TABLE 3
Groundwater Profiling Boreholes and Monitoring Wells Specifications
OU1 New Cassel/Hicksville Ground Water Contamination Site
Nassau County, NY
September 2015

Location	No. of Wells Per Location	Nearby Existing Wells	Approx. Number of Groundwater Profile Samples	Profile Interval (ft-bgs)	Approx. Total Depth of Borehole (ft-bgs)	Approximate Targeted Screen Zones
PDI-1	1	None	11	40-260	260	1S
PDI-2	3	None	13	40-300	300	2S/1I
PDI-3	1	TMW-9	11	40-260	260	1S
PDI-4	1	TMW-2	13	40-400	400	1D
PDI-5	3	EX-2	20	40-440	440	1S/2D
PDI-6	1	TMW-3D	21	40-460	460	1D
PDI-7	1	MW-13, TMW-1	11	40-260	260	1I
PDI-8	3	None	15	40-340	340	1S/1I/1D
PDI-9	1	MW-7, MW-8	11	40-260	260	1I
PDI-10	1	None	12	40-280	280	1I
PDI-11	3	MW-5, MW-6	12	40-280	280	1S/1I/1D
PDI-12	1	MW-5, MW-6	12	40-280	280	1I
PDI-13	1	None	12	40-280	280	1I
PDI-14	3	MW-1 to MW-4, MW-10	12	40-280	280	1S/1I/1D
PDI-15	1	TMW-5	15	40-340	340	1I
PDI-16	3	None	12	40-280	280	1S/1I/1D
PDI-17	1	None	12	40-280	280	1I
PDI-18	1	None	8	40-200	200	1I
PDI-19	3	None	12	40-280	280	1S/1I/1D
PDI-20	1	B-9	8	40-200	200	1I
PDI-21	1	EX-1	11	40-260	260	1I
PDI-22	1	EX-1	14	40-320	320	1D
PDI-23	1	EX-1	11	40-260	260	1I
PDI-24	1	MW-17	13	40-300	300	1D
PDI-25	3	MW-17	15	40-340	340	3D
PDI-26	1	MW-17	13	40-300	300	1D
PDI-27	3	None	None	None	300	1S/1I/1D

ft-bgs = feet below ground surface
Water table estimated to be at a depth of 40 feet. Profiling should extend from the water table to the total depth indicated, unless screening results indicate deeper samples are necessary.
Targeted screen zones:
S = shallow well screened < 175 ft-bgs
I = intermediate well screened between 175 and 250 ft-bgs
D = deep well screened >250 ft-bgs

Specifications
nation Site

Justification
Design of IWVS wells along northern transect of Western Plume
Design of groundwater extraction well along northern transect of Western Plume
Design of IWVS wells along northern transect of Western Plume
Design of IWVS wells along central transect of Western Plume
Design of IWVS wells along central transect of Western Plume
Design of IWVS wells along central transect of Western Plume
Design of IWVS wells along southern transect of Western Plume
Design of groundwater extraction well along southern transect of Western Plume
Design of IWVS wells along southern transect of Western Plume
Design of IWVS wells along northern transect of Central Plume
Design of IWVS wells along northern transect of Central Plume
Design of IWVS wells along northern transect of Central Plume
Design of IWVS wells along southern transect of Central Plume
Design of IWVS wells along central transects of Central Plume
Design of IWVS wells along central transects of Central Plume
Design of IWVS wells along southern transect of Central Plume
Design of IWVS wells along southern transect of Central Plume
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Design of groundwater extraction well along northern transect of Eastern Plume
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Confirm design of groundwater extraction well along central transect of Eastern Plume
Confirm design of groundwater extraction well along central transect of Eastern Plume
Confirm design of groundwater extraction well along central transect of Eastern Plume
Design of groundwater extraction well along southern transect of Eastern Plume
Design of groundwater extraction well along southern transect of Eastern Plume
Design of groundwater extraction well along southern transect of Eastern Plume
Groundwater flow direction mapping southwest of Basin 51

