use the following standard emergency procedures. The Construction Health and Safety Officer shall be notified of on-site emergencies and be responsible for ensuring that the appropriate procedures are followed.

### 10.1 Personnel Injury in the Work Area

Upon notification of an injury in the Work Area, the Construction Health and Site Safety Officer will assess the nature of the injury. For a true emergency, 911 shall be called and local emergency services personnel shall initiate the appropriate first aid and contact the designated medical facility, if required.

If the cause of the injury or loss of the injured person does not affect the performance of site personnel, operations may continue with the local emergency services personnel initiating the appropriate first aid and necessary follow-up, as stated above. If the injury increases the risk to others, the designated emergency signal shall be sounded and all site personnel shall move to the site entrance for further instructions. Activities on site will stop until the added risk is removed or minimized. No persons shall reenter the Work Area until the cause of the symptoms or injury is determined by the Construction Health and Safety Officer.

## **10.2 Fire/Explosion**

Upon notification of a fire or explosion on site, the designated emergency signal (three [3] horn blasts) shall be sounded, and all site personnel shall be assembled at the site entrance. The fire department shall be alerted, and all personnel shall be moved to a safe distance from the involved area.

## **10.3 PPE Failure**

If utilization of PPE is necessitated by conditions in the Work Area and a site worker experiences a failure or alteration of protective equipment which affects the protection factor, that person shall immediately leave the Work Area. Reentry shall not be permitted until the equipment has been repaired or replaced.

## **10.4 Other Equipment Failure**

If other equipment on site fails to operate properly, the Construction Health and Safety Officer shall be notified and then determine the effect of this failure on continuing operations. If the failure affects the safety of personnel or prevents completion of the planned tasks, all personnel shall leave the Work Area until the situation is evaluated and appropriate actions taken.

In all situations, when an on-site emergency results in evacuation of the Work Area, personnel shall not reenter until

1. The conditions resulting in the emergency have been corrected.
2. The hazards have been reassessed.
3. The HASP has been revised.
4. Site personnel have been briefed regarding changes in the CHASP.





**Directions to Wyckoff Heights Medical Center**  
374 Stockholm Street, NY 11237 - (718) 963-7272  
3.0 mi – about 11 mins

**Save trees. Go green!**  
Download Google Maps on your phone at [google.com/gmm](http://google.com/gmm)



Loading...



 470 Driggs Ave, Brooklyn, NY 11211

- |   |   |                           |
|---|---|---------------------------|
| 1.  | Head <b>southwest</b> on <b>Driggs Ave</b> toward <b>N 10th St</b>        | go 302 ft<br>total 302 ft |
|  | 2. Turn left at the 2nd cross street onto <b>N 9th St</b><br>About 1 min  | go 0.2 mi<br>total 0.3 mi |
|  | 3. Turn right onto <b>Union Ave</b><br>About 2 mins                       | go 0.2 mi<br>total 0.4 mi |
|  | 4. Turn left onto <b>Metropolitan Ave</b><br>About 2 mins                 | go 0.9 mi<br>total 1.3 mi |
|  | 5. Turn right onto <b>Morgan Ave</b><br>About 2 mins                      | go 0.8 mi<br>total 2.1 mi |
|  | 6. Turn left onto <b>Flushing Ave</b><br>About 1 min                      | go 0.5 mi<br>total 2.5 mi |
|  | 7. Turn right onto <b>Wyckoff Ave</b><br>About 1 min                      | go 0.4 mi<br>total 2.9 mi |
|  | 8. Turn left onto <b>Stockholm St</b><br>Destination will be on the right | go 259 ft<br>total 3.0 mi |

 **Wyckoff Heights Medical Center**  
374 Stockholm Street, NY 11237 - (718) 963-7272

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Map data ©2011 Google

Directions weren't right? Please find your route on [maps.google.com](http://maps.google.com) and click "Report a problem" at the bottom left.

# Safety data for benzo(a)pyrene



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[Glossary](#) of terms on this data sheet.

The information on this web page is provided to help you to work safely, but it is intended to be an overview of hazards, not a replacement for a full Material Safety Data Sheet (MSDS). MSDS forms can be downloaded from the web sites of many chemical suppliers.

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## General

Synonyms: 1,2-benzopyrene, 6,7-benzopyrene, benzo[a]pyrene, B(a)P, BP, 3,4-benzopyrene, benzo[d,e,f]chrysene, 3,4-benzpyrene, benzpyrene, 3,4-benzylpyrene, 3,4-benz[a]pyrene, 3,4-BP, 3,4-benzopyrene

Molecular formula:  $C_{20}H_{12}$

CAS No: 50-32-8

EINECS No: 200-028-5

EU Index No: 601-032-00-3

## Physical data

Appearance: yellow crystals or powder [found in cigarette smoke, coal tar, fuel exhaust gas and in many other sources]

Melting point: 176 C

Boiling point: 495 C

Vapour density: 8.7 (air = 1)

Vapour pressure:

Density ( $g\ cm^{-3}$ ): 1.351

Flash point:

Explosion limits:

Autoignition temperature:

Water solubility: slight

## Stability

Stable. Incompatible with strong oxidizing agents.

## Toxicology

POISON. This material is an experimental carcinogen, mutagen, tumorigen, neoplastigen and teratogen. It is a probable carcinogen in humans and a known human mutagen. IARC Group 2A carcinogen. It is believed to cause bladder, skin and lung cancer. Exposure to it may damage the developing foetus. May cause reproductive damage. May be transferred to nursing infants through mother's milk. Skin, respiratory and eye irritant. May cause changes to the colour and properties of skin. Exposure to sunlight can increase the skin damage caused by this chemical.

### Toxicity data

(The meaning of any abbreviations which appear in this section is given [here.](#))

SCU-RAT LD50 50 mg kg<sup>-1</sup>

IPR-MUS LDLO 500 mg kg<sup>-1</sup>

IRN-FRG LDLO 11 mg kg<sup>-1</sup>

### Risk phrases

(The meaning of any risk phrases which appear in this section is given [here.](#))

R45 R46 R50 R53 R60 R61.

## Transport information

(The meaning of any UN hazard codes which appear in this section is given [here.](#))

Un No 2811. Packing group III. Hazard class 6.1.

## Environmental information

Very toxic in the environment - may cause long-term damage.

## Personal protection

Restricted material. Only to be used by trained workers. Prepare a full risk assessment before starting work. Safety glasses, gloves, good ventilation. Handle as a carcinogen. Do not dry sweep spills because of the risk of increasing the amount of airborne material.

### Safety phrases

(The meaning of any safety phrases which appear in this section is given [here.](#))

S45 S53 S60 S61.

[Return to [Physical & Theoretical Chemistry Lab. Safety home page.](#)]

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This information was last updated on December 20, 2004. We have tried to make it as accurate and useful as possible, but can take no responsibility for its use, misuse, or accuracy. We have not verified this information, and cannot guarantee that it is up-to-date.

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# Safety data for benzo[b]fluoranthene



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[Glossary](#) of terms on this data sheet.

The information on this web page is provided to help you to work safely, but it is intended to be an overview of hazards, not a replacement for a full Material Safety Data Sheet (MSDS). MSDS forms can be downloaded from the web sites of many chemical suppliers.

