



# Hydro Tech Environmental, Corp.

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January 20, 2011

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

**Re: Remedial Action Work Plan (RAWP) Stipulation List  
920-924 Westchester Avenue, Bronx, NY  
NYC 11BCBP002X & 11BCBP003X**

Dear Mr. Chawla:

Hydro Tech Environmental (HTE) 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 922 Westchester Owners, LLC. This letter serves as an addendum to the RAWP to stipulate additional 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:

1. The quality assurance/quality control program for collection of end point samples for this remedial action will include the following provisions:
  - New York State ELAP certified labs will be utilized for chemical analysis
  - Data summary tables will be prepared that include all data entries (including non-detect results) and will be presented in the Remedial Action Report (RAR)
  - Full chain of custody for analytical samples will be maintained and forms will be reported in the RAR
  - Collection of QA/QC samples including field blanks, trip blanks, lab blanks and field duplicates will be incorporated.
2. The contemplated future use of the Sites will consist of commercial and residential use which includes an 8-story mixed-use residential and commercial building with a community facility and a full basement. The building will be identified as 920-922 Westchester Avenue, Bronx, New York. There is no open space proposed for this property. The basement will consist of a ventilated parking area and will be developed over the entire Site. The proposed basement slab will be approximately 11 feet below grade and basement slab will be approximately 9 inches in thickness. The proposed depth of excavation is approximately 13 feet below surface grade. The proposed development will include no open spaces or landscaped areas.

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3. A remedial design document will be prepared and submitted to OER prior to implementation of the remedial action that provides design specifications for the following engineering controls, and will include design sketches for these controls:
  - Vapor barrier
  - Sub slab depressurization including venting plan
4. The criterion attached in Addendum 2 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.
5. Backfill soil quality limits applicable to this project are listed in Addendum 3. Soil backfill imported to the project site will conform to these values.
6. Signage for the project will include a sturdy placard mounted on the property line at the primary construction entrance to the property that includes the NYC BCP Fact Sheet announcing the remedial action. The fact sheet will be laminated and permanently affixed to the placard. The Fact Sheet will be visible and legible on the public right-of-way and will be posted in the immediate vicinity of building and other permits.
7. Original signed certification of the RAWP with a PE stamp is included in Addendum 4.
8. A CD containing the final RAWP including this approved Stipulation List will be placed in the library that provides the primary public repository for project documents.
9. The area of stained concrete on Lot 36 (Site B) will be removed at the start of the soil removal action. Screening for evidence of petroleum stained soil will be performed under the slab. OER will be promptly notified of findings. Contingency measures may be required by OER as described in Addendum 2 pending communication with OER.
10. Soil vapor sampling protocol was conducted in accordance with New York State Department of Health (NYSDOH) Guidance for Evaluating Soil Vapor Intrusion in the State of New York October 2006. Soil vapor points were installed utilizing direct push technology and consisted of a stainless steel screen or implant fitted with dedicated polyethylene tubing. The soil vapor implants were installed at least 1 foot below the proposed depth of foundation. Soil vapor implants SG-1 through SG-3 were installed to a total depth of 8 feet below grade. Soil vapor implant SG-4 was installed to a total depth of 9 feet below grade. Soil vapor implants SG-5 through SG-10 were installed to a total depth of 8 feet below grade.

The following procedures were included during the installation of the soil vapor points:

- The implants were installed using direct push technology.
- Porous inert backfill material (e.g. glass beads) was used to create a sampling zone 1 to 2 feet in length.
- The implants were fitted with inert tubing (e.g., polyethylene) of ¼ inch diameter and of laboratory quality to the surface.
- The implants were sealed above the sampling zone with a bentonite slurry for a minimum distance of 3 feet to prevent outdoor air infiltration and the remainder of the borehole were backfilled with clean material and capped in surface with concrete.

Soil vapor samples were collected utilizing 6 liter pre-cleaned, passivated, evacuated whole

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air Summa<sup>®</sup> Canister. Initially, 1 to 3 implant volumes (i.e. the volume of the sample probe and tube) were purged prior to collecting the soil vapor samples at a rate of less than 0.2 liter per minute utilizing a syringe. The samples were then collected for a period of 6 hours.

In order to insure the integrity of the borehole seal and to verify that ambient air is not inadvertently drawn into the sample, a tracer gas, Helium, was used to enrich the atmosphere in the immediate vicinity of the sampling location. Plastic sheeting was used to keep the tracer gas in contact with the soil vapor point during the sampling. In addition, the Helium was used in lieu of the collection of a field blank for the Summa<sup>®</sup> Canisters.