TABLE 4
PDI Deliverables Schedule
OU1 New Cassel/Hicksville Ground Water Contamination Site
Nassau County, NY
September 2015

Description of Deliverable/Task/Supporting Deliverable
Designate Proposed Supervising Contractor
QAPP and HASP for PDI Directive 1
Technical Memorandum for PDI Directive 1, Round 1
Technical Memorandum for PDI Directive 1, Round 2
QAPP and HASP for PDI Directive 2
QAPP and HASP for PDI Directive 3
Technical Memorandum for PDI Directive 3, Option 2
Justification for Alternate Extraction Well Constuction and Location for PDI Directive 3, Option 3
Technical Memorandum for PDI Directive 3 Aquifer Testing
Effluent Discharge Evaluation Option 1, Alternate Approach for Characterizing Infiltration Capacity of Basin 51, PDI Directive 3
Technical Memorandum for Effluent Discharge Option1, PDI Directive 3
Effluent Discharge Evaluation Option 2, Approach for Characterizing Infiltration Capacity Outside of Basin 51, PDI Directive 3
Technical Memorandum for Effluent Discharge Option 2, PDI Directive 3
Effluent Discharge Evaluation Option 3, Rationale for Evaluating Discharge to Sanitary Sewer
Technical Memorandum for Effluent Discharge Option 3, PDI Directive 3
Effluent Discharge Evalution Option 4: Rationale for Alternative Discharge Approach
QAPP and HASP for PDI Directive 4
Technical Memorandum for PDI Directive 4
QAPP and HASP for PDI Directive 5
Technical Memorandum for PDI Directive 5

TABLE 4
PDI Deliverables Schedule
New Cassel/Hicksville Ground Water Contamination Site
Nassau County, NY
September 2015

Deadline
10 days after the effective date
45 days after EPA's approval of Supervising Contractor
45 days after receipt of final analytical results from first round of groundwater sampling under PDI Directive 1
45 days after receipt of final analytical results from second round of groundwater sampling under PDI Directive 1
90 days after receipt of final analytical results from first round of groundwater sampling under PDI Directive 1
90 days after completion of field activities for PDI Directive 2
30 days after submittal of the QAPP for PDI Directive 3
To be presented in the QAPP for PDI Directive 3
60 days after completion of the aquifer testing
To be presented in the QAPP for PDI Directive 3
30 days after receipt of final analytical results
30 days submittial of Technical Memorandum for Effluent Discharge Option 1, PDI Directive 3
60 days after completion of infiltration or modelling for Effluent Discharge Option 2, PDI Directive 3
30 days after submittal of Technical Memorandum for Effluent Discharge Option 2, PDI Directive 3
30 days after submittal of Rationale for Evaluating Discharge to Sanitary Sewer
To be presented in the QAPP for PDI Directive 3
30 days after submittal of Technical Memorandum for PDI Directive 3
60 days after completion of the pilot testing activities
30 days after submittal of the Technical Memorandum for PDI Directive 4
60 days after receipt of the final analytical results from the post-injection performance monitoring activities

TABLE 1
Well Construction Details
OU1 New Cassel/Hicksville Ground Water Contamination Site
Nassau County, NY
September 2015