---

## General

Synonyms: 3,4-benzofluoranthene, benz[e]acenaphthanthrylene, 3,4-benz[e]acenaphthanthrylane, 2,3-benzofluoranthene, benzofluoranthrene, benzo[e]fluoranthene

Use:

Molecular formula:  $C_{20}H_{12}$

CAS No: 205-99-2

EINECS No: 205-911-9

EC Index No: 601-024-00-4

## Physical data

Appearance: off-white to tan powder

Melting point: 163 - 165 C

Boiling point:

Vapour density:

Vapour pressure:

Density ( $g\ cm^{-3}$ ):

Flash point:

Explosion limits:

Autoignition temperature:

Water solubility:

## Stability

Stable. Incompatible with strong oxidizing agents.

## Toxicology

Toxic. Probable human carcinogen. May act as an irritant.

### Toxicity data

(The meaning of any toxicological abbreviations which appear in this section is given [here.](#))

### Risk phrases

(The meaning of any risk phrases which appear in this section is given [here.](#))

R45 R50 R53.

## Environmental information

Very harmful to aquatic organisms - may cause long-term damage to the environment.

## Transport information

(The meaning of any UN hazard codes which appear in this section is given [here.](#))

## Personal protection

Safety glasses, good ventilation, disposable gloves. Treat as a possible carcinogen.

### Safety phrases

(The meaning of any safety phrases which appear in this section is given [here.](#))

S45 S53 S60 S61.

[Return to [Physical & Theoretical Chemistry Lab. Safety home page.](#)]

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# Safety data for copper

Click here for data on copper in [student-friendly format](#), from the HSci project

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[Glossary](#) of terms on this data sheet.

The information on this web page is provided to help you to work safely, but it is intended to be an overview of hazards, not a replacement for a full Material Safety Data Sheet (MSDS). MSDS forms can be downloaded from the web sites of many chemical suppliers.

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## General

Synonyms: bronze powder, arnwood copper, copper shot, anac 110, copper bronze, Raney copper  
Molecular formula: Cu  
CAS No: 7440-50-8  
EINECS No: 231-159-6

## Physical data

Appearance: reddish lustrous malleable metal  
Melting point: 1083 C  
Boiling point: 2595 C  
Specific gravity: 8.92  
Vapour pressure:  
Flash point:  
Explosion limits:  
Autoignition temperature:

## Stability

Stable. Incompatible with strong acids, active halogen compounds, chlorine, fluorine, iodine, bromine, ammonia. May react explosively with strong oxidizing agents.

## Toxicology

Dust may cause respiratory irritation.

### Toxicity data

(The meaning of any abbreviations which appear in this section is given [here.](#))

IPR-MUS LD50 3.5 mg kg<sup>-1</sup>

### **Risk phrases**

(The meaning of any risk phrases which appear in this section is given [here.](#))

R11 R36 R37 R38 (all for the powdered material only).

## **Transport information**

(The meaning of any UN hazard codes which appear in this section is given [here.](#))

UN Nos: 3089 (very fine powder), 3077 (fine powder); otherwise considered non-hazardous for air, sea and road freight.

## **Personal protection**

Suitable ventilation if handling powder.

[Return to [Physical & Theoretical Chemistry Lab. Safety home page.](#)]

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# Safety data for lead



Click here for data on lead in [student-friendly format](#), from the [HSci](#) project

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[Glossary](#) of terms on this data sheet.

The information on this web page is provided to help you to work safely, but it is intended to be an overview of hazards, not a replacement for a full Material Safety Data Sheet (MSDS). MSDS forms can be downloaded from the web sites of many chemical suppliers.

---

## General

Synonyms: lead shot, C.I. 77575. [Note: the exact formulation of lead obtained as lead shot may vary; it may contain small amounts of [antimony](#), [arsenic](#) and other materials.]

Molecular formula: Pb

CAS No: 7439-92-1

EINECS No:

## Physical data

Appearance: grey metal granules, shot, foil, sheet or powder

Melting point: 327 C

Boiling point: 1744 C

Vapour density:

Vapour pressure:

Density (g cm<sup>-3</sup>): 11.34

Flash point:

Explosion limits:

Autoignition temperature:

Water solubility: insoluble

## Stability

Stable. Incompatible with strong oxidizing agents, potassium, sodium.

## Toxicology

Toxic by ingestion or inhalation. Chronic poison. Typical TLV/TWA as powder 0.15 mg/m<sup>3</sup>. Typical PEL 0.05 mg/m<sup>3</sup>

### Risk phrases

(The meaning of any risk phrases which appear in this section is given [here.](#))  
R23 R25.

## Transport information

Non-hazardous for air, sea and road transport.

## Personal protection

Solid lead is believed to present a relatively low hazard to health, but it is a cumulative poison, and can cause serious harm if inhaled as a powder, or ingested over a long period. Most lead salts are very poisonous, as are many organic compounds containing lead, such as [lead tetraethyl](#).

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# Safety data for arsenic



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[Glossary](#) of terms on this data sheet.

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---

## General

Synonyms: arsenic black, arsenicals, arsenic-75, colloidal arsenic, grey arsenic, metallic arsenic

Molecular formula: As

CAS No: 7440-38-2

EINECS No: 231-148-6

Annex I Index No: 033-001-00-X

## Physical data

Appearance: grey powder or chunks

Melting point: 817 C

Boiling point:

Vapour density:

Vapour pressure:

Density (g cm<sup>-3</sup>): 5.727

Flash point:

Explosion limits:

Autoignition temperature:

## Stability

Stable. Incompatible with acids, oxidizing agents, halogens. Heat and air-sensitive.

## Toxicology

Very toxic. May be fatal if inhaled, swallowed or absorbed through the skin. This is a known human carcinogen. May cause reproductive disorders.

### Toxicity data

(The meaning of any abbreviations which appear in this section is given [here.](#))

ORL-RAT LD50 763 mg kg<sup>-1</sup>

IPR-RAT LD50 13 mg kg<sup>-1</sup>

ORL-MUS LD50 145 mg kg<sup>-1</sup>

IPR-MUS LD50 46 mg kg<sup>-1</sup>

### Risk phrases

(The meaning of any risk phrases which appear in this section is given [here.](#))

R23 R25 R50 R53. (Note that according to Annex I, arsenic is not allocated the Risk Phrase R45 - May Cause Cancer - even though arsenic is known to be carcinogenic in humans. It would be wise to handle this material as a carcinogen, and treat it as though Risk Phrase R45 was specified.)

## Environmental information

Harmful in the environment - very toxic to aquatic organisms. May cause long-term damage.

## Transport information

(The meaning of any UN hazard codes which appear in this section is given [here.](#))

UN No 1558. Hazard class: 6.1. Packing group: II

## Personal protection

Gloves, safety glasses, good ventilation. Handle as a carcinogen.

### Safety phrases

(The meaning of any safety phrases which appear in this section is given [here.](#))

S20 S21 S28 S45 S60 S61.

[Return to [Physical & Theoretical Chemistry Lab. Safety home page.](#)]

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# Safety data for chromium

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[Glossary](#) of terms on this data sheet.

The information on this web page is provided to help you to work safely, but it is intended to be an overview of hazards, not a replacement for a full Material Safety Data Sheet (MSDS). MSDS forms can be downloaded from the web sites of many chemical suppliers.

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## General

Synonyms: chromium metal, chrome, alpaste RRA 030

Molecular formula: Cr

CAS No: 7440-47-3

EC No: 231-157-5

## Physical data

Appearance: very hard silvery grey metal

Melting point: 1900 C

Boiling point: 2640 C

Vapour density:

Vapour pressure: 1 mm Hg at 1616 C

Specific gravity: 7.14

Flash point:

Explosion limits:

Autoignition temperature:

## Stability

Stable. Incompatible with carbonates, strong bases, mineral acids, lithium, sulfur dioxide, strong acids.

