King, Matthew A (DEC)

From: King, Matthew A (DEC)
Sent: Monday, July 06, 2020 11:04 AM
To: Kopcow, Dan
Cc: Eaton, Daniel J (DEC); Tanya B. Alexander (alexandert@natfuel.com); Brad Walker (walkerb@natfuel.com); Holden, Jeffrey
Subject: RE: NFG Hornell - Proposed Well Abandonment and Baseline GW Sampling

Hi Dan,

The Department accepts the Proposed Well Abandonment and Baseline GW Sampling plans as outlined below. Please notify the Department ahead of the planned work.

Thanks,

Matt

Matthew King
Geologist Trainee, Remedial Bureau C
Division of Environmental Remediation

New York State Department of Environmental Conservation
625 Broadway, Albany, NY 12233
P: 518-402-7383 | F: 518-402-9679 | Matthew.King@dec.ny.gov |

From: Kopcow, Dan <dkopcow@geiconsultants.com>
Sent: Tuesday, June 23, 2020 11:43 AM
To: King, Matthew A (DEC) <Matthew.King@dec.ny.gov>
Cc: Eaton, Daniel J (DEC) <daniel.eaton@dec.ny.gov>; Tanya B. Alexander (alexandert@natfuel.com) <alexandert@natfuel.com>; Brad Walker (walkerb@natfuel.com) <walkerb@natfuel.com>; Holden, Jeffrey <JHolden@geiconsultants.com>
Subject: NFG Hornell - Proposed Well Abandonment and Baseline GW Sampling

Hi Matt,

On behalf of National Fuel Gas, I'm sending you this email regarding proposed well abandonment and baseline groundwater sampling at the Hornell MGP site. We are requesting your review and acceptance of the following.

As indicated in the 95% Remedial Design package for Hornell, there are certain monitoring wells that are located within or immediately adjacent to the soil remediation area targeted for excavation and ISS that will be abandoned either before or as part of the soil remediation work. The 95% Remedial Design package you're currently reviewing indicates that well abandonment could be accomplished by:

1. Removing/destroying the well as part of the excavation and ISS activities if the well is located entirely within the zone of planned soil remediation
2. Pulling the casing and grouting in accordance with NYSDEC guidance if the well is located outside the soil remediation area
3. A combination of both methods (i.e., partial grouting and then removal of overlying materials) where the well is within the soil remediation zone but extends deeper than the planned excavation/ISS depth in that area. This would be accomplished by grouting the lower portion of the well and then allowing the upper portion (within the excavation/ISS zone) to be removed/destroyed as part of the excavation and ISS activities

For wells in the second or third categories above, the well abandonment will require using a drilling subcontractor to abandon or partially grout the wells. GEI is planning to implement this work prior to mobilization of the Remediation Contractor; likely during the late summer pending NYSDEC approval of the 95% design. While the 95% design focused on abandoning or protecting wells within the work area, we are more broadly considering all site-related wells for abandonment. This includes, for example, wells north of Franklin Street and east of the hotel where soil remediation activities are not expected to occur.

In evaluating the list of wells that may be abandoned, we also considered the need for and scope of post-remediation groundwater monitoring that may be required for the site. Groundwater monitoring will be required to demonstrate attenuation of MGP-related constituents in groundwater, as indicated by the following ROD excerpt:

6. Monitored Natural Attenuation

Groundwater contamination (remaining after active remediation) will be addressed with monitored natural attenuation (MNA). Groundwater will be monitored for site related contamination and also for MNA indicators which will provide an understanding of the (biological activity) breaking down the contamination. It is anticipated that contamination will decrease by an order of magnitude in a reasonable period of time (5 to 10 years). Reports of the attenuation will be provided at 5 and 10 years, and active remediation will be proposed if it appears that natural processes alone will not address the contamination. The contingency remedial action will depend on the information collected, but it is currently anticipated that In-Situ Chemical Oxidation (ISCO) would be the expected contingency remedial action.

While the specific scope of the monitoring program will be developed after the remedy construction as part of the Site Management Plan (SMP), we anticipate that, at a minimum, the monitoring program will require at least five wells: one upgradient, two side-gradient (one on each side of the soil remediation area), and two downgradient (one representing the shallow zone and one representing the deeper zone). Other wells may be appropriate for monitoring based on other factors, such as remedy implementation issues or NYSDEC input.
Based on the considerations listed above, Table 1 summarizes the various site wells, whether each is proposed for abandonment, and the associated rationale. For wells proposed for abandonment, the abandonment method (based on three options listed above) is also indicated.

Table 1 also includes GEI's recommendation for whether each well should be sampled prior to remedy construction in order to establish a current baseline against which future groundwater

monitoring results could be compared for the purpose of assessing the remedial effectiveness in accordance with the ROD excerpt above. With the exception of MW15 and MW16, which were installed and sampled as part of the SPDI activities in 2019, other site wells have not been sampled since at least 2012. Having current data to represent pre-remediation conditions may be helpful when assessing conditions 5- and 10-years after soil remediation is performed.

In support of this evaluation, Figure 1 is a copy of 95% Remedial Design Drawing S-009, which shows the various well locations, including the ones identified for abandonment based on the soil remedy. Figure 2 shows representative shallow groundwater elevation contours and inferred flow directions. Appendix A includes tables summarizing groundwater analytical data from the Remedial Investigation.

In overview, GEI is proposing to abandon 11 of the existing 17 monitoring wells (including the one "existing well" installed for unknown purposes during prior site investigations). Of these, one (MW12) is proposed for re-installation after the soil remediation is complete. MW12 is well suited for side-gradient monitoring to the north side of the soil remediation area but is located in an area where it cannot be reasonably protected during remedy construction activities. With reinstallation of MW12, this would leave seven wells available to choose among when developing the post-remediation sampling program.

As indicated on Table 1, GEI is also proposing to sample six wells to establish current groundwater quality conditions as a baseline for comparison of future monitoring data. Sampling these wells may also provide data helpful to the selection of specific wells to be proposed in the SMP for the post-construction monitoring program.

Pending your review and comment/concurrence, GEI will begin planning the groundwater sampling and pre-Contractor-mobilization well abandonment activities and keep you posted regarding target dates.

Thanks.

GEI50

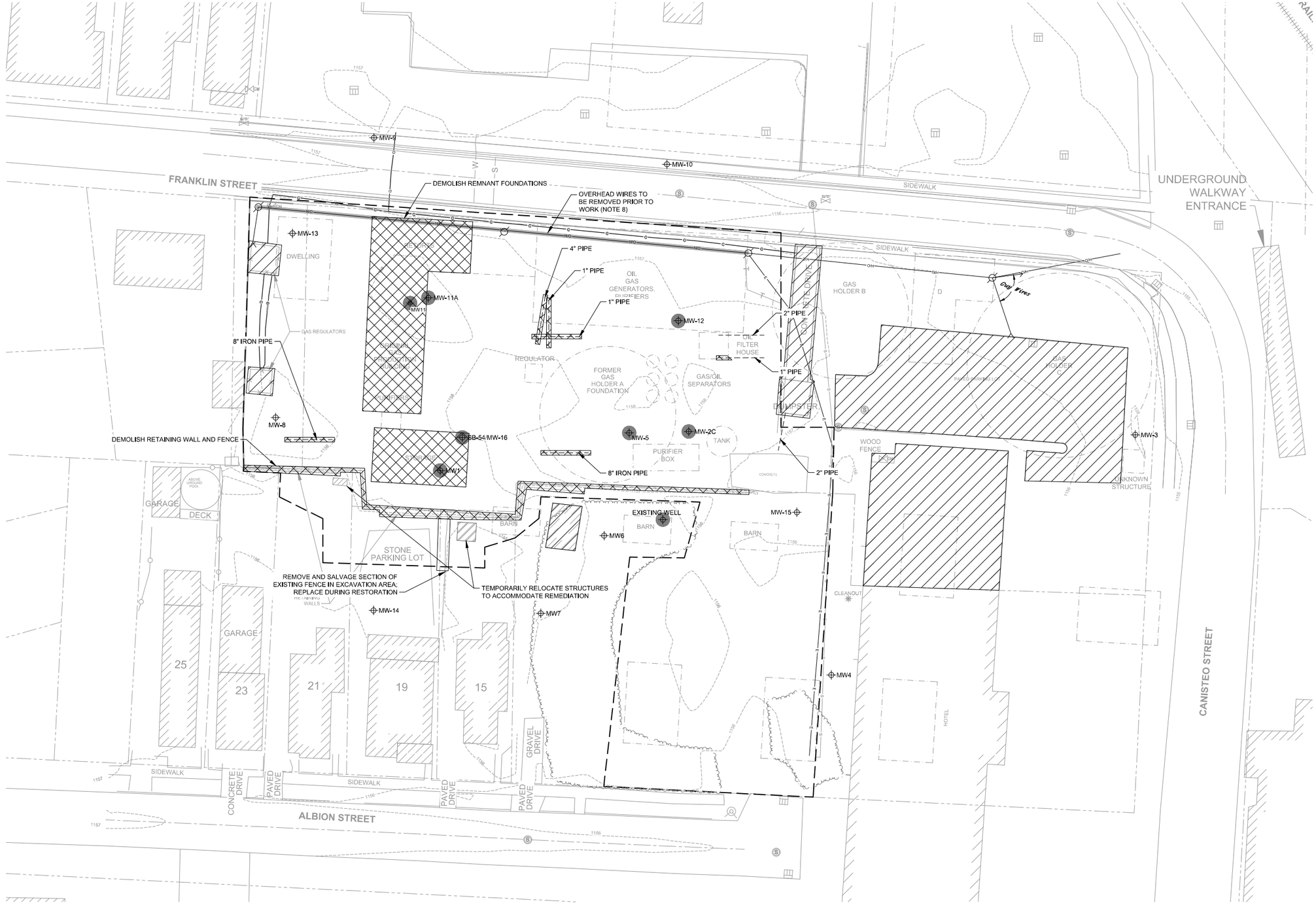
DANIEL KOPCOW, P.E., PMP
Vice President/Branch Manager
607.216.8976 cell: 607.206.9075
1301 Trumansburg Road, Suite N, Ithaca, NY 14850