11. Air sampling was conducted in accordance with New York State Department of Health (NYSDOH) Guidance for Evaluating Soil Vapor Intrusion in the State of New York October 2006. Air samples were collected utilizing 6 liter pre-cleaned, passivated, evacuated whole air Summa<sup>®</sup> Canister. Each Summa canister is fitted with a 4-hour laboratory flow regulator. Immediately after opening the Summa<sup>®</sup> Canister, the initial vacuum (inches of mercury) and start time were recorded. After 4 hours of sampling, the Summa<sup>®</sup> canister was closed and the final vacuum and stop time were noted. Prior and during the sampling, the temperature at the location of each sampling was noted. All Summa<sup>®</sup> Canisters were labeled and sent to a laboratory certified to perform air analysis in New York State.

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**Addendum 2**  
**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

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(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 3 Imported Backfill Limits

Imported backfill must be soil which does not originate from another contaminated site, or, for backfill beneath a final soil cover or pavement, may be uncontaminated, unregulated material (per 6NYCRR Part 360)-item 2 below. Imported backfill must be tested, except as described below, and must not exceed the values below, based on the appropriate use column. Sites where significant ecological resources are present must meet the lower of the appropriate use column value or ecological limit (e.g., for Track 2 Residential with significant ecological resources, the arsenic limit would be 13, while the barium limit would be 350).

The values shown below for imported soils were determined by comparing either the Track 1 or the Track 2 use-based Protection of Public Health value (based on the site's achieved cleanup track) with the Protection of Groundwater value and selecting the lower of the two (for sites with no significant ecological resources.) If the site was cleaned up to protect significant ecological resources, then the ecological resource value would be used where it is lower than both the groundwater protection and public health protection values.

The following material may be imported, without chemical testing, to be used as backfill beneath pavement or the final soil cover (i.e. the uppermost 1 or 2 feet, depending on the site's use restriction), provided it contains less than 10% (by weight) material which would pass through a size 200 sieve:

- 1) - Rock or stone, consisting of virgin material from a permitted mine or quarry;
- 2) - Recycled concrete, brick or asphalt from a NYSDEC-registered C&D processing facility which conforms to Section 304 of the New York State Department of Transportation Standard Specifications Construction and materials Volume 1 (2002).

Constituent	TRACK 1 Unrestricted		TRACK 2 Residential	TRACK 2 Restricted - Residential	TRACK 2 Restricted - Commercial or industrial	Ecological Limit For Sites Which Have Ecological Resources
<b>Metals</b>						
Arsenic		13	16	16	16	13
Barium		350	350	400	400	433
Beryllium		7.2	14	47	47	10
Cadmium		2.5	2.5	4.3	7.5	4
Chromium, Hexavalent <sup>1</sup>		1	19	19	19	1
Chromium, Trivalent <sup>1</sup>		30	36	180	1500	41
Copper		50	270	270	270	50
Cyanide		27	27	27	27	NS <sup>2</sup>
Lead		63	400	400	450	63
Manganese		1600	2000	2000	2000	1600
Mercury (total)		0.18	0.73	0.73	0.73	0.18
Nickel		30	130	130	130	30