## Toxicology

In powdered form may act as a human carcinogen. Not expected to pose a risk to health in the massive (lump) form. Typical TLV (dust) 0.5 mg/m<sup>3</sup>.

### Risk phrases

(The meaning of any risk phrases which appear in this section is given [here.](#))

R23 R24 R25 R36 R37 R38 R45 (applies to powdered material only).

## Transport information

Non-hazardous for air, sea and road freight.

## Personal protection

Avoid exposure to dust.

### Safety phrases

(The meaning of any safety phrases which appear in this section is given [here.](#))

S26 S28 S36 S37 S39 S45 S53 (applies to powdered material only).

[Return to [Physical & Theoretical Chemistry Lab. Safety home page.](#)]

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**Addendum 9**  
Groundwater Sampling Results

Table 2 - Groundwater Sampling Data  
470 Driggs Avenue, Brooklyn, New York

ALL CONCENTRATIONS IN UG/L (PPB)			Result	Qualifier								
NYSDEC Ground Water Quality Standards Part 703			1104603		1104604		1104605		1104606		1104607	
			TWP-2		TWP-3		TWP-4		FB-GW		TB	
CAS #	Contaminant	NYDECGWQS	06/14/11		06/14/11		06/14/11		06/14/11		06/14/11	
<b>Volatile Analyte (UG/L)</b>												
107-02-8	Acrolein	NA	6	U	6	U	6	U	6	U	6	U
107-13-1	Acrylonitrile	NA	2	U	2	U	2	U	2	U	2	U
67-64-1	Acetone	50	1	B	1	B	13		1	B	1	B
71-43-2	Benzene	1	0.5	U								
108-86-1	Bromobenzene	NA	0.5	U								
74-97-5	Bromochloromethane	5	0.5	U								
75-27-4	Bromodichloromethane	50	0.5	U								
75-25-2	Bromoform	50	0.5	U								
74-83-9	Bromomethane	5	1	U	1	U	1	U	1	U	1	U
78-93-3	2-Butanone (Methyl ethyl ketone)	50	0.5	U	0.5	U	2.5		0.5	U	0.5	U
104-51-8	n-Butylbenzene	NA	0.5	U								
135-98-8	sec-Butylbenzene	NA	0.5	U								
98-06-6	tert-Butylbenzene	NA	0.5	U								
75-15-0	Carbon disulfide	120	0.4	U								
56-23-5	Carbon Tetrachloride	5	0.5	U								
108-90-7	Chlorobenzene	5	0.5	U								
75-00-3	Chloroethane	5	1	U	1	U	1	U	1	U	1	U
110-75-8	2-Chloroethylvinylether	NA	0.5	U								
67-66-3	Chloroform	7	0.5	U								
74-87-3	Chloromethane	5	1	U	1	U	1	U	1	U	1	U
95-49-8	2-Chlorotoluene	NA	0.5	U								
106-43-4	4-Chlorotoluene	NA	0.5	U								
110-82-7	Cyclohexane	NA	0.5	U								
124-48-1	Dibromochloromethane	50	0.5	U								
96-12-8	1,2-Dibromo-3-Chloropropane	0.04	0.5	U								
106-93-4	1,2-Dibromoethane	0.0006	0.5	U								
74-95-3	Dibromomethane	NA	0.5	U								
95-50-1	1,2-Dichlorobenzene	3	0.5	U								
541-73-1	1,3-Dichlorobenzene	3	0.5	U								
106-46-7	1,4-Dichlorobenzene	3	0.5	U								
75-34-3	1,1-Dichloroethane	5	0.4	U								
75-35-4	1,1-Dichloroethene	5	0.4	U								
107-06-2	1,2-Dichloroethane	0.6	0.5	U								

Table 2 - Groundwater Sampling Data  
470 Driggs Avenue, Brooklyn, New York

ALL CONCENTRATIONS IN UG/L (PPB)			Result	Qualifier								
NYSDEC Ground Water Quality Standards Part 703			1104603		1104604		1104605		1104606		1104607	
			TWP-2		TWP-3		TWP-4		FB-GW		TB	
CAS #	Contaminant	NYDECGWQS	06/14/11		06/14/11		06/14/11		06/14/11		06/14/11	
156-59-2	cis-1,2-Dichloroethene	5	0.5	U								
156-60-5	trans-1,2-Dichloroethene	5	0.4	U								
75-71-8	Dichlorodifluoromethane	NA	1	U	1	U	1	U	1	U	1	U
78-87-5	1,2-Dichloropropane	1	0.5	U								
142-28-9	1,3-Dichloropropane	NA	0.5	U								
590-20-7	2,2-Dichloropropane	NA	0.4	U								
563-58-6	1,1-Dichloropropene	NA	0.5	U								
542-75-6	1,3-Dichloropropene (cis + trans)	0.4	0.5	U								
10061-01-5	cis-1,3-Dichloropropene	0.4	0.5	U								
10061-02-6	trans-1,3-Dichloropropene	0.4	0.5	U								
123-91-1	1,4-Dioxane	NA	0.5	U								
100-41-4	Ethylbenzene	5	0.5	U								
76-13-1	Freon-113	NA	1	U	1	U	1	U	1	U	1	U
87-68-3	Hexachlorobutadiene	NA	0.5	U								
591-78-6	2-Hexanone	50	0.5	U								
98-82-8	Isopropylbenzene	NA	0.5	U								
99-87-6	p-Isopropyltoluene	NA	0.5	U								
79-20-9	Methyl Acetate	NA	0.4	U								
75-09-2	Methylene Chloride	5	1.4	B	1.1	B	0.4	U	4.2	B	4	B
108-87-2	Methylcyclohexane	NA	0.5	U								
108-10-1	4-Methyl-2-Pentanone	~	0.5	U								
1634-04-4	Methyl tert-butyl ether	~	3.9		18		1	U	1	U	1	U
91-20-3	Naphthalene	NA	0.5	U								
103-65-1	n-Propylbenzene	NA	0.5	U								
100-42-5	Styrene	5	0.5	U								
75-65-0	T-butyl alcohol	NA	5.6	J	0.5	U	0.5	U	0.5	U	0.5	U
127-18-4	Tetrachloroethene	5	0.5	U								
630-20-6	1,1,1,2-Tetrachloroethane	NA	0.5	U								
79-34-5	1,1,2,2-Tetrachloroethane	5	0.5	U								
108-88-3	Toluene	5	0.5	U								
87-61-6	1,2,3-Trichlorobenzene	NA	0.5	U								
120-82-1	1,2,4-Trichlorobenzene	5	0.5	U								
71-55-6	1,1,1-Trichloroethane	5	0.5	U								
79-00-5	1,1,2-Trichloroethane	1	0.5	U								