Table

Table 1
Preliminary Evaluation of Well Abandonment and Baseline Sampling
Hornell Former MGP Site
Hornell, New York

Well ID	Screened section (feet bgs)	Boring Depth (ft bgs)	Excav. Depth	ISS Depth	Retain or Abandon?	Abandonment Method	Retain/Abandon Rationale	Sample for Pre-Remediation Baseline?	Sampling Rationale
MW1	15-25	27	8	34	Abandon	Remove/destroy during Excavation and ISS	Well is within soil remediation limits and shallower than soil remediation depth	No	Not a candidate well for post-remediation monitoring
MW2C	12-22	22.3	8	21	Abandon	Grout bottom 2 feet, then remove/destroy the rest during Excavation and ISS	Well is within soil remediation limits, but borehole is deeper than soil remediation depth	No	Not a candidate well for post-remediation monitoring
MW3	12-22	22.3	N/A	N/A	Abandon	Pull casing and grout the hole	Historically clean well too far downgradient to be useful for post-remediation monitoring	No	Not a candidate well for post-remediation monitoring
MW4	6-16	22.3	N/A	N/A	Retain	N/A	Candidate location for monitoring shallow groundwater downgradient of remediation area to confirm NA	Yes	Establish baseline pre-remediation condition for evaluation of future data; support evaluation of appropriate downgradient post-remediation monitoring location
MW5	14-20	20.3	14	21	Abandon	Remove/destroy during Excavation and ISS	Well is within soil remediation limits and shallower than soil remediation depth	No	Not a candidate well for post-remediation monitoring
MW6	12-22	22	N/A	N/A	Retain	N/A	Candidate location for monitoring shallow groundwater downgradient of remediation area to confirm NA	Yes	Establish baseline pre-remediation condition for evaluation of future data; support evaluation of appropriate downgradient post-remediation monitoring location
MW7	13-23	25	N/A	N/A	Retain	N/A	Candidate monitoring location as side-gradient to ISS and/or downgradient of MW8	Yes	Cyanide above standard in most recent sampling event; downgradient from MW8
MW8	13-23	25	1	N/A	Retain	N/A - protect during 1' soil excavation	Candidate monitoring location to assess cyanide	Yes	Upgradient relative to ISS, but cyanide above GW standards and increasing over two prior sampling events; assess trend and need for continued monitoring
MW9	13-23	25	N/A	N/A	Abandon	Pull casing and grout the hole	Not needed for future monitoring	No	Clean side/up-gradient well
MW10	13-23	25	N/A	N/A	Abandon	Pull casing and grout the hole	Not needed for future monitoring	No	Clean side-gradient well laterally distant from impacted area
MW11A	13-21	23	8	21	Abandon	Grout bottom 3 feet, then remove/destroy the rest during Excavation and ISS	Well is within soil remediation limits, but borehole is deeper than soil remediation depth	No	Not a candidate well for post-remediation monitoring
MW12	13-23	25	8	21	Abandon	Pull casing and grout the hole	Well is immediately adjacent to sheetpile wall and within contractor staging area; unlikely it can be adequately protected	Yes	This location is only suitable side-gradient location for post-remediation monitoring to the north; replace after remedial construction is complete.
MW13	12-22	24	1	N/A	Retain	N/A - protect during 1' soil excavation	Candidate location for future upgradient monitoring	Yes	Establish baseline pre-remediation condition for evaluation of future data
MW14	12-22	24	N/A	N/A	Abandon	Pull casing and grout the hole	Clean side-gradient well - Not needed for future monitoring	No	Not a candidate well for post-remediation monitoring
MW15	33-35	35	N/A	N/A	Retain	N/A	Candidate location for monitoring deep groundwater downgradient of remediation area to confirm NA	No	Sampled in 2019 after installation; data recent enough to serve as baseline
MW16(SB54)	33-35	35	8	34	Abandon	Grout bottom 2 feet, then remove/destroy the rest during Excavation and ISS	Well is within soil remediation limits, but borehole is deeper than soil remediation depth	No	Sampled in 2019 after installation; data recent enough to serve as baseline
Existing Well	Unknown	Unknown	N/A	N/A	Abandon	Pull casing and grout the hole	Unknown well from pre-MGP work by others	No	Existing well of unknown construction
			Totals		Abandon	11	Sample	6	
					Retain	6			

Figures



LEGEND:

- LIMITS OF WORK
- PROTECT
- DEMOLISH
- MONITORING WELL TO BE ABANDONED BY OTHERS PRIOR TO REMEDIATION OR CAN BE DESTROYED BY CONTRACTOR DURING EXCAVATION AND ISS (NOTE 5)
- GAS LINE TO BE PROTECTED
- OVERHEAD WIRES TO BE RELOCATED
- HISTORIC STRUCTURE

NOTES

1. PROTECT THE ABUTTING RESIDENCES, AND HOTEL, AND STRUCTURES/ IMPROVEMENTS OUTSIDE THE WORK LIMITS.
2. PROTECT THE ADJACENT ROADWAY WHERE NOT INDICATED FOR DEMOLITION.
3. DEMOLISH REMNANT STRUCTURES LOCATED WITHIN THE EXCAVATION EXTENTS.
4. RELOCATE THE DUMPSTER TO A LOCATION THAT IS ACCEPTABLE TO THE HOTEL.
5. WELLS, OR PORTIONS THEREOF, THAT ARE TO BE ABANDONED AND ARE WITHIN THE AREA OF SOILS SUBJECT TO EXCAVATION AND ISS MAY BE DESTROYED BY THE CONTRACTOR DURING EXCAVATION AND ISS. WELLS TO BE ABANDONED AND ARE OUTSIDE OR DEEPER THAN THE EXCAVATION/ISS ZONE WILL BE ABANDONED IN ACCORDANCE WITH NYSDEC CP-43 GROUNDWATER MONITORING WELL DECOMMISSIONING POLICY PRIOR TO CONTRACTOR MOBILIZATION.
6. SUBSURFACE PIPES SHOWN WERE ENCOUNTERED IN TEST PITS EXCAVATED DURING THE SUPPLEMENTAL PRE-DESIGN INVESTIGATION IN 2019. THEIR LOCATIONS ARE APPROXIMATE AND MAY BE LONGER THAN SHOWN ON THE FIGURE. THERE MAY BE OTHER PIPES AND STRUCTURES THAT EXIST IN THE SITE SUBSURFACE THAT ARE NOT SHOWN ON THE FIGURE. REFER TO SPECIFICATIONS REGARDING REMOVAL AND CAPPING OF ABANDONED SUBSURFACE PIPING.
7. ALL WELLS NOT INDICATED TO BE ABANDONED SHALL BE PROTECTED BY THE CONTRACTOR DURING THE WORK. WELLS DAMAGED DURING THE PERFORMANCE OF THE WORK SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
8. NYSEG WILL TEMPORARILY REMOVE OVERHEAD WIRES ADJACENT TO THE SITE PRIOR TO CONTRACTOR MOBILIZATION.

FIGURE 1

95% DESIGN

Attention:

0 1"

If this scale bar does not measure 1" then drawing is not original scale.

