



April 23, 2019

Mr. Bryan Kowalewski
Assistant Engineer
New York State Department of Environmental Conservation (NYSDEC) Region 9
270 Michigan Avenue
Buffalo, New York 14203

Re: Interim Remedial Measure (IRM) Post-Excavation Sampling Plan Addendum
1155 Main Street, Buffalo, New York
Brownfield Cleanup Program Site C915341

Dear Mr. Kowalewski:

Benchmark Environmental Engineering & Science, PLLC (Benchmark), in association with TurnKey Environmental Restoration, LLC (Benchmark-TurnKey) have prepared this addendum letter to request a deviation in the IRM post-excavation sampling requirements outlined in the NYSDEC-approved Remedial Investigation/Interim Remedial Measures/Alternatives Analysis Work Plan¹ (Work Plan).

Section 4.4 of the Work Plan indicates that post-excavation samples will be collected a minimum of one (1) sample per 30 linear feet of sidewall and one (1) sample for each 900 square feet of excavation bottom in accordance with DER-10. Soil samples collected during the RI that meet the USCOs will be used to supplement the post-excavation IRM sample requirements. Samples from the IRM excavation will be analyzed for Target Compound List (TCL) semi-volatile organic compounds (SVOCs) and Target Analyte List (TAL) metals (unless additional contaminant classes are identified during the RI, and 1 per 5 samples (20%) will be completed for the full list of Part 375 compounds), in accordance with USEPA Methodology with an equivalent Category B deliverables package to facilitate data evaluation by a third-party validation expert.

During the RI, 30 test pits (TPs) were completed across the Site using a 50-foot by 50-foot grid system. The locations of the test pits are shown on attached Figure 1. Soil samples were collected from both fill material (5 samples) and underlying native soils. A total of 30 native soil samples (1 per test pit) were collected. Each of the native soil samples was analyzed for TCL SVOCs and TAL metals. Five (5) of the native soil samples were also analyzed for TCL volatile organic compounds (VOCs) via Method 8260, polychlorinated biphenyls (PCBs), pesticides, herbicides, 1,4-dioxane, and per- and polyfluoroalkyl substances (PFAS).

A summary of the soil/fill sample results from the RI are attached. The results of the RI soil sampling indicated that of the 30 native samples collected across the Site, four (4) locations were identified that had native soil USCOs exceedances. These locations are as follows as shown on attached Figure 2 in green:

¹ "Remedial Investigation/Interim Remedial Measure/Alternative Analysis Work Plan, 1155 Main Street Site, Buffalo, New York". Prepared for Main & Dodge LLC. Prepared by Benchmark Environmental Engineering and Science, PLLC. January 2019.

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- TP-28 – Lead was detected at 105 mg/kg in a native soil sample from 4 to 5 feet below ground surface (fbgs).
- TP-29 – Zinc was detected at 132 mg/kg in a native soil sample from 6 to 7 fbgs.
- TP-38 – 4,4'-DDT (pesticide) was detected in a native soil sample from 6 to 7 fbgs.
- TP-45 – Mercury was detected at 0.636 mg/kg in a native soil sample from 5 to 6 fbgs.

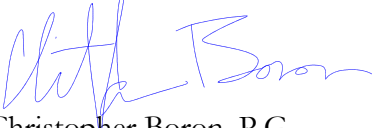
The IRM activities propose to excavate and remove the fill material across the Site to the underlying native soil. The fill material will be taken off-site to a permitted landfill facility.

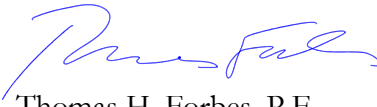
We are requesting to use the existing RI sample results of the native soil samples as the post-excavation bottom samples, based on the 50 ft by 50 ft gridded sampling approach used, with the exception of the four (4) locations, listed above and shown on Figure 2, that has USCO exceedances. At these four (4) locations, additional post-excavation native soil samples will be collected from within that respective grid after the fill material and native soil containing the exceedance are excavated. The post-excavation sampling analysis will be based on the exceedance present in the native sample in that grid. Therefore, the post-excavation samples in the vicinity of TP-28, TP-29, and TP-45 will be analyzed for TAL metals and the TP-38 will be analyzed for pesticides.

We are also requesting a reduction in the number of sidewall (property boundary) samples that will be collected. We are proposing a frequency of 1 sample every 200 feet, with a minimum of 3 samples per sidewall (north, south east and west property boundaries). Each sample will be analyzed for TCL SVOCs and TAL metals and one (1) sample per sidewall will also be tested for TCL VOCs, PCBs, pesticides and herbicides.

We appreciate the Department's consideration in reducing the post-excavation sampling requirements. Please contact us if you have any questions or require additional information.