Table 2 - Groundwater Sampling Data  
470 Driggs Avenue, Brooklyn, New York

ALL CONCENTRATIONS IN UG/L (PPB)			Result	Qualifier								
NYSDEC Ground Water Quality Standards Part 703			1104603		1104604		1104605		1104606		1104607	
			TWP-2		TWP-3		TWP-4		FB-GW		TB	
CAS #	Contaminant	NYDECGWQS	06/14/11		06/14/11		06/14/11		06/14/11		06/14/11	
79-01-6	Trichloroethene	5	0.5	U								
75-69-4	Trichlorofluoromethane	NA	1	U	1	U	1	U	1	U	1	U
96-18-4	1,2,3-Trichloropropane	NA	0.5	U								
95-63-6	1,2,4-Trimethylbenzene	NA	0.5	U								
108-67-8	1,3,5-Trimethylbenzene	NA	0.5	U								
108-05-4	Vinyl Acetate	NA	0.4	U								
75-01-4	Vinyl Chloride	2	1	U	1	U	1	U	1	U	1	U
1330-20-7	Xylenes (total = o +m/p)	5	1	U	1	U	1	U	1	U	1	U
126777-61-2	m/p-Xylenes	5	1	U	1	U	1	U	1	U	1	U
95-47-6	o-Xylene	5	1	U	1	U	1	U	1	U	1	U
999-99-1	Total Confident Conc. VOC											
999-99-2	Total TICs		~	~	~	~	~	~	~	~	~	~
<b>SemiVolatile Analyte (UG/L)</b>												
83-32-9	Acenaphthene	20	0.538	U	0.602	U	0.575	U	0.521	U	~	~
208-96-8	Acenaphthylene	~	0.538	U	0.602	U	0.575	U	0.521	U	~	~
120-12-7	Anthracene	50	0.538	U	0.602	U	0.575	U	0.521	U	~	~
92-87-5	Benzidine	NA	0.538	U	0.602	U	0.575	U	0.521	U	~	~
56-55-3	Benzo(a)anthracene	0.002	0.108	U	0.12	U	0.249	J	0.104	U	~	~
50-32-8	Benzo(a)pyrene	ND	0.108	U	0.12	U	0.171	J	0.104	U	~	~
205-99-2	Benzo(b)fluoranthene	0.002	0.215	U	0.241	U	0.23	U	0.208	U	~	~
191-24-2	Benzo(g,h,i)perylene	~	0.108	U	0.12	U	0.115	U	0.104	U	~	~
207-08-9	Benzo(k)fluoranthene	0.002	0.538	U	0.602	U	0.575	U	0.521	U	~	~
111-91-1	bis(2-Chloroethoxy)methane	5	0.538	U	0.602	U	0.575	U	0.521	U	~	~
111-44-4	bis(2-Chloroethyl)ether	1	0.538	U	0.602	U	0.575	U	0.521	U	~	~
108-60-1	Bis(2-chloroisopropyl)ether	NA	0.538	U	0.602	U	0.575	U	0.521	U	~	~
117-81-7	bis(2-Ethylhexyl)phthalate	5	0.538	U	0.602	U	1.47	J	0.521	U	~	~
101-55-3	4-Bromophenyl-phenylether	~	0.538	U	0.602	U	0.575	U	0.521	U	~	~
85-68-7	Butylbenzylphthalate	50	0.538	U	0.602	U	0.575	U	0.521	U	~	~
86-74-8	Carbazole	~	0.538	U	0.602	U	0.575	U	0.521	U	~	~
106-47-8	4-Chloroaniline	5	0.538	U	0.602	U	0.575	U	0.521	U	~	~
7005-72-3	4-Chlorophenyl-phenylether	~	0.538	U	0.602	U	0.575	U	0.521	U	~	~
91-58-7	2-Chloronaphthalene	10	0.538	U	0.602	U	0.575	U	0.521	U	~	~
95-57-8	2-Chlorophenol	1	0.538	U	0.602	U	0.575	U	0.521	U	~	~
59-50-7	4-Chloro-3-methylphenol	1	0.538	U	0.602	U	0.575	U	0.521	U	~	~

Table 2 - Groundwater Sampling Data  
470 Driggs Avenue, Brooklyn, New York

ALL CONCENTRATIONS IN UG/L (PPB)			Result	Qualifier								
NYSDEC Ground Water Quality Standards Part 703			1104603		1104604		1104605		1104606		1104607	
			TWP-2		TWP-3		TWP-4		FB-GW		TB	
CAS #	Contaminant	NYDECGWQS	06/14/11		06/14/11		06/14/11		06/14/11		06/14/11	
218-01-9	Chrysene	0.002	0.108	U	0.12	U	0.115	U	0.104	U	~	~
84-74-2	Di-n-butylphthalate	50	0.538	U	0.602	U	0.575	U	0.521	U	~	~
53-70-3	Dibenz(a,h)anthracene	~	0.215	U	0.241	U	0.23	U	0.208	U	~	~
132-64-9	Dibenzofuran	*	0.538	U	0.602	U	0.575	U	0.521	U	~	~
95-50-1	1,2-Dichlorobenzene	3	0.538	U	0.602	U	0.575	U	0.521	U	~	~
541-73-1	1,3-Dichlorobenzene	3	0.538	U	0.602	U	0.575	U	0.521	U	~	~
106-46-7	1,4-Dichlorobenzene	3	0.538	U	0.602	U	0.575	U	0.521	U	~	~
91-94-1	3,3-Dichlorobenzidine	5	0.538	U	0.602	U	0.575	U	0.521	U	~	~
120-83-2	2,4-Dichlorophenol	1	0.538	U	0.602	U	0.575	U	0.521	U	~	~
84-66-2	Diethylphthalate	50	0.538	U	0.602	U	0.575	U	0.521	U	~	~
131-11-3	Dimethylphthalate	50	0.538	U	0.602	U	0.575	U	0.521	U	~	~
105-67-9	2,4-Dimethylphenol	1	0.538	U	0.602	U	0.575	U	0.521	U	~	~
25321-14-6	Dinitrotoluene (2,4-/2,6- mixture)	NA	0.538	U	0.602	U	0.575	U	0.521	U	~	~
121-14-2	2,4-Dinitrotoluene	5	0.538	U	0.602	U	0.575	U	0.521	U	~	~
606-20-2	2,6-Dinitrotoluene	5	0.538	U	0.602	U	0.575	U	0.521	U	~	~
51-28-5	2,4-Dinitrophenol	1	0.538	U	0.602	U	0.575	U	0.521	U	~	~
534-52-1	4,6-Dinitro-2-methylphenol	1	0.538	U	0.602	U	0.575	U	0.521	U	~	~
117-84-0	Di-n-octyl phthalate	50	0.538	U	0.602	U	0.575	U	0.521	U	~	~
206-44-0	Fluoranthene	50	0.538	U	0.602	U	0.575	U	0.521	U	~	~
86-73-7	Fluorene	50	0.538	U	0.602	U	0.575	U	0.521	U	~	~
118-74-1	Hexachlorobenzene	0.04	0.086	U	0.0964	U	0.092	U	0.521	U	~	~
87-68-3	Hexachlorobutadiene	0.5	0.538	U	0.602	U	0.575	U	0.521	U	~	~
77-47-4	Hexachlorocyclopentadiene	5	0.538	U	0.602	U	0.575	U	0.521	U	~	~
67-72-1	Hexachloroethane	5	0.538	U	0.602	U	0.575	U	0.521	U	~	~
193-39-5	Indeno(1,2,3-cd)pyrene	0.002	0.538	U	0.602	U	0.575	U	0.521	U	~	~
78-59-1	Isophorone	50	0.538	U	0.602	U	0.575	U	0.521	U	~	~
91-57-6	2-Methylnaphthalene	~	0.538	U	1.27	J	0.575	U	0.521	U	~	~
95-48-7	2-Methylphenol	1	0.538	U	0.602	U	0.575	U	0.521	U	~	~
106-44-5	3&4 Methylphenol	1	0.538	U	0.602	U	0.575	U	0.521	U	~	~
91-20-3	Naphthalene	10	0.538	U	0.756	J	0.575	U	0.521	U	~	~
88-74-4	2-Nitroaniline	5	0.538	U	0.602	U	0.575	U	0.521	U	~	~
88-75-5	2-Nitrophenol	1	0.538	U	0.602	U	0.575	U	0.521	U	~	~
99-09-2	3-Nitroaniline	5	0.538	U	0.602	U	0.575	U	0.521	U	~	~
100-01-6	4-Nitroaniline	5	0.538	U	0.602	U	0.575	U	0.521	U	~	~