NO.	DATE	ISSUE/REVISION	APP
3	5/26/2020	95% DESIGN	CRP
2	1/6/2020	75% DESIGN	CRP
1	1/29/2018	50% DESIGN	CRP
0	12/7/2018	PROGRESS 50%	CRP

Designed:	C. PRAY
Checked:	J. HOLDEN
Drawn:	D. EDDY
Submitted By:	D. KOPCOW
P.E. Number:	077276

GEI Consultants
GEI CONSULTANTS, INC., P.C.
1301 TRUMANSBURG ROAD
SUITE N
ITHACA, NY 14850
(607)216-8955

national fuel

GEI Project 1801687

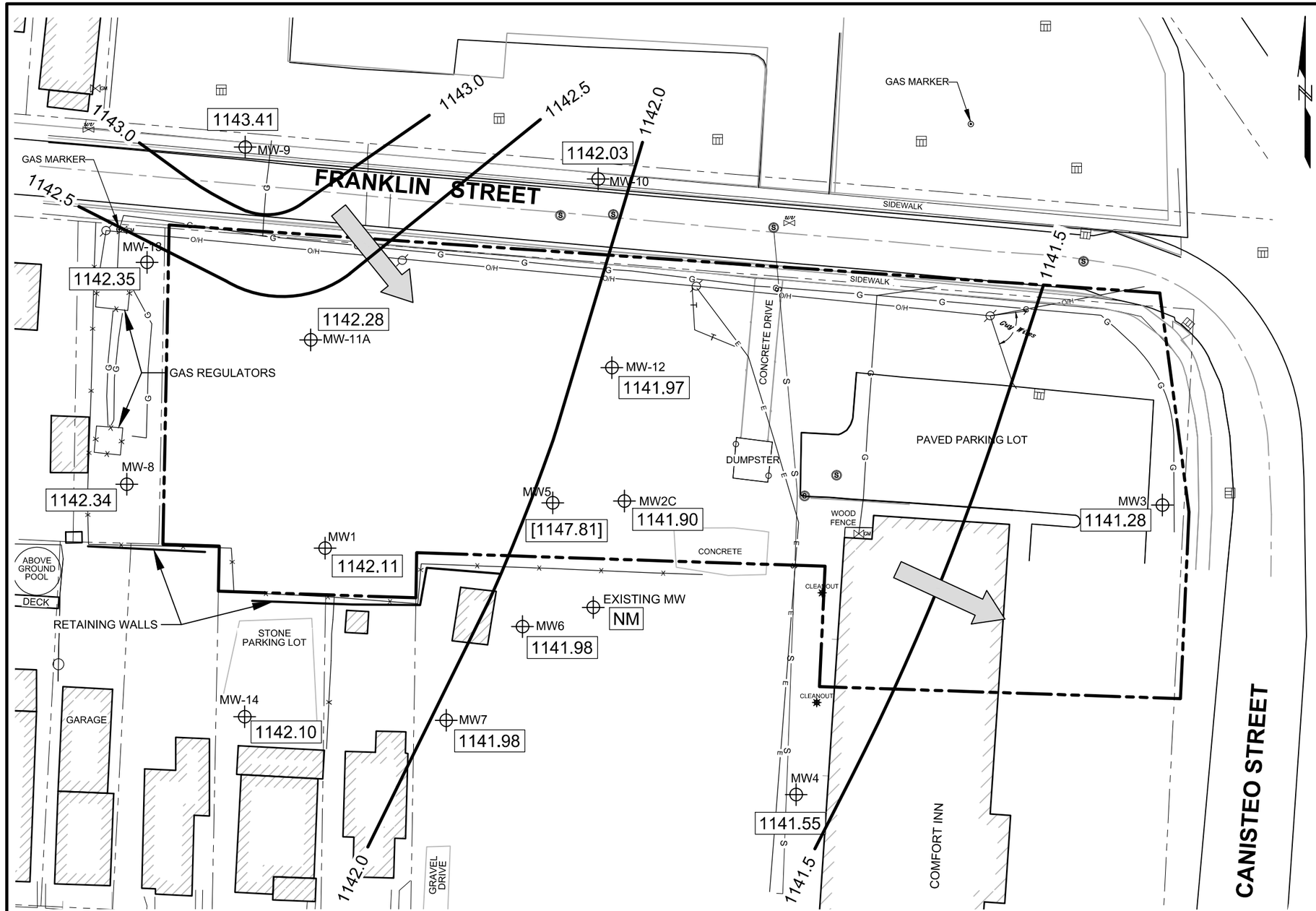
Hornell Former MGP Site
Hornell, New York

DEMOLITION AND PROTECTION PLAN

DWG. NO. S-009

SHEET NO. 9 OF 18

\\geiconsults B:\Working\NATIONAL FUEL GAS\1801687 Hornell MGP Remediation DB\00_CAD\Design\Working\1801687 - S-009.dwg - 5/26/2020



LEGEND

- APPROXIMATE SITE BOUNDARY (FROM NYSDEC)
- APPROXIMATE PROPERTY BOUNDARIES
- CHAIN-LINK FENCE
- EXISTING STRUCTURE

REMEDIAL INVESTIGATION SAMPLE LOCATIONS

- MW1 — MONITORING WELL
- 1140.88 — GROUNDWATER ELEVATION (FEET NAVD 88) FEBRUARY 8, 2012
- [1147.81] — GROUNDWATER ELEVATION NOT USED IN GENERATION OF CONTOURS
- NM — NOT MEASURED
- 1141.0 — GROUNDWATER CONTOUR (FEET NAVD 88)
- APPROXIMATE GROUNDWATER FLOW DIRECTION

SOURCES:

1. Sur□e□ □re□ared for GEI Consultants, Inc. b□William J Tucker, II PLS □50369, Clear Creek Land Sur□e□ing, L.L.C., S□ring□ille, N.Y. dated Februar□11, 2011.
2. Cit□of Hornell, Steuben Count□, NY Ta□Ma□No. 166.06 dated Oct. 18, 2008.
3. *Modification to Order on Consent and Administrative Settlement, Attachment 1* between New York State De□artment of En□ironmental Conser□ation, Office of General Counsel, and National Fuel Gas dated Oct. 21, 2010.
4. Sanborn Fire Insurance Ma□s from 1888 to 1961.

0 40 80

SCALE, FEET

REMEDIAL INVESTIGATION REPORT
HORNELL FORMER MGP SITE
HORNELL, NEW YORK

NATIONAL FUEL GAS DISTRIBUTION COMPANY

GEI Consultants

Project 102260-1008

GROUNDWATER CONTOURS FEBRUARY 2012

June 2014 Figure 2

I:\Project\National Fuel Gas Dist Co\HORNELL\RIR\2014-06\Hornell - RI Figures.dwg

Appendix A

RI Data Tables

Validated

Table 10
Analytical Groundwater Results
Hornell Former MGP Site
Hornell, New York