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Selenium		3.9	4	4	4	3.9
Silver		2	8.3	8.3	8.3	2
Zinc		109	2200	2480	2480	109
<b>PCBs/Pesticides</b>						
2,4,5-TP Acid (Silvex)		3.8	3.8	3.8	3.8	NS <sup>2</sup>
4,4'-DDE		0.0033	1.8	8.9	17	0.0033
4,4'-DDT		0.0033	1.7	7.9	47	0.0033
4,4'-DDD		0.0033	2.6	13	14	0.0033
Aldrin		0.005	0.019	0.097	0.19	0.14
Alpha-BHC		0.02	0.02	0.02	0.02	0.04
Beta-BHC		0.036	0.072	0.09	0.09	0.6
Chlordane (alpha)		0.094	0.91	2.9	2.9	1.3
Delta-BHC		0.04	0.25	0.25	0.25	0.04
Dibenzofuran		7	14	59	210	NS <sup>2</sup>
Dieldrin		0.005	0.039	0.1	0.1	0.006
Endosulfan I		2.4	4.8	24	102	NS <sup>2</sup>
Endosulfan II		2.4	4.8	24	102	NS <sup>2</sup>
Endosulfan sulfate		2.4	4.8	24	200	NS <sup>2</sup>
Endrin		0.014	0.06	0.06	0.06	0.014
Heptachlor		0.042	0.38	0.38	0.38	0.14
Lindane		0.1	0.1	0.1	0.1	6
Polychlorinated biphenyls		0.1	1	1	1	1
<b>Semivolatile Organic</b>						
<b>Compounds</b>						
Acenaphthene		20	98	98	98	20
Acenaphthylene		100	100	100	107	NS <sup>2</sup>
Anthracene		100	100	100	500	NS <sup>2</sup>
Benzo(a)anthracene		1	1	1	1	NS <sup>2</sup>
Benzo(a)pyrene		1	1	1	1	2.6
Benzo(b)fluoranthene		1	1	1	1.7	NS <sup>2</sup>
Benzo(g,h,i)perylene		100	100	100	500	NS <sup>2</sup>
Benzo(k)fluoranthene		0.8	1	1.7	1.7	NS <sup>2</sup>
Chrysene		1	1	1	1	NS <sup>2</sup>
Dibenz(a,h)anthracene		0.33	0.33	0.33	0.56	NS <sup>2</sup>
Fluoranthene		100	100	100	500	NS <sup>2</sup>
Fluorene		30	100	100	386	30
Indeno(1,2,3-cd)pyrene		0.5	0.5	0.5	5.6	NS <sup>2</sup>
m-Cresol(s)		0.33	0.33	0.33	0.33	NS <sup>2</sup>
Naphthalene		12	12	12	12	NS <sup>2</sup>
o-Cresol(s)		0.33	0.33	0.33	0.33	NS <sup>2</sup>

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p-Cresol(s)		0.33	0.33	0.33	0.33		NS <sup>2</sup>
Pentachlorophenol		0.8	0.8	0.8	0.8		0.8
Phenanthrene		100	100	100	500		NS <sup>2</sup>
Phenol		0.33	0.33	0.33	0.33		30
Pyrene		100	100	100	500		NS <sup>2</sup>
<b>Volatile Organic Compounds</b>							
1,1,1-Trichloroethane		0.68	0.68	0.68	0.68		NS <sup>2</sup>
1,1-Dichloroethane		0.27	0.27	0.27	0.27		NS <sup>2</sup>
1,1-Dichloroethene		0.33	0.33	0.33	0.33		NS <sup>2</sup>
1,2-Dichlorobenzene		1.1	1.1	1.1	1.1		NS <sup>2</sup>
1,2-Dichloroethane		0.02	0.02	0.02	0.02		10
1,2-Dichloroethene(cis)		0.25	0.25	0.25	0.25		NS <sup>2</sup>
1,2-Dichloroethene(trans)		0.19	0.19	0.19	0.19		NS <sup>2</sup>
1,3-Dichlorobenzene		2.4	2.4	2.4	2.4		NS <sup>2</sup>
1,4-Dichlorobenzene		1.8	1.8	1.8	1.8		20
1,4-Dioxane		0.1	0.1	0.1	0.1		0.1
Acetone		0.05	0.05	0.05	0.05		2.2
Benzene		0.06	0.06	0.06	0.06		70
Butylbenzene		12	12	12	12		NS <sup>2</sup>
Carbon tetrachloride		0.76	0.76	0.76	0.76		NS <sup>2</sup>
Chlorobenzene		1.1	1.1	1.1	1.1		40
Chloroform		0.37	0.37	0.37	0.37		12
Ethylbenzene		1	1	1	1		NS <sup>2</sup>
Hexachlorobenzene		0.33	0.33	1.2	3.2		NS <sup>2</sup>
Methyl ethyl ketone		0.12	0.12	0.12	0.12		100
Methyl tert-butyl ether		0.93	0.93	0.93	0.93		NS <sup>2</sup>
Methylene chloride		0.05	0.05	0.05	0.05		12
Propylbenzene-n		3.9	3.9	3.9	3.9		NS <sup>2</sup>
Sec-Butylbenzene		11	11	11	11		NS <sup>2</sup>
Tert-Butylbenzene		5.9	5.9	5.9	5.9		NS <sup>2</sup>
Tetrachloroethene		1.3	1.3	1.3	1.3		2
Toluene		0.7	0.7	0.7	0.7		36
Trichloroethene		0.47	0.47	0.47	0.47		2
Trimethylbenzene-1,2,4		3.6	3.6	3.6	3.6		NS <sup>2</sup>
Trimethylbenzene-1,3,5		8.4	8.4	8.4	8.4		NS <sup>2</sup>
Vinyl chloride		0.02	0.02	0.02	0.02		NS <sup>2</sup>
Xylene (mixed)		0.26	1.6	1.6	1.6		0.26

Footnotes:

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- 1) The SCO for Hexavalent or Trivalent Chromium is considered to be met if the analysis for the total species of this contaminant is below the specific SCO for Hexavalent Chromium.
  