Table 2 - Groundwater Sampling Data  
470 Driggs Avenue, Brooklyn, New York

ALL CONCENTRATIONS IN UG/L (PPB)			Result	Qualifier								
NYSDEC Ground Water Quality Standards Part 703			1104603		1104604		1104605		1104606		1104607	
			TWP-2		TWP-3		TWP-4		FB-GW		TB	
CAS #	Contaminant	NYDECGWQS	06/14/11		06/14/11		06/14/11		06/14/11		06/14/11	
98-95-3	Nitrobenzene	0.4	0.538	U	0.602	U	0.575	U	0.521	U	~	~
100-02-7	4-Nitrophenol	1	0.538	U	0.602	U	0.575	U	0.521	U	~	~
621-64-7	N-Nitroso-di-n-propylamine	~	0.538	U	0.602	U	0.575	U	0.521	U	~	~
86-30-6	N-Nitrosodiphenylamine	50	0.538	U	0.602	U	0.575	U	0.521	U	~	~
87-86-5	Pentachlorophenol	1	0.538	U	0.602	U	0.575	U	0.521	U	~	~
85-01-8	Phenanthrene	50	0.108	U	0.548	J	0.763	J	0.104	U	~	~
108-95-2	Phenol	1	0.538	U	0.602	U	0.575	U	0.521	U	~	~
129-00-0	Pyrene	50	0.538	U	0.602	U	0.575	U	0.521	U	~	~
120-82-1	1,2,4-Trichlorobenzene	5	0.538	U	0.602	U	0.575	U	0.521	U	~	~
95-95-4	2,4,5-Trichlorophenol	1	0.538	U	0.602	U	0.575	U	0.521	U	~	~
88-06-2	2,4,6-Trichlorophenol	1	0.538	U	0.602	U	0.575	U	0.521	U	~	~
999-99-3	Total Confident Conc. SVOC										~	~
999-99-4	Total Confident Conc. PAH's										~	~
999-99-5	Total TICs		~	~	~	~	~	~	~	~	~	~
<b>Pesticide Analyte (UG/L)</b>												
309-00-2	Aldrin	ND	0.0204	U	0.021	U	0.0208	U	0.02	U	~	~
319-84-6	alpha-BHC	0.01	0.0204	U	0.021	U	0.0208	U	0.02	U	~	~
319-85-7	beta-BHC	0.04	0.0204	U	0.021	U	0.0208	U	0.02	U	~	~
319-86-8	delta-BHC	0.04	0.0204	U	0.021	U	0.0208	U	0.02	U	~	~
xxxx-xx-01	Chlordane, Total (Alpha & Gamma)	0.05	0.0204	U	0.021	U	0.0208	U	0.02	U	~	~
5103-71-9	alpha-Chlordane	0.09	0.0204	U	0.021	U	0.0208	U	0.02	U	~	~
72-55-9	gamma-Chlordane	2	0.0204	U	0.021	U	0.0208	U	0.02	U	~	~
72-54-8	4,4-DDD	0.3	0.0408	U	0.0421	U	0.0417	U	0.04	U	~	~
72-55-9	4,4-DDE	0.2	0.0408	U	0.0421	U	0.0417	U	0.04	U	~	~
50-29-3	4,4-DDT	0.2	0.0408	U	0.0421	U	0.0417	U	0.04	U	~	~
60-57-1	Dieldrin	0.004	0.0408	U	0.0421	U	0.0417	U	0.04	U	~	~
115-29-7	Endosulfan	NA	0.0204	U	0.021	U	0.0208	U	0.02	U	~	~
959-98-8	Endosulfan I	~	0.0204	U	0.021	U	0.0208	U	0.02	U	~	~
33213-65-9	Endosulfan II	~	0.0408	U	0.0421	U	0.0417	U	0.04	U	~	~
1031-07-8	Endosulfan Sulfate	~	0.0408	U	0.0421	U	0.0417	U	0.04	U	~	~
72-20-8	Endrin	ND	0.0408	U	0.0421	U	0.0417	U	0.04	U	~	~
7421-93-4	Endrin aldehyde	5	0.0408	U	0.0421	U	0.0417	U	0.04	U	~	~
53494-70-5	Endrin Ketone	5	0.0408	U	0.0421	U	0.0417	U	0.04	U	~	~
58-89-9	gamma-BHC (Lindane)	0.05	0.0204	U	0.021	U	0.0208	U	0.02	U	~	~

Table 2 - Groundwater Sampling Data  
470 Driggs Avenue, Brooklyn, New York

ALL CONCENTRATIONS IN UG/L (PPB)			Result	Qualifier								
NYSDEC Ground Water Quality Standards Part 703			1104603		1104604		1104605		1104606		1104607	
			TWP-2		TWP-3		TWP-4		FB-GW		TB	
CAS #	Contaminant	NYDECGWQS	06/14/11		06/14/11		06/14/11		06/14/11		06/14/11	
76-44-8	Heptachlor	0.04	0.0204	U	0.021	U	0.0208	U	0.02	U	~	~
1024-57-3	Heptachlor epoxide	0.03	0.0204	U	0.021	U	0.0208	U	0.02	U	~	~
72-43-5	Methoxychlor	35	0.204	U	0.21	U	0.208	U	0.2	U	~	~
8001-35-2	Toxaphene	0.06	1.02	U	1.05	U	1.04	U	1	U	~	~
999-99-6	Total Pesticides		~	~	~	~	~	~	~	~	~	~
<b>PolyChlorinated Phenols (PCB's) (UG/L)</b>												
1336-36-3	Polychlorinated Biphenyls (PCBs)	0.09	0.51	U	0.526	U	0.521	U	0.5	U	~	~
12674-11-2	Aroclor-1016	~	0.51	U	0.526	U	0.521	U	0.5	U	~	~
11104-28-2	Aroclor-1221	~	0.51	U	0.526	U	0.521	U	0.5	U	~	~
11141-16-5	Aroclor-1232	~	0.51	U	0.526	U	0.521	U	0.5	U	~	~
53469-21-9	Aroclor-1242	~	0.51	U	0.526	U	0.521	U	0.5	U	~	~
12672-29-6	Aroclor-1248	~	0.51	U	0.526	U	0.521	U	0.5	U	~	~
11097-69-1	Aroclor-1254	~	0.51	U	0.526	U	0.521	U	0.5	U	~	~
11096-82-5	Aroclor-1260	~	0.51	U	0.526	U	0.521	U	0.5	U	~	~
<b>Metals (UG/L)</b>												
7429-90-5	Aluminum	2000	103000		41400		250000		250	U	~	~
7440-36-0	Antimony	6	20.6		10.1		15.7		5	U	~	~
7440-38-2	Arsenic	50	180		90.9		107		2	U	~	~
7440-39-3	Barium	2000	4040		1170		3150		15	U	~	~
7440-41-7	Beryllium	ND	5.45		2.13		16.4		1	U	~	~
7440-43-9	Cadmium	ND	6.64		4	U	4	U	4	U	~	~
7440-70-2	Calcium	ND	267000		239000		462000		250	U	~	~
7440-47-3	Chromium	ND	290		161		578		10	U	~	~
18540-29-9	Chromium Hexavalent	100	~	~	~	~	~	~	~	~	~	~
16065-83-1	Chromium Trivalent	ND	~	~	~	~	~	~	~	~	~	~
7440-48-4	Cobalt	ND	95.6		61.5		237		10	U	~	~
7440-50-8	Copper	400	1030		442		1560		10	U	~	~
7439-92-1	Iron	600	222000		132000		801000		100	U	~	~
7439-92-1	Lead	50	4630		2840		1840		5	U	~	~
7439-95-4	Magnesium	ND	41300		38400		110000		250	U	~	~
7439-96-5	Manganese	600	3660		3410		26700		10	U	~	~
7439-97-6	Mercury	1.4	9.8		9.92		5.03		0.5	U	~	~
7440-02-0	Nickel	200	416		217		376		10	U	~	~
7440-09-7	Potassium	ND	52700		45400		80200		250	U	~	~