Location Name		MW-1	MW-1	MW-1	MW-1	MW-2	MW-2	MW-2	MW-3	MW-3	MW-3	MW-4	MW-4	MW-4	MW-5	MW-5	MW-5	MW-5	MW-6	MW-6	MW-7	MW-7	MW-8	MW-8	MW-9	MW-9	MW-10	MW-10	MW-11	MW-11	MW-12	MW-12	MW-13	MW-14
Sample Name		MW-1	DUP 02232011	MW1	MW1	MW-2C	MW2C	MW2C	MW-3	MW3	MW3	MW-4	MW4	MW4	MW5	DUP02102012	MW5	DUP10252011	MW6	MW6	MW7	MW7	MW8	MW8	MW9	MW9	MW10	MW10	MW11A	MW11A	MW12	MW12	MW13	MW14
Sample Date		2/23/2011	2/23/2011	10/25/2011	2/10/2012	2/23/2011	10/25/2011	2/9/2012	2/23/2011	10/24/2011	2/10/2012	2/23/2011	10/24/2011	2/9/2012	2/10/2012	2/10/2012	10/25/2011	10/25/2011	10/25/2011	2/9/2012	10/25/2011	2/9/2012	10/25/2011	2/10/2012	10/26/2011	2/9/2012	10/25/2011	2/9/2012	10/26/2011	2/10/2012	10/24/2011	2/10/2012	2/10/2012	2/9/2012
Parent Sample Code			MW-1													MW5		MW5																
Analyte	NY AWQS																																	
BTEX (ug/L)																																		
Benzene	1	5 U	5 U	**1100**	**2400**	5 U	**6**	**12**	5 U	1 U	1 U	5 U	1 U	1 U	**15**	**16**	**15**	**15**	**59**	**26**	**0.3 J**	1 U	1 U	1 U	**0.71 J**	**0.15 J**	**0.34 J**	1 U	**4100**	**2500**	**5.8**	**2**	1 U	1 U
Toluene	5	5 U	5 U	**130**	**170**	5 U	**2.3**	**2.8**	5 U	1 U	1 U	5 U	1 U	1 U	**14**	**13**	**19**	**21**	**0.62 J**	**0.17 J**	**0.32 J**	1 U	1 U	1 U	**0.38 J**	**0.32 J**	**0.45 J**	1 U	**1300**	**1900**	**0.32 J**	1 U	1 U	1 U
Ethylbenzene	5	5 U	5 U	**140**	**270**	5 U	**17 J**	**38**	5 U	1 U	1 U	5 U	1 U	1 U	**110**	**100**	**120**	**130**	**7.3**	**1.4**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**71 J**	**44 J**	**0.6 J**	**0.24 J**	1 U	1 U
Total Xylene	5	5 U	5 U	**220**	**380**	5 U	**6.5**	**13**	5 U	3 U	3 U	5 U	3 U	3 U	**120**	**120**	**150**	**160**	**9.8**	**0.67 J**	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	**510 J**	**470**	**1.1 J**	3 U	3 U	3 U
Total BTEX	NE	ND	ND	**1590**	**3220**	ND	**31.8**	**65.8**	ND	ND	ND	ND	ND	ND	**259**	**249**	**304**	**326**	**76.72**	**28.24**	**0.62**	ND	ND	ND	**1.09**	**0.47**	**0.79**	ND	**5981**	**4914**	**7.82**	**2.24**	ND	ND
Other VOCs (ug/L)																																		
Acetone	50*	10 UJ	10 UJ	250 U	630 UJ	10 UJ	5 U	5 UJ	10 UJ	5 U	5 UJ	10 UJ	5 U	5 UJ	38 UJ	50 UJ	38 UJ	38 UJ	5 U	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 U	5 UJ	5 UJ	5 UJ	1300 U	630 UJ	5 U	5 UJ	5 UJ	5 UJ
Bromodichloromethane	50*	5 U	5 U	50 U	130 U	5 U	1 U	1 U	5 U	1 U	1 U	5 U	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
Bromoform	50*	5 U	5 U	50 U	130 U	5 U	1 U	1 UJ	5 U	1 U	1 U	5 U	1 U	1 UJ	7.5 UJ	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 UJ	1 U	1 U	1 UJ	250 U	130 U	1 U	1 UJ	1 U	1 U
Bromomethane	5	5 U	5 U	50 U	130 U	5 U	1 U	1 U	5 U	1 U	1 U	5 U	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
2-Butanone (Methyl ethyl ketone)	50*	10 U	10 U	250 U	630 UJ	10 U	5 UJ	5 U	10 U	5 UJ	5 UJ	10 U	5 UJ	5 U	38 U	50 UJ	38 UJ	38 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 U	5 U	5 U	5 U	5 UJ	5 U	1300 U	630 UJ	5 UJ	5 U	5 UJ	5 UJ
Carbon disulfide	60*	5 U	5 U	50 U	130 U	5 U	1 U	1 U	5 U	1 U	1 U	5 U	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	5	5 U	5 U	50 U	130 U	5 U	1 U	1 U	5 U	1 U	1 U	5 U	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
Chlorobenzene	5	5 U	5 U	50 U	130 U	5 U	1 U	1 U	5 U	1 U	1 U	5 U	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
Chloroethane	5	5 U	5 U	50 U	130 U	5 U	1 U	1 U	5 U	1 U	1 U	5 U	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
Chloroform	7	5 U	5 U	50 U	130 U	5 U	1 U	1 U	5 U	1 U	**0.62 J**	5 U	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	**0.95 J**	**0.4 J**	**0.25 J**	1 U	1 U	1 U	**3.1**	**2.5**	**2.5**	**1.6**	250 U	130 U	1 U	**0.4 J**	**4**	**1.7**
Chloromethane	5	5 U	5 U	50 U	130 U	5 U	1 U	1 U	5 U	1 U	1 U	5 U	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
Cyclohexane	NE	NA	NA	50 U	130 U	NA	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	**0.25 J**	1 U	1 U	1 U	**0.31 J**	1 U	**0.33 J**	1 U	250 U	130 U	**0.4 J**	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	0.04	NA	NA	50 U	130 U	NA	1 U	1 UJ	NA	1 U	1 U	NA	1 U	1 UJ	7.5 UJ	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 UJ	1 U	1 UJ	1 U	1 UJ	1 U	1 UJ	250 U	130 U	1 U	1 UJ	1 U	1 U
Dibromochloromethane	50*	5 U	5 U	50 U	130 U	5 U	1 U	1 UJ	5 U	1 U	1 U	5 U	1 U	1 UJ	7.5 UJ	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 UJ	1 U	1 UJ	1 U	1 UJ	1 U	1 UJ	250 U	130 U	1 U	1 UJ	1 U	1 U
1,2-Dibromoethane	0.0006	NA	NA	50 U	130 U	NA	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	3	NA	NA	50 U	130 U	NA	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	3	NA	NA	50 U	130 U	NA	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	3	NA	NA	50 U	130 U	NA	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	5	NA	NA	50 U	130 U	NA	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	5	5 U	5 U	50 U	130 U	5 U	1 U	1 U	5 U	1 U	1 U	5 U	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	0.6	5 U	5 U	50 U	130 U	5 U	1 U	1 U	5 U	1 U	1 U	5 U	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	5	5 U	5 U	50 U	130 U	5 U	1 U	1 U	5 U	1 U	1 U	5 U	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	5	5 U	5 U	50 U	130 U	5 U	1 U	1 U	5 U	1 U	1 U	5 U	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	0.07	5 U	5 U	50 U	130 U	5 U	1 U	1 U	5 U	1 U	1 U	5 U	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1	5 U	5 U	50 U	130 U	5 U	1 U	1 U	5 U	1 U	1 U	5 U	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	0.4	5 U	5 U	50 U	130 U	5 U	1 U	1 U	5 U	1 U	1 U	5 U	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	0.4	5 U	5 U	50 U	130 U	5 U	1 U	1 UJ	5 U	1 U	1 U	5 U	1 U	1 UJ	7.5 UJ	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 UJ	1 U	1 UJ	1 U	1 UJ	1 U	1 UJ	250 U	130 U	1 U	1 UJ	1 U	1 U