Well Number	Northing (feet)	Easting (feet)	TOC or GS Elev. (ft-amsl)	Screen/Sample Interval		Status	Comments
				Top (ft-bgs)	Bottom (ft-bgs)		
Permanent Monitoring and Extraction Wells							
EW-1B	214139.02	1106606.83	113.84	154	164	Active	
EW-1C	214133.38	1106591.29	113.99	506	516	Active	
EW-2B	214176.02	1105922.15	114.88	132	142	Active	
EW-2C	214169.96	1105910.27	114.80	504	514	Active	
EX-1	213894.38	1107322.85	107.71	185	205	Active	Groundwater extraction well.
EX-2	212587.22	1103835.27	105.47	265	285	Active	Groundwater extraction well.
FSMW-13A	214665.46	1107432.23	117.74	69	79	Active	
FSMW-13B	214659.28	1107433.80	117.77	119	129	Active	
FSMW-13C	214651.61	1107436.15	117.66	239	249	Active	
FSMW-14A	214580.13	1107262.83	116.99	119	129	Active	
FSMW-14B	214582.56	1107256.69	117.18	159	169	Active	
FSMW-14C	214584.35	1107249.01	116.97	239	249	Active	
MW-1	213450.19	1105300.86	113.67	90	110	Active	
MW-2	213453.60	1105304.62	113.69	110	130	Active	
MW-3	213456.32	1105307.42	113.67	130	150	Active	
MW-4	213460.96	1105312.86	113.76	180	200	Active	
MW-5	213806.40	1105650.97	115.64	90	110	Active	
MW-6	213802.99	1105653.58	115.70	110	130	Active	
MW-7	211946.79	1104331.50	105.92	90	110	Active	
MW-8	211947.25	1104337.36	105.85	120	140	Active	
MW-9	212954.47	1105703.40	109.94	310	315	Active	
MW-10	213449.23	1105233.35	113.05	275	285	Active	
MW-11S	212056.64	1104018.49	106.96	215	225	Active	
MW-11D	212056.64	1104018.49	106.96	275	285	Active	
MW-12	212461.12	1103100.39	104.70	215	225	Active	
MW-13	211667.02	1103498.73	105.26	200	210	Active	
MW-14	214120.66	1107347.51	111.85	185	205	Active	
MW-15	213749.98	1106780.90	111.03	185	205	Active	

TABLE 1
Well Construction Details
OU1 New Cassel/Hicksville Ground Water Contamination Site
Nassau County, NY
September 2015

Well Number	Northing (feet)	Easting (feet)	TOC or GS Elev. (ft-amsl)	Screen/Sample Interval		Status	Comments
				Top (ft-bgs)	Bottom (ft-bgs)		
MW-16S	213313.45	1106226.97	109.04	215	225	Active	
MW-16D	213313.45	1106226.97	109.07	275	285	Active	
MW-17S	213282.84	1107304.77	113.90	215	225	Active	
MW-17D	213282.84	1107304.77	113.87	275	285	Active	
Temporary Monitoring Wells							
GWHP-1	214657.78	1107129.44	NA	60	150	Inactive	Sampled at generally 10-foot intervals from HydroPunch boring.
GWHP-2	211592.49	1106085.25	NA	58	150	Inactive	Sampled at generally 10-foot intervals from HydroPunch boring.
GWHP-3	214136.05	1104185.50	NA	58	150	Inactive	Sampled at generally 10-foot intervals from HydroPunch boring.
GWHP-4	216555.29	1106236.13	NA	58	150	Inactive	Sampled at generally 10-foot intervals from HydroPunch boring.
TMW-1	212023.94	1103888.96	NA	72	285	Inactive	Sampled at generally 10- to 20-foot intervals from temporary monitor wells.
TMW-2	212826.11	1103638.25	NA	65	285	Inactive	Sampled at generally 20-foot intervals from temporary monitor wells.
TMW-3D	212720.39	1104659.48	NA	52	502	Inactive	Sampled at generally 20-foot intervals from temporary monitor wells.
TMW-4	212458.05	1105294.74	NA	65	285	Inactive	Sampled at 20-foot intervals from temporary monitor wells.
TMW-5	213463.41	1105545.03	NA	65	285	Inactive	Sampled at 20-foot intervals from temporary monitor wells.
TMW-6	214301.81	1106269.29	NA	63	283	Inactive	Sampled at 20-foot intervals from temporary monitor wells.
TMW-7	214207.61	1107381.31	NA	65	285	Inactive	Sampled at 20-foot intervals from temporary monitor wells.
TMW-8D	213297.60	1106240.24	NA	52	502	Inactive	Sampled at generally 20-foot intervals from temporary monitor wells.
TMW-9	213417.25	1104512.43	NA	60	280	Inactive	Sampled at 20-foot intervals from temporary monitor wells.