Table 2 - Groundwater Sampling Data  
470 Driggs Avenue, Brooklyn, New York

ALL CONCENTRATIONS IN UG/L (PPB)			Result	Qualifier								
NYSDEC Ground Water Quality Standards Part 703			1104603		1104604		1104605		1104606		1104607	
			TWP-2		TWP-3		TWP-4		FB-GW		TB	
CAS #	Contaminant	NYDECGWQS	06/14/11		06/14/11		06/14/11		06/14/11		06/14/11	
7782-49-2	Selenium	20	40.7		2840		40.1		10	U	~	~
7440-22-4	Silver	100	10.4		5.08		5	U	5	U	~	~
7440-23-5	Sodium	ND	144000		114000		145000		250	U	~	~
7440-28-0	Thallium	ND	2	U	2	U	2	U	2	U	~	~
7440-62-2	Vanadium	ND	336		151		929		15	U	~	~
7440-66-6	Zinc	5000	7410		922		2060		100	U	~	~
<b>Other</b>												
57-12-5	Cyanide, Total (mg/l)	400	0.02	U	0.04		0.02	U	0.02	U	~	~

**Qualifiers:**

- E - Concentration exceeds the instrument calibration range or below the reporting limit
- B - Analyte detected in laboratory blank
- D - Result is based on a dilution.
- H - Alternate peak selection upon analytical review
- J - Estimated value
- M - Manually integrated compound
- N - Spike recovery exceeds the upper and lower control limits
- \* - Batch QC exceeds the upper of lower control limits
- U - Analyte was not detected at or above the reporting limit.
- P - This flag is used for a pesticide/aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported.
- Red - Over the NYDEC Groundwater Quality Standards

Table 2A  
Groundwater Sampling Data  
Dissolved Metals  
470 Driggs Avenue, Brooklyn, New York

ALL CONCENTRATIONS IN UG/L (PPB)

Case - 8671

NYSDEC Ground Water Quality Standards Part 703

			Result Qualifier 1105230	Result Qualifier 1105231
Client: Brinkerhoff Enviro. Svcs - Project: 470 Driggs Avenue			TWP-1A	TWP-2A
CAS #	Contaminant	GWQS	07/08/11	07/08/11
<b>Metals (UG/L)</b>				
7429-90-5	Aluminum	2000	250 U	250 U
7440-36-0	Antimony	6	6.55	5
7440-38-2	Arsenic	25	6.05	2 U
7440-39-3	Barium	2000	80.9	164
7440-41-7	Beryllium	NS	1.83	1.88
7440-43-9	Cadmium	5	4 U	4 U
7440-70-2	Calcium	NS	74900	228000
7440-47-3	Chromium	50	10 U	10 U
7440-48-4	Cobalt	5	10 U	10 U
7440-50-8	Copper	200	10 U	10 U
7439-92-1	Iron	300	100 U	100 U
7439-92-1	Lead	25	5 U	5 U
7439-95-4	Magnesium	35000	13000	29300
7439-96-5	Manganese	300	77.6	1450
7439-97-6	Mercury	0.7	0.5 U	0.5 U
7440-02-0	Nickel	100	17.9	10 U
7440-09-7	Potassium	NS	35600	50500
7782-49-2	Selenium	10	10 U	10 U
7440-22-4	Silver	50	5 U	5 U
7440-23-5	Sodium	20000	142000	163000
7440-28-0	Thallium	20	2 U	2 U
7440-62-2	Vanadium	190	15 U	15 U
7440-66-6	Zinc	95	100 U	100 U

**Qualifiers:**

E - Concentration exceeds the instrument calibration range or below the reporting limit

B - Analyte detected in laboratory blank

D - Result is based on a dilution.

H - Alternate peak selection upon analytical review

J - Estimated value

M - Manually integrated compound

N - Spike recovery exceeds the upper and lower control limits

\* - Batch QC exceeds the upper of lower control limits

U - Analyte was not detected at or above the reporting limit.

NS- No Standard Applicable

Red - Over the GWQS

Table 2A  
Groundwater Sampling Data  
Dissolved Metals  
470 Driggs Avenue, Brooklyn, New York

ALL CONCENTRATIONS IN UG/L (PPB) NYSDEC Ground Water Quality Standards Part 703		Case - 8671	Result Qualifier 1105232	Result Qualifier 1105233
Client: Brinkerhoff Enviro. Svcs - Project: 470 Driggs Avenue			TWP-3A 07/08/11	TWP-4A 07/08/11
CAS #	Contaminant	GWQS		
<b>Metals (UG/L)</b>				
7429-90-5	Aluminum	2000	250 U	250 U
7440-36-0	Antimony	6	6.5	8.75
7440-38-2	Arsenic	25	2.27	2 U
7440-39-3	Barium	2000	170	255
7440-41-7	Beryllium	NS	1.7	1.53
7440-43-9	Cadmium	5	4 U	4 U
7440-70-2	Calcium	NS	204000	201000
7440-47-3	Chromium	50	10 U	10 U
7440-48-4	Cobalt	5	10 U	10 U
7440-50-8	Copper	200	10 U	10 U
7439-92-1	Iron	300	100 U	100 U
7439-92-1	Lead	25	5 U	5 U
7439-95-4	Magnesium	35000	32100	31600
7439-96-5	Manganese	300	499	325
7439-97-6	Mercury	0.7	0.5 U	0.5 U
7440-02-0	Nickel	100	192	10 U
7440-09-7	Potassium	NS	53100	27300
7782-49-2	Selenium	10	10 U	10 U
7440-22-4	Silver	50	5 U	5 U
7440-23-5	Sodium	20000	156000	118000
7440-28-0	Thallium	20	2 U	2 U
7440-62-2	Vanadium	190	15 U	15 U
7440-66-6	Zinc	95	100 U	100 U

**Qualifiers:**

- E - Concentration exceeds the instrument calibration range or below the reporting limit
- B - Analyte detected in laboratory blank
- D - Result is based on a dilution.
- H - Alternate peak selection upon analytical review
- J - Estimated value
- M - Manually integrated compound
- N - Spike recovery exceeds the upper and lower control limits
- \* - Batch QC exceeds the upper of lower control limits
- U - Analyte was not detected at or above the reporting limit.
- NS- No Standard Applicable
- Red - Over the GWQS