2-Hexanone	50*	10 U	10 U	250 U	630 U	10 U	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	38 U	50 U	38 UJ	38 UJ	5 U	5 U	5 UJ	5 U	5 UJ	5 U	5 U	5 U	5 UJ	5 U	1300 U	630 U	5 U	5 U	5 U	5 U
Isopropyl benzene	5	NA	NA	**9.8 J**	130 U	NA	**1.9**	**3.5**	NA	1 U	1 U	NA	1 U	1 U	**14**	**13**	**16**	**17**	**2.5**	**1**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	**1.4**	**0.26 J**	1 U	1 U
Methyl acetate	NE	NA	NA	50 U	130 U	NA	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
Methyl tert-butyl ether	10*	NA	NA	50 U	130 U	NA	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
4-Methyl-2-pentanone	NE	10 U	10 U	250 U	630 U	10 U	5 U	5 U	10 U	5 U	5 U	10 U	5 U	5 U	38 U	50 U	38 U	38 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1300 U	630 U	5 U	5 U	5 U	5 U
Methylcyclohexane	NE	NA	NA	50 U	130 U	NA	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**0.26 J**	1 U	250 U	130 U	**0.94 J**	1 U	1 U	1 U
Methylene chloride	5	5 U	5 U	50 U	130 U	5 U	1 U	1 U	5 U	1 U	1 U	5 U	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
Styrene	5	5 U	5 U	**13 J**	**13 J**	5 U	1 U	1 U	5 U	1 U	1 U	5 U	1 U	1 U	**5.8 J**	**5.6 J**	**7 J**	**7.9**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**80 J**	**130**	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	5	5 U	5 U	50 U	130 U	5 U	1 U	1 U	5 U	1 U	1 U	5 U	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	**0.96 J**	**0.77 J**	1 U	1 U
Tetrachloroethene	5	5 U	5 U	50 U	130 U	5 U	1 U	1 U	5 U	1 U	1 U	5 U	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	5	NA	NA	50 U	130 U	NA	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	5	NA	NA	50 U	130 U	NA	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	5	5 U	5 U	50 U	130 U	5 U	1 U	1 U	5 U	1 U	1 U	5 U	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1	5 U	5 U	50 U	130 U	5 U	1 U	1 U	5 U	1 U	1 U	5 U	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
Trichloroethene	5	5 U	5 U	50 U	130 U	5 U	1 U	1 U	5 U	1 U	1 U	5 U	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	**0.42 J**	**0.32 J**	1 U	1 U
Trichlorofluoromethane	5	NA	NA	50 U	130 U	NA	1 U	1 U	NA	1 U	1 U	NA	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
Vinyl chloride	2	5 U	5 U	50 U	130 U	5 U	1 U	1 U	5 U	1 U	1 U	5 U	1 U	1 U	7.5 U	10 U	7.5 U	7.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	250 U	130 U	1 U	1 U	1 U	1 U
Non-carcinogenic PAHs (ug/L)																																		
Acenaphthene	20*	4.1 U	4 U	**64**	**90**	4.4 U	**1.6 J**	**4.4**	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	2.4 U	**25**	**26**	**27**	**28**	**8**	**5.7**	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	**32**	**22**	**22**	**6.4**	2.3 U	2.2 U
Acenaphthylene	NE	4.1 U	4 U	**19**	**23**	4.4 U	**2.6**	**11**	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	**0.71 J**	**31**	**33**	**21**	**22**	**2.5**	**2.4**	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	**110**	**75**	**2.1**	**0.75 J**	2.3 U	2.2 U
Anthracene	50*	4.1 U	4 U	**9.2**	**9.1**	4.4 U	2.1 U	2.2 U	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	2.4 U	**3.4**	**3.2**	**3.6**	**3**	2.3 U	2.2 U	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	**14**	**14**	**0.95 J**	**0.43 J**	2.3 U	2.2 U
Benzo[g,h,i]perylene	NE	4.1 U	4 U	2.1 U	2.4 U	4.4 U	2.1 U	2.2 U	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	2.4 U	2.2 U	2.3 U	2.2 U	2.2 U	2.3 U	2.2 U	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	2.3 U	**0.6 J**	2.1 U	2.2 U	2.3 U	2.2 U
Fluoranthene	50*	4.1 U	4 U	**7.9**	**7.2**	4.4 U	2.1 U	2.2 U	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	2.4 U	**3**	**3**	**3**	**2.9**	2.3 U	2.2 U	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	**7.7**	**11**	**0.58 J**	**0.25 J**	2.3 U	2.2 U
Fluorene	50*	4.1 U	4 U	**32**	**41**	4.4 U	**0.54 J**	**1 J**	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	2.4 U	**17**	**16**	**13**	**13**	**2.5**	**3.3**	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	**57**	**45**	**5.7**	**1.7 J**	2.3 U	2.2 U
2-Methylnaphthalene	NE	4.1 U	4 U	**33**	**47**	4.4 U	**0.94 J**	**1.1 J**	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	2.4 U	**57**	**68**	**38**	**39**	2.3 U	2.2 U	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	**140**	**91**	2.1 U	2.2 U	2.3 U	2.2 U
Naphthalene	10*	4.1 U	4 U	**600**	**1000**	4.4 U	**22**	**43**	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	2.4 U	**420**	**510**	**430**	**380**	**27**	**0.97 J**	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	**1200**	**960**	2.1 U	2.2 U	2.3 U	2.2 U
Phenanthrene	50*	4.1 U	4 U	**40**	**46**	4.4 U	2.1 U	**0.75 J**	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	2.4 U	**21**	**21**	**19**	**18**	**1.9 J**	**1.3 J**	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	**54**	**48**	**2.6**	**1.5 J**	2.3 U	2.2 U
Pyrene	50*	4.1 U	4 U	**5.3**	**4.2**	**0.47 J**	2.1 U	2.2 U	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	2.4 U	**2.3**	**2.4**	**2.3**	**2.3**	2.3 U	2.2 U	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	**5.5**	**7.2**	**0.61 J**	**0.28 J**	2.3 U	2.2 U