Notes
TOC = top of casing; GS = ground surface; NA = not available
ft-amsl = feet above mean sea level
ft-bgs = feet below ground surface
Vertical datum = NAVD 88
Coordinate system = NAD83 New York State Plane, Long Island Zone

TABLE 2
Target Compound List for Volatile Organic Compounds
OU1 New Cassel/Hicksville Ground Water Contamination Site
Nassau County, NY
September 2015

Analyte	CAS Number	NYSDEC Water Quality Standard (µ/L)	Federal Maximum Contaminant Level (µ/L)	ROD Cleanup Level (µ/L)
Dichlorodifluoromethane	75-71-8	5	NS	NS
Chloromethane	74-87-3	NS	NS	NS
Vinyl Chloride	75-01-4	2	2	2
Bromomethane	74-83-9	5	NS	NS
Chloroethane	75-00-3	5	NS	NS
Trichlorofluoromethane	75-69-4	5	NS	NS
1,1-Dichloroethene	75-35-4	5	7	5
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	5	NS	NS
Acetone	67-64-1	NS	NS	NS
Carbon Disulfide	75-15-0	60	NS	NS
Methyl Acetate	79-20-9	NS	NS	NS
Methylene Chloride	75-09-2	5	5	NS
trans-1,2-Dichloroethene	156-60-5	5	100	NS
Methyl tert-Butyl Ether	1634-04-4	NS	NS	NS
1,1-Dichloroethane	75-34-3	5	NS	5
cis-1,2-Dichloroethene	156-59-2	5	70	5
2-Butanone (MEK)	78-93-3	NS	NS	NS
Chloroform	67-66-3	7	80	7
1,1,1-Trichloroethane	71-55-6	5	200	NS
Cyclohexane	110-82-7	NS	NS	NS
Carbon Tetrachloride	56-23-5	5	5	NS
Benzene	71-43-2	1	5	NS
1,2-Dichloroethane	107-06-2	0.6	5	NS
Trichloroethene	79-01-6	5	5	5
Methylcyclohexane	108-87-2	NS	NS	NS
Bromodichloromethane	75-27-4	5	80	NS
1,2-Dichloropropane	78-87-5	1	5	NS
Toluene	108-88-3	5	1000	NS
trans-1,3-Dichloropropene	10061-02-6	0.4	NS	NS
cis-1,3-Dichloropropene	10061-01-5	NS	NS	NS
4-Methyl-2-Pentanone	108-10-1	NS	NS	NS
1,1,2-Trichloroethane	79-00-5	1	5	1
Tetrachloroethene	127-18-4	5	5	5
2-Hexanone	591-78-6	NS	NS	NS
Dibromochloromethane	124-48-1	NS	80	NS
1,2-Dibromoethane	106-93-4	NS	500	NS
Chlorobenzene	108-90-7	5	100	NS
Ethylbenzene	100-41-4	5	700	NS
Xylenes (total)	1330-20-7	5	NS	NS
Styrene	100-42-5	5	100	NS
Bromoform	75-25-2	NS	80	NS
Isopropylbenzene	98-82-8	5	NS	NS
1,1,2,2-Tetrachloroethane	79-34-5	5	NS	5
1,3-Dichlorobenzene	541-73-1	5	NS	NS
1,4-Dichlorobenzene	106-46-7	5	75	NS
1,2-Dichlorobenzene	95-50-1	5	600	NS
1,2-Dibromo-3-chloropropane	96-12-8	0.04	20	NS
1,2,4-Trichlorobenzene	120-82-1	5	70	NS
1,4-Dioxane	123-91-1	NS	NS	NS

NYSDEC = New York State Department of Environmental Conservation
ROD = Record of Decision
µ/L = micrograms per liter
NS = no standard