Table 2A - Groundwater Sampling Data  
470 Driggs Avenue, Brooklyn, New York

ALL CONCENTRATIONS IN UG/L (PPB)			Result	Qualifier
NYSDEC Ground Water Quality Standards Part 703			1102862	
			TWP-1	
CAS #	Contaminant	NYDECGWQS	04/20/11	
Volatile Analyte (UG/L)				
107-02-8	Acrolein	NA	6	U
107-13-1	Acrylonitrile	NA	2	U
67-64-1	Acetone	50	8.6	B
71-43-2	Benzene	1	10	
108-86-1	Bromobenzene	NA	0.5	U
74-97-5	Bromochloromethane	5	0.5	U
75-27-4	Bromodichloromethane	50	0.5	U
75-25-2	Bromoform	50	0.5	U
74-83-9	Bromomethane	5	1	U
78-93-3	2-Butanone (Methyl ethyl ketone)	50	3.3	
104-51-8	n-Butylbenzene	NA	5.7	
135-98-8	sec-Butylbenzene	NA	8.2	
98-06-6	tert-Butylbenzene	NA	1.1	
75-15-0	Carbon disulfide	120	0.4	U
56-23-5	Carbon Tetrachloride	5	0.5	U
108-90-7	Chlorobenzene	5	0.5	U
75-00-3	Chloroethane	5	1	U
110-75-8	2-Chloroethylvinylether	NA	0.5	U
67-66-3	Chloroform	7	0.5	U
74-87-3	Chloromethane	5	1	U
95-49-8	2-Chlorotoluene	NA	0.5	U
106-43-4	4-Chlorotoluene	NA	0.5	U
110-82-7	Cyclohexane	NA	10	
124-48-1	Dibromochloromethane	50	0.5	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.04	0.5	U
106-93-4	1,2-Dibromoethane	0.0006	0.5	U
74-95-3	Dibromomethane	NA	0.5	U
95-50-1	1,2-Dichlorobenzene	3	0.5	U
541-73-1	1,3-Dichlorobenzene	3	0.5	U
106-46-7	1,4-Dichlorobenzene	3	0.5	U
75-34-3	1,1-Dichloroethane	5	0.4	U
75-35-4	1,1-Dichloroethene	5	0.4	U
107-06-2	1,2-Dichloroethane	0.6	0.5	U
156-59-2	cis-1,2-Dichloroethene	5	0.5	U
156-60-5	trans-1,2-Dichloroethene	5	0.4	U
75-71-8	Dichlorodifluoromethane	NA	1	U
78-87-5	1,2-Dichloropropane	1	0.5	U
142-28-9	1,3-Dichloropropane	NA	0.5	U
590-20-7	2,2-Dichloropropane	NA	0.4	U
563-58-6	1,1-Dichloropropene	NA	0.5	U
542-75-6	1,3-Dichloropropene (cis + trans)	0.4	0.5	U
10061-01-5	cis-1,3-Dichloropropene	0.4	0.5	U
10061-02-6	trans-1,3-Dichloropropene	0.4	0.5	U
123-91-1	1,4-Dioxane	NA	0.5	U
100-41-4	Ethylbenzene	5	60	
76-13-1	Freon-113	NA	1	U
87-68-3	Hexachlorobutadiene	NA	0.5	U
591-78-6	2-Hexanone	50	0.5	U
98-82-8	Isopropylbenzene	NA	15	
99-87-6	p-Isopropyltoluene	NA	0.5	U
79-20-9	Methyl Acetate	NA	0.4	U

Table 2A - Groundwater Sampling Data  
470 Driggs Avenue, Brooklyn, New York

ALL CONCENTRATIONS IN UG/L (PPB)			Result	Qualifier
NYSDEC Ground Water Quality Standards Part 703			1102862	
			TWP-1	
CAS #	Contaminant	NYDECGWQS	04/20/11	
75-09-2	Methylene Chloride	5	2.5	B
108-87-2	Methylcyclohexane	NA	27	
108-10-1	4-Methyl-2-Pentanone	~	0.5	U
1634-04-4	Methyl tert-butyl ether	~	83	
91-20-3	Naphthalene	NA	38	
103-65-1	n-Propylbenzene	NA	23	
100-42-5	Styrene	5	0.5	U
75-65-0	T-butyl alcohol	NA	530	
127-18-4	Tetrachloroethene	5	0.5	U
630-20-6	1,1,1,2-Tetrachloroethane	NA	0.5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	0.5	U
108-88-3	Toluene	5	1.2	
87-61-6	1,2,3-Trichlorobenzene	NA	0.5	U
120-82-1	1,2,4-Trichlorobenzene	5	0.5	U
71-55-6	1,1,1-Trichloroethane	5	0.5	U
79-00-5	1,1,2-Trichloroethane	1	0.5	U
79-01-6	Trichloroethene	5	0.5	U
75-69-4	Trichlorofluoromethane	NA	1	U
96-18-4	1,2,3-Trichloropropane	NA	0.5	U
95-63-6	1,2,4-Trimethylbenzene	NA	3	
108-67-8	1,3,5-Trimethylbenzene	NA	0.63	J
108-05-4	Vinyl Acetate	NA	0.4	U
75-01-4	Vinyl Chloride	2	1	U
1330-20-7	Xylenes (total = o + m/p)	5	5.6	
126777-61-2	m/p-Xylenes	5	4.5	
95-47-6	o-Xylene	5	1.1	J
999-99-1	Total Confident Conc. VOC			
999-99-2	Total TICs		~	~
SemiVolatile Analyte (UG/L)				
83-32-9	Acenaphthene	20	8.31	
208-96-8	Acenaphthylene	~	0.526	U
98-86-2	Acetophenone	NA	0.526	U
120-12-7	Anthracene	50	5.03	
1912-24-9	Atrazine	NA	0.526	U
100-52-7	Benzaldehyde	NA	0.526	U
92-87-5	Benzidine	NA	0.526	U
56-55-3	Benzo(a)anthracene	0.002	2.11	J
50-32-8	Benzo(a)pyrene	ND	1.09	J
205-99-2	Benzo(b)fluoranthene	0.002	1.43	J
191-24-2	Benzo(g,h,i)perylene	~	0.105	U
207-08-9	Benzo(k)fluoranthene	0.002	1.09	J
65-85-0	Benzoic Acid	NA	1.32	U
100-51-6	Benzyl alcohol	NA	0.526	U
92-52-4	1,1'-Biphenyl	NA	0.526	U
111-91-1	bis(2-Chloroethoxy)methane	5	0.526	U
111-44-4	bis(2-Chloroethyl)ether	1	0.526	U
108-60-1	Bis(2-chloroisopropyl)ether	NA	0.526	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	6.31	
101-55-3	4-Bromophenyl-phenylether	~	0.526	U
85-68-7	Butylbenzylphthalate	50	0.526	U
105-60-2	Caprolactam	NA	0.526	U
86-74-8	Carbazole	~	0.526	U