Validated

Table 10
Analytical Groundwater Results
Hornell Former MGP Site
Hornell, New York

Location Name		MW-1	MW-1	MW-1	MW-1	MW-2	MW-2	MW-2	MW-3	MW-3	MW-3	MW-4	MW-4	MW-4	MW-5	MW-5	MW-5	MW-5	MW-6	MW-6	MW-7	MW-7	MW-8	MW-8	MW-9	MW-9	MW-10	MW-10	MW-11	MW-11	MW-12	MW-12	MW-13	MW-14
Sample Name		MW-1	DUP 02232011	MW1	MW1	MW-2C	MW2C	MW2C	MW-3	MW3	MW3	MW-4	MW4	MW4	MW5	DUP02102012	MW5	DUP10252011	MW6	MW6	MW7	MW7	MW8	MW8	MW9	MW9	MW10	MW10	MW11A	MW11A	MW12	MW12	MW13	MW14
Sample Date		2/23/2011	2/23/2011	10/25/2011	2/10/2012	2/23/2011	10/25/2011	2/9/2012	2/23/2011	10/24/2011	2/10/2012	2/23/2011	10/24/2011	2/9/2012	2/10/2012	2/10/2012	10/25/2011	10/25/2011	10/25/2011	2/9/2012	10/25/2011	2/9/2012	10/25/2011	2/10/2012	10/26/2011	2/9/2012	10/25/2011	2/9/2012	10/26/2011	2/10/2012	10/24/2011	2/10/2012	2/10/2012	2/9/2012
Parent Sample Code			MW-1													MW5		MW5																
Analyte	NY AWQS																																	
Carcinogenic PAHs (ug/L)																																		
Benz[a]anthracene	0.002*	4.1 U	4 U	**1.6 J**	**0.95 J**	4.4 U	2.1 U	2.2 U	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	2.4 U	**0.27 J**	2.3 U	2.2 U	2.2 U	2.3 U	2.2 U	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	**1.7 J**	**2.7**	2.1 U	2.2 U	2.3 U	2.2 U
Benzo[a]pyrene	ND	4.1 U	4 U	**1.2 J**	**0.61 J**	4.4 U	2.1 U	2.2 U	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	2.4 U	2.2 U	2.3 U	2.2 U	2.2 U	2.3 U	2.2 U	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	**0.91 J**	**1.7 J**	2.1 U	2.2 U	2.3 U	2.2 U
Benzo[b]fluoranthene	0.002*	4.1 U	4 U	**1.4 J**	**0.64 J**	4.4 U	2.1 U	2.2 U	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	2.4 U	2.2 U	2.3 U	2.2 U	2.2 U	2.3 U	2.2 U	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	**1.2 J**	**1.5 J**	2.1 U	2.2 U	2.3 U	2.2 U
Benzo[k]fluoranthene	0.002*	4.1 U	4 U	2.1 U	2.4 U	4.4 U	2.1 U	2.2 U	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	2.4 U	2.2 U	2.3 U	2.2 U	2.2 U	2.3 U	2.2 U	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	2.3 U	**0.82 J**	2.1 U	2.2 U	2.3 U	2.2 U
Chrysene	0.002*	4.1 U	4 U	**1.1 J**	**0.59 J**	4.4 U	2.1 U	2.2 U	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	2.4 U	**0.22 J**	2.3 U	2.2 U	2.2 U	2.3 U	2.2 U	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	**1.2 J**	**2.2 J**	2.1 U	2.2 U	2.3 U	2.2 U
Dibenz[a,h]anthracene	NE	4.1 U	4 U	2.1 U	2.4 U	4.4 U	2.1 U	2.2 U	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	2.4 U	2.2 U	2.3 U	2.2 U	2.2 U	2.3 U	2.2 U	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	2.3 U	**0.29 J**	2.1 U	2.2 U	2.3 U	2.2 U
Indeno[1,2,3-cd]pyrene	0.002*	4.1 U	4 U	2.1 U	2.4 U	4.4 U	2.1 U	2.2 U	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	2.4 U	2.2 U	2.3 U	2.2 U	2.2 U	2.3 U	2.2 U	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	2.3 U	**0.53 J**	2.1 U	2.2 U	2.3 U	2.2 U
Total PAHs	NE	ND	ND	**815.7**	**1270.29**	**0.47**	**27.68**	**61.25**	ND	ND	ND	ND	ND	**0.71**	**580.19**	**682.6**	**556.9**	**508.2**	**41.9**	**13.67**	ND	ND	ND	ND	ND	ND	ND	ND	**1625.21**	**1283.54**	**34.54**	**11.31**	ND	ND
Other SVOCs (ug/L)																																		
Acetophenone	NE	NA	NA	11 U	12 U	NA	11 U	11 U	NA	11 U	12 U	NA	11 U	12 U	**2 J**	**2.3 J**	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U	**2.9 J**	11 U	11 U	11 U	11 U
Atrazine	7.5	NA	NA	11 U	12 U	NA	11 U	11 U	NA	11 U	12 U	NA	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U	13 U	11 U	11 U	11 U	11 U
Benzaldehyde	NE	NA	NA	11 UJ	12 U	NA	11 UJ	11 U	NA	11 UJ	12 U	NA	11 UJ	12 U	11 U	11 U	11 UJ	11 UJ	11 UJ	11 U	12 UJ	12 U	11 UJ	11 U	11 U	12 U	11 UJ	10 U	11 U	13 U	11 UJ	11 U	11 U	11 U
Benzyl alcohol	NE	4.1 U	4 U	NA	NA	4.4 U	NA	NA	4.1 U	NA	NA	4.4 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Biphenyl	5	NA	NA	**16**	**25**	NA	**1.3 J**	**3.9 J**	NA	11 U	12 U	NA	11 U	12 U	**13**	**14**	**10**	**11**	**2 J**	**1 J**	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	**27**	**18**	**4.7**	**1.7 J**	11 U	11 U
Bis(chloroisopropyl)ether	5	4.1 U	4 U	2.1 U	2.4 UJ	4.4 U	2.1 U	2.2 UJ	4.1 U	2.1 U	2.4 UJ	4.4 U	2.3 U	2.4 UJ	2.2 UJ	2.3 UJ	2.2 U	2.2 U	2.3 U	2.2 UJ	2.3 U	2.3 UJ	2.1 U	2.3 UJ	2.2 U	2.4 UJ	2.2 U	2.1 UJ	2.3 U	2.6 UJ	2.1 U	2.2 UJ	2.3 UJ	2.2 UJ
Bis(2-chloroethyl)ether	1	4.1 U	4 U	2.1 U	2.4 U	4.4 U	2.1 U	2.2 U	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	2.4 U	2.2 U	2.3 U	2.2 U	2.2 U	2.3 U	2.2 U	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	2.3 U	2.6 U	2.1 U	2.2 U	2.3 U	2.2 U
Bis(2-chloroethoxy)methane	5	4.1 U	4 U	11 U	12 U	4.4 U	11 U	11 U	4.1 U	11 U	12 U	4.4 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U	13 U	11 U	11 U	11 U	11 U
Bis(2-ethylhexyl)phthalate	5	4.1 U	4 U	21 U	24 U	4.4 U	21 U	22 U	4.1 U	21 U	24 U	4.4 U	23 U	24 U	22 U	23 U	22 U	22 U	23 U	22 U	23 U	23 U	21 U	23 U	22 U	24 U	22 U	21 U	23 U	26 U	21 U	22 U	23 U	22 U
4-Bromophenyl phenyl ether	NE	4.1 U	4 U	11 U	12 U	4.4 U	11 U	11 U	4.1 U	11 U	12 U	4.4 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U	13 U	11 U	11 U	11 U	11 U
Butyl benzyl phthalate	50*	4.1 U	4 U	11 U	12 U	4.4 U	11 U	11 U	4.1 U	11 U	12 U	4.4 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U	13 U	11 U	11 U	11 U	11 U
Caprolactam	NE	NA	NA	53 U	61 UJ	NA	53 U	54 UJ	NA	53 U	60 UJ	NA	57 U	59 UJ	56 UJ	57 UJ	54 U	56 U	57 U	56 UJ	58 U	58 UJ	53 U	57 UJ	56 U	60 UJ	55 U	52 UJ	57 U	64 UJ	53 U	56 UJ	57 UJ	56 UJ
Carbazole	NE	4.1 U	4 U	**25**	**37**	4.4 U	2.1 U	**0.6 J**	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	2.4 U	**12**	**12**	**13**	**11**	**7.1**	**10**	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	**63**	**46**	2.1 U	2.2 U	2.3 U	2.2 U
4-Chloro-3-methylphenol	NE	5.1 U	5 U	11 U	12 U	5.6 U	11 U	11 U	5.2 U	11 U	12 U	5.6 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U	13 U	11 U	11 U	11 U	11 U
4-Chloroaniline	5	4.1 U	4 U	11 U	12 U	4.4 U	11 U	11 U	4.1 U	11 U	12 U	4.4 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U	13 U	11 U	11 U	11 U	11 U
2-Chloronaphthalene	10*	4.1 U	4 U	2.1 U	2.4 U	4.4 U	2.1 U	2.2 U	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	2.4 U	2.2 U	2.3 U	2.2 U	2.2 U	2.3 U	2.2 U	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	2.3 U	2.6 U	2.1 U	2.2 U	2.3 U	2.2 U
2-Chlorophenol	NE	4.1 U	4 U	11 U	12 U	4.4 U	11 U	11 U	4.1 U	11 U	12 U	4.4 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U	13 U	11 U	11 U	11 U	11 U