- 2) NS = Not Specified. Protection of ecological resources for SCOs were not developed for contaminants identified in the above table with "NS". Where such contaminants appear in the above table, the applicant may be required by the Department to calculate a protection of ecological resources SCO.

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### **Backfill from Off-Site Sources**

All materials proposed for import onto the Site will be approved by the Remedial Engineer and will be in compliance with provisions in this RAWP prior to receipt at the Site.

Material from industrial sites, spill sites, other environmental remediation sites or other potentially contaminated sites will not be imported to the Site.

The Final Engineering Report/Remedial Action Report will include the following certification by the Remedial Engineer: "I certify that all import of soils from off-Site, including source evaluation, approval and sampling, has been performed in a manner that is consistent with the methodology defined in the Remedial Action Work Plan".

All imported soils will meet NYSDEC approved backfill or cover soil quality objectives for this Site. These NYSDEC approved backfill or cover soil quality objectives are listed in Table 1. Non-compliant soils will not be imported onto the Site without prior approval by NYSDEC. Nothing in the approved Remedial Action Work Plan or its approval by NYSDEC should be construed as an approval for this purpose.

Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this Site, will not be imported onto the Site without prior approval by NYSDEC. Nothing in this Remedial Action Work Plan should be construed as an approval for this purpose. Solid waste will not be imported onto the Site. Trucks entering the Site with imported soils will be securely covered with tight fitting covers.

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**Addendum 4**

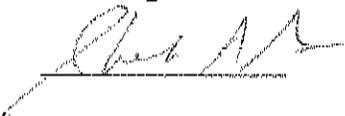
Original signed certification of the RAWP with a PE stamp is included in Addendum 4.

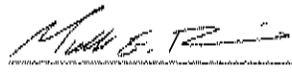
# CERTIFICATIONS

I, Shaik A. Saad, am a Professional Engineer licensed in the State of New York. I have primary direct responsibility for implementation of the remedial action for the 920-924 Westchester Avenue Sites, Sites No. NYC 11CBCP002 and 11CBCP003X.

I, Mark E. Robbins am a Qualified Environmental Professional as defined in §43-140. I have primary direct responsibility for implementation of the remedial action for the 920-924 Westchester Avenue Sites, NYC BCP Sites No. 11CBCP002X and 11CBCP003X.

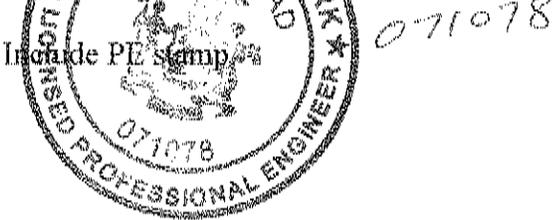
I certify that this RAWP has provisions for nuisance control during the remediation and all invasive development work, including a dust, odor and vector suppression. Thresholds established in this Plan are intended to prevent nuisances from occurring.

<u>Shaik A. Saad</u> <u>071078</u>	<u>11/30/2010</u>	
NYS PE Name and License Number	Date	Signature

<u>Mark E. Robbins</u>	<u>11/30/2010</u>	
NYS Qualified Env. Professional	Date	Signature

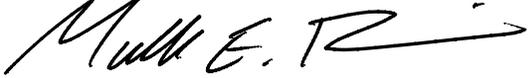
I certify that all engineering plans, specifications and associated designs included in the RAWP have been personally developed by me or under my direct supervision, meet industry standards, and are appropriate for the intended purpose established in this Plan. It is a violation of Article 130 of New York State Education Law for any person to alter this document in any way without the express written verification of adoption by any New York State licensed engineer in accordance with Section 7209(2), Article 130, New York State Education Law.

<u>SHAIK A. SAAD</u>		
NYS PE Name and License Number	Date	Signature



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Very Truly Yours,  
**Hydro Tech Environmental, Corp.**

A handwritten signature in black ink, appearing to read "Mark E. Robbins", written in a cursive style.

Mark Robbins, CGP, CEI  
Principal

cc: Hannah Moore, NYC OER