Table 2A - Groundwater Sampling Data  
470 Driggs Avenue, Brooklyn, New York

ALL CONCENTRATIONS IN UG/L (PPB)			Result	Qualifier
NYSDEC Ground Water Quality Standards Part 703			1102862	
			TWP-1	
CAS #	Contaminant	NYDECGWQS	04/20/11	
106-47-8	4-Chloroaniline	5	0.526	U
7005-72-3	4-Chlorophenyl-phenylether	~	0.526	U
91-58-7	2-Chloronaphthalene	10	0.526	U
95-57-8	2-Chlorophenol	1	0.526	U
59-50-7	4-Chloro-3-methylphenol	1	0.526	U
218-01-9	Chrysene	0.002	2.26	J
84-74-2	Di-n-butylphthalate	50	0.526	U
53-70-3	Dibenz(a,h)anthracene	~	0.21	U
132-64-9	Dibenzofuran	*	5.08	
95-50-1	1,2-Dichlorobenzene	3	0.526	U
541-73-1	1,3-Dichlorobenzene	3	0.526	U
106-46-7	1,4-Dichlorobenzene	3	0.526	U
91-94-1	3,3-Dichlorobenzidine	5	0.526	U
120-83-2	2,4-Dichlorophenol	1	0.526	U
84-66-2	Diethylphthalate	50	0.526	U
131-11-3	Dimethylphthalate	50	0.526	U
105-67-9	2,4-Dimethylphenol	1	0.526	U
25321-14-6	Dinitrotoluene (2,4-/2,6- mixture)	NA	0.526	U
121-14-2	2,4-Dinitrotoluene	5	0.526	U
606-20-2	2,6-Dinitrotoluene	5	0.526	U
51-28-5	2,4-Dinitrophenol	1	0.526	U
534-52-1	4,6-Dinitro-2-methylphenol	1	0.526	U
117-84-0	Di-n-octyl phthalate	50	2.27	J
122-66-7	1,2-Diphenylhydrazine	NA	0.526	U
206-44-0	Fluoranthene	50	8.7	
86-73-7	Fluorene	50	10.4	
118-74-1	Hexachlorobenzene	0.04	0.0842	U
87-68-3	Hexachlorobutadiene	0.5	0.526	U
77-47-4	Hexachlorocyclopentadiene	5	0.526	U
67-72-1	Hexachloroethane	5	0.526	U
193-39-5	Indeno(1,2,3-cd)pyrene	0.002	0.526	U
78-59-1	Isophorone	50	0.526	U
91-57-6	2-Methylnaphthalene	~	29.2	
95-48-7	2-Methylphenol	1	0.526	U
106-44-5	3&4 Methylphenol	1	0.526	U
91-20-3	Naphthalene	10	26.9	
88-74-4	2-Nitroaniline	5	0.526	U
88-75-5	2-Nitrophenol	1	0.526	U
99-09-2	3-Nitroaniline	5	0.526	U
100-01-6	4-Nitroaniline	5	0.526	U
98-95-3	Nitrobenzene	0.4	0.526	U
100-02-7	4-Nitrophenol	1	0.526	U
62-75-9	N-Nitrosodimethylamine	NA	0.526	U
621-64-7	N-Nitroso-di-n-propylamine	~	0.526	U
86-30-6	N-Nitrosodiphenylamine	50	0.526	U
87-86-5	Pentachlorophenol	1	0.526	U
85-01-8	Phenanthrene	50	23.5	
108-95-2	Phenol	1	0.526	U
129-00-0	Pyrene	50	9.34	
95-94-3	1,2,4,5-Tetrachlorobenzene	NA	0.526	U
58-90-2	2,3,4,6-Tetrachlorophenol	NA	0.526	U
120-82-1	1,2,4-Trichlorobenzene	5	0.526	U

Table 2A - Groundwater Sampling Data  
470 Driggs Avenue, Brooklyn, New York

<b>ALL CONCENTRATIONS IN UG/L (PPB)</b>			Result	Qualifier
<b>NYSDCE Ground Water Quality Standards Part 703</b>			<b>1102862</b>	
			<b>TWP-1</b>	
<b>CAS #</b>	<b>Contaminant</b>	<b>NYDECGWQS</b>	<b>04/20/11</b>	
95-95-4	2,4,5-Trichlorophenol	1	0.526	U
88-06-2	2,4,6-Trichlorophenol	1	0.526	U
999-99-3	Total Confident Conc. SVOC			
999-99-4	Total Confident Conc. PAH's			
999-99-5	Total TICs		~	~
<b>Pesticide Analyte (UG/L)</b>				
309-00-2	Aldrin	ND	0.021	U
319-84-6	alpha-BHC	0.01	0.021	U
319-85-7	beta-BHC	0.04	0.021	U
319-86-8	delta-BHC	0.04	0.021	U
xxxx-xx-01	Chlordane, Total (Alpha & Gamma)	0.05	0.021	U
5103-71-9	alpha-Chlordane	0.09	0.021	U
72-55-9	gamma-Chlordane	2	0.021	U
72-54-8	4,4-DDD	0.3	0.042	U
72-55-9	4,4-DDE	0.2	0.042	U
50-29-3	4,4-DDT	0.2	0.042	U
60-57-1	Dieldrin	0.004	0.042	U
115-29-7	Endosulfan	NA	0.021	U
959-98-8	Endosulfan I	~	0.021	U
33213-65-9	Endosulfan II	~	0.042	U
1031-07-8	Endosulfan Sulfate	~	0.042	U
72-20-8	Endrin	ND	0.042	U
7421-93-4	Endrin aldehyde	5	0.042	U
53494-70-5	Endrin Ketone	5	0.042	U
58-89-9	gamma-BHC (Lindane)	0.05	0.021	U
76-44-8	Heptachlor	0.04	0.021	U
1024-57-3	Heptachlor epoxide	0.03	0.021	U
72-43-5	Methoxychlor	35	0.21	U
8001-35-2	Toxaphene	0.06	1	U
999-99-6	Total Pesticides		~	~
<b>PolyChlorinated Phenols (PCB's) (UG/L)</b>				
1336-36-3	Polychlorinated Biphenyls (PCBs)	0.09	0.52	U
12674-11-2	Aroclor-1016	~	0.52	U
11104-28-2	Aroclor-1221	~	0.52	U
11141-16-5	Aroclor-1232	~	0.52	U
53469-21-9	Aroclor-1242	~	0.52	U
12672-29-6	Aroclor-1248	~	0.52	U
11097-69-1	Aroclor-1254	~	0.52	U
11096-82-5	Aroclor-1260	~	0.52	U
<b>Metals (UG/L)</b>				
7429-90-5	Aluminum	2000	51000	
7440-36-0	Antimony	6	10	U
7440-38-2	Arsenic	50	52.7	
7440-39-3	Barium	2000	1260	
7440-41-7	Beryllium	ND	5	U
7440-43-9	Cadmium	ND	4	U
7440-70-2	Calcium	ND	183000	
7440-47-3	Chromium	ND	239	
18540-29-9	Chromium Hexavalent	100	~	~
16065-83-1	Chromium Trivalent	ND	~	~
7440-48-4	Cobalt	ND	44	
7440-50-8	Copper	400	551	

Table 2A - Groundwater Sampling Data  
470 Driggs Avenue, Brooklyn, New York

ALL CONCENTRATIONS IN UG/L (PPB)			Result	Qualifier
NYSDEC Ground Water Quality Standards Part 703			1102862	
			TWP-1	
CAS #	Contaminant	NYDECGWQS	04/20/11	
7439-92-1	Iron	600	113000	
7439-92-1	Lead	50	1910	
7439-95-4	Magnesium	ND	33000	
7439-96-5	Manganese	600	2280	
7439-97-6	Mercury	1.4	17.6	
7440-02-0	Nickel	200	683	
7440-09-7	Potassium	ND	71100	
7782-49-2	Selenium	20	13.1	
7440-22-4	Silver	100	5	U
7440-23-5	Sodium	ND	81100	
7440-28-0	Thallium	ND	10	U
7440-62-2	Vanadium	ND	144	
7440-66-6	Zinc	5000	493	
<b>Other</b>				
57-12-5	Cyanide, Total (mg/L)	400	0.03	

**Qualifiers:**

E - Concentration exceeds the instrument calibration range or below the reporting limit

B - Analyte detected in laboratory blank

D - Result is based on a dilution.

H - Alternate peak selection upon analytical review

J - Estimated value

M - Manually integrated compound

N - Spike recovery exceeds the upper and lower control limits

\* - Batch QC exceeds the upper of lower control limits

U - Analyte was not detected at or above the reporting limit.

P - This flag is used for a pesticide/aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported.

**Red** - Over the NYDEC Groundwater Quality Standards