4-Chlorophenyl phenyl ether	NE	4.1 U	4 U	11 U	12 U	4.4 U	11 U	11 U	4.1 U	11 U	12 U	4.4 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U	13 U	11 U	11 U	11 U	11 U
Dibenzofuran	NE	4.1 U	4 U	**34**	**46**	4.4 U	11 U	11 U	4.1 U	11 U	12 U	4.4 U	11 U	12 U	**10 J**	**11**	**8.5**	**8.5**	**2.2 J**	**1.3 J**	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	**51**	**39**	**2.1 J**	11 U	11 U	11 U
1,2-Dichlorobenzene	3	4.1 U	4 U	NA	NA	4.4 U	NA	NA	4.1 U	NA	NA	4.4 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	3	4.1 U	4 U	NA	NA	4.4 U	NA	NA	4.1 U	NA	NA	4.4 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	3	4.1 U	4 U	NA	NA	4.4 U	NA	NA	4.1 U	NA	NA	4.4 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	5	4.1 U	4 U	11 U	12 U	4.4 U	11 U	11 U	4.1 U	11 U	12 U	4.4 UJ	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U	13 U	11 U	11 U	11 U	11 U
2,4-Dichlorophenol	5	4.1 U	4 U	2.1 U	2.4 U	4.4 U	2.1 U	2.2 U	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	2.4 U	2.2 U	2.3 U	2.2 U	2.2 U	2.3 U	2.2 U	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	2.3 U	2.6 U	2.1 U	2.2 U	2.3 U	2.2 U
Diethyl phthalate	50*	4.1 U	4 U	11 U	12 U	4.4 U	11 U	11 U	**1.9 J**	11 U	12 U	4.4 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U	13 U	11 U	11 U	11 U	11 U
Dimethyl phthalate	50*	4.1 U	4 U	11 U	12 U	4.4 U	11 U	11 U	4.1 U	11 U	12 U	4.4 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U	13 U	11 U	11 U	11 U	11 U
2,4-Dimethylphenol	50*	4.1 U	4 U	**33**	**130**	4.4 U	11 U	11 U	4.1 U	11 U	12 U	4.4 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	**1000**	**210**	11 U	11 U	11 U	11 U
Di-n-butyl phthalate	50	4.1 U	4 U	11 U	12 U	4.4 U	11 U	11 U	4.1 U	11 U	12 U	4.4 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U	13 U	11 U	11 U	11 U	11 U
4,6-Dinitro-2-methylphenol	NE	26 U	25 U	53 U	61 U	28 U	53 U	54 U	26 U	53 U	60 U	28 U	57 U	59 U	56 U	57 U	54 U	56 U	57 U	56 U	58 U	58 U	53 U	57 U	56 U	60 U	55 U	52 U	57 U	64 U	53 U	56 U	57 U	56 U
2,4-Dinitrophenol	10*	26 U	25 U	53 U	61 U	28 U	53 U	54 U	26 U	53 U	60 U	28 U	57 U	59 U	56 U	57 U	54 U	56 U	57 U	56 U	58 U	58 U	53 U	57 U	56 U	60 U	55 U	52 U	57 U	64 U	53 U	56 U	57 U	56 U
2,4-Dinitrotoluene	5	4.1 U	4 U	11 U	12 U	4.4 U	11 U	11 U	4.1 U	11 U	12 U	4.4 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U	13 U	11 U	11 U	11 U	11 U
2,6-Dinitrotoluene	5	4.1 U	4 U	11 U	12 U	4.4 U	11 U	11 U	4.1 U	11 U	12 U	4.4 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U	13 U	11 U	11 U	11 U	11 U
Di-n-octyl phthalate	50*	4.1 U	4 U	11 U	12 U	4.4 U	11 U	11 U	4.1 U	11 U	12 U	4.4 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U	13 U	11 U	11 U	11 U	11 U
Hexachlorobenzene	0.04	4.1 U	4 U	2.1 U	2.4 U	4.4 U	2.1 U	2.2 U	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	2.4 U	2.2 U	2.3 U	2.2 U	2.2 U	2.3 U	2.2 U	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	2.3 U	2.6 U	2.1 U	2.2 U	2.3 U	2.2 U
Hexachlorobutadiene	0.5	4.1 U	4 U	2.1 U	2.4 U	4.4 U	2.1 U	2.2 U	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	2.4 U	2.2 U	2.3 U	2.2 U	2.2 U	2.3 U	2.2 U	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	2.3 U	2.6 U	2.1 U	2.2 U	2.3 U	2.2 U
Hexachlorocyclopentadiene	5	4.1 U	4 U	11 UJ	12 U	4.4 U	11 UJ	11 U	4.1 U	11 UJ	12 U	4.4 U	11 UJ	12 U	11 U	11 U	11 U	11 UJ	11 UJ	11 U	12 UJ	12 U	11 UJ	11 U	11 U	12 U	11 UJ	10 U	11 U	13 U	11 UJ	11 U	11 U	11 U
Hexachloroethane	5	4.1 U	4 U	11 U	12 U	4.4 U	11 U	11 U	4.1 U	11 U	12 U	4.4 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U	13 U	11 U	11 U	11 U	11 U
Isophorone	50*	4.1 U	4 U	11 U	12 U	4.4 U	11 U	11 U	4.1 U	11 U	12 U	4.4 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U	13 U	11 U	11 U	11 U	11 U
2-Methylphenol (o-Cresol)	1	4.1 U	4 U	**5.3**	**8.5 J**	4.4 U	11 U	11 UJ	4.1 U	11 U	12 UJ	4.4 U	11 U	12 UJ	11 UJ	11 UJ	11 U	11 U	11 U	11 UJ	12 U	12 UJ	11 U	11 UJ	11 U	12 UJ	11 U	10 UJ	**820**	**270 J**	11 U	11 UJ	11 UJ	11 UJ
4-Methylphenol (p-Cresol)	1	4.1 U	4 U	**2.4**	**8.5 J**	4.4 U	11 U	11 UJ	4.1 U	11 U	12 UJ	4.4 U	11 U	12 UJ	11 UJ	11 UJ	11 U	11 U	11 U	11 UJ	12 U	12 UJ	11 U	11 UJ	11 U	12 UJ	11 U	10 UJ	**1600**	**260 J**	11 U	11 UJ	11 UJ	11 UJ
2-Nitroaniline	5	4.1 U	4 U	53 U	61 U	4.4 U	53 U	54 U	4.1 U	53 U	60 U	4.4 U	57 U	59 U	56 U	57 U	54 U	56 U	57 U	56 U	58 U	58 U	53 U	57 U	56 U	60 U	55 U	52 U	57 U	64 U	53 U	56 U	57 U	56 U
3-Nitroaniline	5	4.1 U	4 U	53 U	61 U	4.4 U	53 U	54 U	4.1 U	53 U	60 U	4.4 U	57 U	59 U	56 U	57 U	54 U	56 U	57 U	56 U	58 U	58 U	53 U	57 U	56 U	60 U	55 U	52 U	57 U	64 U	53 U	56 U	57 U	56 U
4-Nitroaniline	5	4.1 U	4 U	53 U	**2.2 J**	4.4 U	53 U	54 U	4.1 U	53 U	60 U	4.4 U	57 U	59 U	56 U	57 U	54 U	56 U	57 U	56 U	58 U	58 U	53 U	57 U	56 U	60 U	55 U	52 U	57 U	64 U	53 U	56 U	57 U	56 U
Nitrobenzene	0.4	4.1 U	4 U	21 U	24 U	4.4 U	21 U	22 U	4.1 U	21 U	24 U	4.4 U	23 U	24 U	22 U	23 U	22 U	22 U	23 U	22 U	23 U	23 U	21 U	23 U	22 U	24 U	22 U	21 U	23 U	26 U	21 U	22 U	23 U	22 U
2-Nitrophenol	NE	4.1 U	4 U	11 U	12 U	4.4 U	11 U	11 U	4.1 U	11 U	12 U	4.4 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U	13 U	11 U	11 U	11 U	11 U
4-Nitrophenol	NE	10 U	10 U	53 U	61 U	11 U	53 U	54 U	10 U	53 U	60 U	11 U	57 U	59 U	56 U	57 U	54 U	56 U	57 U	56 U	58 U	58 U	53 U	57 U	56 U	60 U	55 U	52 U	57 U	64 U	53 U	56 U	57 U	56 U
N-Nitrosodi-n-propylamine	NE	4.1 U	4 U	2.1 U	2.4 UJ	4.4 U	2.1 U	2.2 UJ	4.1 U	2.1 U	2.4 UJ	4.4 U	2.3 U	2.4 UJ	2.2 UJ	2.3 UJ	2.2 U	2.2 U	2.3 U	2.2 UJ	2.3 U	2.3 UJ	2.1 U	2.3 UJ	2.2 U	2.4 UJ	2.2 U	2.1 UJ	2.3 U	2.6 UJ	2.1 U	2.2 UJ	2.3 UJ	2.2 UJ
N-Nitrosodiphenylamine	50*	4.1 U	4 U	11 U	12 U	4.4 U	11 U	11 U	4.1 U	11 U	12 U	4.4 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U	13 U	11 U	11 U	11 U	11 U
Pentachlorophenol	1	26 U	25 U	11 U	12 U	28 U	11 U	11 U	26 U	11 U	12 U	28 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U	13 U	11 U	11 U	11 U	11 U
Phenol	1	4.1 U	4 U	**2.4**	**8.7**	4.4 U	2.1 U	2.2 U	4.1 U	2.1 U	2.4 U	4.4 U	2.3 U	2.4 U	2.2 U	2.3 U	2.2 U	2.2 U	2.3 U	2.2 U	2.3 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	**650**	**74**	2.1 U	2.2 U	2.3 U	2.2 U
1,2,4-Trichlorobenzene	5	4.1 U	4 U	NA	NA	4.4 U	NA	NA	4.1 U	NA	NA	4.4 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	NE	10 U	10 U	11 U	12 U	11 U	11 U	11 U	10 U	11 U	12 U	11 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U	13 U	11 U	11 U	11 U	11 U
2,4,6-Trichlorophenol	NE	4.1 U	4 U	11 U	12 U	4.4 U	11 U	11 U	4.1 U	11 U	12 U	4.4 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U	13 U	11 U	11 U	11 U	11 U

Table 10
Analytical Groundwater Results
Hornell Former MGP Site
Hornell, New York

Location Name		MW-1	MW-1	MW-1	MW-1	MW-2	MW-2	MW-2	MW-3	MW-3	MW-3	MW-4	MW-4	MW-4	MW-5	MW-5	MW-5	MW-5	MW-6	MW-6	MW-7	MW-7	MW-8	MW-8	MW-9	MW-9	MW-10	MW-10	MW-11	MW-11	MW-12	MW-12	MW-13	MW-14
Sample Name		MW-1	DUP 02232011	MW1	MW1	MW-2C	MW2C	MW2C	MW-3	MW3	MW3	MW-4	MW4	MW4	MW5	DUP02102012	DUP10252011	MW5	MW6	MW6	MW7	MW7	MW8	MW8	MW9	MW9	MW10	MW10	MW11A	MW11A	MW12	MW12	MW13	MW14
Sample Date		2/23/2011	2/23/2011	10/25/2011	2/10/2012	2/23/2011	10/25/2011	2/9/2012	2/23/2011	10/24/2011	2/10/2012	2/23/2011	10/24/2011	2/9/2012	2/10/2012	2/10/2012	10/25/2011	10/25/2011	10/25/2011	2/9/2012	10/25/2011	2/9/2012	10/25/2011	2/10/2012	10/26/2011	2/9/2012	10/25/2011	2/9/2012	10/26/2011	2/10/2012	10/24/2011	2/10/2012	2/10/2012	2/9/2012
Parent Sample Code			MW-1													MW5		MW5																
Analyte	NY AWQS																																	
Total Metals (ug/L)																																		
Aluminum	NE	**160 J**	**180 J**	**86 J**	200 U	**2500 J**	**1200 J**	200 U	**4500 J**	200 U	200 U	**940 J**	200 U	200 U	200 U	200 U	**220**	**240 J**	**640 J**	**890**	**660 J**	200 U	**1300 J**	**470**	**270 J**	**320**	**800 J**	**670**	**360 J**	**710**	**9200 J**	**610**	200 U	**290**
Antimony	3	15 U	15 U	10 U	10 U	15 U	10 U	**1.7 J**	15 U	10 U	10 U	15 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**1.3 J**	10 U	**1.5 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Arsenic	25	15 U	15 U	10 U	**3 J**	15 U	**3 J**	10 U	**5.2 J**	10 U	10 U	15 U	10 U	10 U	10 U	10 U	10 U	10 U	**3 J**	**5.3 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**3.7 J**	**4.7 J**	**18**	**3.3 J**	10 U	10 U
Barium	1000	**190**	**190**	**200**	**230**	**240**	**150 J**	**110 J**	**230**	**180 J**	**170 J**	**220**	**250**	**200**	**200**	**200**	**210**	**200**	**160 J**	**160 J**	**110 J**	**110 J**	**130 J**	**140 J**	**120 J**	**140 J**	**120 J**	**120 J**	**140 J**	**140 J**	**260**	**150 J**	**120 J**	**150 J**
Beryllium	3*	5 U	5 U	4 U	4 U	5 U	4 U	4 U	5 U	4 U	4 U	5 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Cadmium	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	**0.14 J**	5 U	5 U	5 U	5 U	5 U	5 U	5 U	**0.19 J**	5 U	5 U	5 U	**0.41 J**	5 U	5 U	5 U
Calcium	NE	**114000**	**113000**	**93000**	**97000**	**123000**	**130000**	**110000**	**134000**	**110000**	**110000**	**133000**	**120000**	**100000**	**180000**	**180000**	**170000**	**170000**	**90000**	**88000**	**170000**	**130000**	**200000**	**190000**	**81000**	**78000**	**93000**	**90000**	**96000**	**100000**	**200000**	**160000**	**89000**	**110000**
Chromium	50	5 U	5 U	5 U	5 U	**2.8 J**	**2 J**	5 U	**7.3**	5 U	5 U	**0.52 J**	5 U	5 U	5 U	5 U	5 U	5 U	**0.85 J**	5 U	**0.9 J**	5 U	**2.7 J**	5 U	**0.81 J**	5 U	**1.3 J**	5 U	**1 J**	5 U	**18**	5 U	5 U	5 U
Cobalt	NE	5 U	5 U	50 U	50 U	**2.6 J**	**0.77 J**	50 U	**3.8 J**	50 U	50 U	**1.5 J**	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	**1.5 J**	50 U	**1.7 J**	50 U	50 U	50 U	50 U	50 U	50 U	**12 J**	50 U	50 U	50 U
Copper	200	**1.6 J**	10 U	25 U	25 U	**13**	**6.7 J**	25 U	**18**	25 U	25 U	**4.6 J**	25 U	25 U	25 U	25 U	25 U	25 U	**2.7 J**	25 U	**3.8 J**	25 U	**7.7 J**	**4.2 J**	25 U	25 U	**3.1 J**	25 U	25 U	25 U	**43**	25 U	25 U	25 U
Iron	300	**330 J**	**340 J**	**920**	**1700**	**6000 J**	**2600**	**390**	**9700 J**	100 U	100 U	**2500 J**	100 U	100 U	**5600**	**5800**	**4600**	**4600**	**2200**	**3300**	**1700**	**440**	**3500**	**1900**	**390**	**500**	**1600**	**1200**	**680**	**2400**	**33000**	**5000**	**140**	**510**
Lead	25	15 U	15 U	3 U	3 U	15 U	3 U	**1.9 J**	15 U	3 U	3 U	15 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	**8.2**	3 U	**2.1 J**	**1.4 J**	3 U	**1.5 J**	3 U	3 U	**2.7 J**	3 U	**1.6 J**	**28**	**1.7 J**	3 U	**1.8 J**
Magnesium	35000*	**17500**	**17400**	**17000**	**17000**	**28000**	**46000**	**34000**	**24100**	**16000**	**17000**	**32400**	**25000**	**22000**	**59000**	**60000**	**56000**	**55000**	**17000**	**17000**	**33000**	**23000**	**21000**	**19000**	**18000**	**16000**	**17000**	**17000**	**20000**	**18000**	**37000**	**21000**	**17000**	**21000**
Manganese	300	**28**	**30**	**570**	**800**	**390**	**340**	**260**	**470**	**4.5 J**	**7.3 J**	**390**	**26**	**29**	**710**	**730**	**720**	**710**	**1700**	**1000**	**4800**	**1100**	**400**	**61**	**310**	**99**	**700**	**820**	**2200**	**950**	**8600**	**4300**	**300**	**620**
Mercury	0.7	0.4 U	0.4 U	0.2 U	0.2 U	0.4 U	0.2 U	0.2 U	0.4 U	0.2 U	0.2 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.053 J**	0.2 U	0.2 U	0.2 U
Nickel	100	5 U	5 U	40 U	40 U	**6.2**	**3.3 J**	40 U	**10**	40 U	40 U	**3.9 J**	40 U	40 U	40 U	40 U	40 U	40 U	**1.9 J**	**2.6 J**	**2.9 J**	**2.5 J**	**4.7 J**	**1.8 J**	40 U	40 U	**2.1 J**	**2.2 J**	**3.6 J**	**3.5 J**	**27 J**	**6.4 J**	40 U	**1.8 J**
Potassium	NE	**4200 J**	**4300 J**	**4200 J**	**4400 J**	**6200 J**	**8300**	**6100**	**5100 J**	**4400 J**	**3800 J**	**5700 J**	**6700**	**5500**	**11000**	**11000**	**12000**	**12000**	**4700 J**	**4200 J**	**12000**	**9600**	**10000**	**8200**	**4600 J**	**3600 J**	**4900 J**	**3800 J**	**8000**	**4700 J**	**9000**	**5600**	**4200 J**	**7800**
Selenium	10	38 U	38 U	5 U	5 U	38 U	**8.5**	**4.8 J**	38 U	5 U	5 U	38 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	**5.7**	**7.3**	**9**	**10**	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	**4.6 J**	**3.8 J**
Silver	50	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Sodium	20000	**62100**	**59200**	**110000**	**87000**	**93400**	**83000**	**96000**	**57300**	**66000**	**68000**	**100000**	**130000**	**110000**	**33000**	**34000**	**53000**	**51000**	**130000**	**110000**	**36000**	**22000**	**14000**	**14000**	**68000**	**60000**	**90000**	**76000**	**87000**	**67000**	**43000**	**51000**	**110000**	**120000**
Thallium	0.5*	15 U	15 U	10 U	10 U	15 U	10 U	10 U	15 U	10 U	10 U	15 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vanadium	NE	5 U	5 U	50 U	50 U	**4.6 J**	**3.9 J**	**2.1 J**	**7.1**	50 U	50 U	**2.3 J**	50 U	50 U	**4.4 J**	**4.3 J**	**3.1 J**	**2.9 J**	50 U	**3.4 J**	**2.3 J**	**2.4 J**	50 U	**3 J**	50 U	50 U	**2.9 J**	50 U	**2.7 J**	**3.4 J**	**14 J**	**2.3 J**	50 U	**2.8 J**
Zinc	2000*	25 U	25 U	**2.7 J**	20 U	**28**	**15 J**	20 U	**45**	**3.4 J**	20 U	**10 J**	**4.9 J**	20 U	20 U	20 U	**8.6 J**	**10 J**	**58**	20 U	**10 J**	20 U	**15 J**	20 U	20 U	20 U	**9.5 J**	20 U	20 U	20 U	**99**	20 U	20 U	20 U
Cyanides (ug/L)																																		
Free Cyanide	NE	5 U	**1.1 J**	**1.7 J**	**2.1 J**	**1.5 J**	**2.7 J**	**2.9 J**	5 U	5 U	2 UJ	**1.4 J**	**2.3 J**	2 UJ	**2.9 J**	2 UJ	**2.5 J**	**1.6 J**	**1.1 J**	2 U	**2.9 J**	**15 J**	**6.6**	**6.1 J**	**1.3 J**	2 UJ	**1.6 J**	2 UJ	**1.7 J**	**2.2 J**	**2.1 J**	2 UJ	2 UJ	**4.3 J**
Total Cyanide (ug/L)																																		
Total Cyanide	200	10 U	10 U	**37**	**87**	**110**	**24**	**50**	10 U	10 U	10 U	**94**	**34**	**59**	**120**	**120**	**44**	**42**	**10**	**38**	**96**	**330**	**1200**	**3300**	**2.7 J**	10 U	10 U	10 U	**80**	**96**	**53**	**110**	**89**	**130**

Table 10
Analytical Groundwater Results
Hornell Former MGP Site
Hornell, New York

Notes:

Analytes in blue are not detected in any sample

ug/L - micrograms per liter or parts per billion (ppb)
BTEX - benzene, toluene, ethylbenzene, and xylenes
VOCs - volatile organic compounds
PAHs - polycyclic aromatic hydrocarbons
SVOCs - semivolatile organic compounds
Total BTEX, Total VOCs, Total PAHs, and Total SVOCs are calculated using detects only.

NYS AWQS - New York State Ambient Water Quality Standards and Guidance Values for GA groundwater
* indicates the value is a guidance value and not a standard

NE - not established
NA - not analyzed
ND - not detected; total concentration is listed as ND because no compounds were detected in the group

Bolding indicates a detected concentration
Gray shading indicates that the detected result value exceeds NYS AWQS

Validation Qualifiers:

J - estimated value
U - indicates not detected to the reporting limit
UJ - not detected at or above the reporting limit shown and the reporting limit is estimated