Sincerely,
Benchmark Environmental Engineering & Science, PLLC


Christopher Boron, P.G.
Sr. Project Manager


Thomas H. Forbes, P.E.
Principal Engineer

cc: Chad Staniszewski, P.E. (NYSDEC Region 9)
J Dougherty, Esq. (NYSDEC Region 9)
C Vooris (NYSDOH)
Dr. Fadi Dagher (Main & Dodge LLC)
S Ricca, Esq. (Bond, Schoeneck & King)



TABLE



DRAFT
TABLE

SUMMARY OF REMEDIAL INVESTIGATION SOIL-FILL SAMPLE ANALYTICAL RESULTS
REMEDIAL INVESTIGATION / INTERIM REMEDIAL MEASURE/ ALTERNATIVE ANALYSIS REPORT
1155 MAIN STREET SITE (C915341)
BUFFALO, NEW YORK



PARAMETER ¹	Unrestricted Use SCO's ²	Restricted Residential Use SCO's ³	Commercial Use SCO's ³	Industrial Use SCO's ³	TP-19	TP-20	TP-21	TP-21	TP-22	TP-23	TP-23	TP-24	TP-25	TP-26	TP-26	TP-27	TP-28	TP-28	TP-29	TP-29	TP-30	TP-31	TP-32	
					3-4 FT	7-8 FT	2-3 FT	6-7 FT	7.5-8.5 FT	2-3 FT	7-8 FT	8-9 FT	4.5-5.5 FT	2-3 FT	5-6 FT	7-8 FT	1-2 FT	4-5 FT	1-2 FT	6-7 FT	10-11FT	2.5-3.5	3-4 FT	
					NATIVE	NATIVE	FILL	NATIVE	NATIVE	FILL	NATIVE	NATIVE	NATIVE	FILL	NATIVE	NATIVE	FILL	NATIVE	NATIVE	FILL	NATIVE	FILL	NATIVE	NATIVE
Volatile Organic Compounds (SVOCs) - mg/Kg ⁴																								
Acetone	0.05	100	500	1000	--	--	--	--	--	0.008 J	ND	--	--	--	--	--	0.0074 J	ND	--	--	--	--	--	
Toluene	0.7	100	500	1000	--	--	--	--	--	ND	0.00071 J	--	--	--	--	--	ND	ND	--	--	--	--	--	
Semi-Volatile Organic Compounds (SVOCs) - mg/Kg ⁴																								
2-Methylnaphthalene	--	--	--	--	ND	ND	0.023 J	ND	ND	0.43	ND	ND	ND	0.12 J	ND	ND	ND	ND	0.062 J	ND	ND	ND	ND	
Acenaphthene	20	100	500	1000	ND	ND	0.032 J	ND	ND	0.65	ND	ND	ND	0.21	ND	ND	ND	ND	0.12 J	ND	ND	ND	ND	
Acenaphthylene	100	100	500	1000	ND	ND	ND	ND	ND	0.74	ND	ND	ND	0.052 J	ND	ND	ND	ND	0.1 J	ND	ND	ND	ND	
Anthracene	100	100	500	1000	ND	ND	0.067 J	ND	ND	2.4	ND	ND	ND	0.49	ND	ND	0.084 J	ND	0.29	ND	ND	ND	ND	
Benzo(a)anthracene	1	1	5.6	11	ND	ND	0.21	ND	ND	7.4	ND	ND	0.019 J	1.3	0.042 J	ND	0.29	ND	0.99	ND	ND	ND	ND	
Benzo(a)pyrene	1	1	1	1.1	ND	ND	0.15	ND	ND	6.8	ND	ND	ND	1	ND	ND	0.24 J	ND	0.77	ND	ND	ND	ND	
Benzo(b)fluoranthene	1	1	5.6	11	ND	ND	0.2	ND	ND	15 D	ND	ND	ND	1.5	0.042 J	ND	0.33	ND	1	ND	ND	ND	ND	
Benzo(ghi)perylene	100	100	500	1000	ND	ND	0.074 J	ND	ND	3.7	ND	ND	ND	0.49	ND	ND	0.15 J	ND	0.37	ND	ND	ND	ND	
Benzo(k)fluoranthene	0.8	3.9	56	110	ND	ND	0.059 J	ND	ND	2.7	ND	ND	ND	0.33	ND	ND	0.12 J	ND	0.4	ND	ND	ND	ND	
Benzaldehyde	--	--	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Carbazole	--	--	--	--	ND	ND	0.027 J	ND	ND	1.5	ND	ND	ND	0.26	ND	ND	ND	ND	0.13 J	ND	ND	ND	ND	
Chrysene	1	3.9	56	110	ND	ND	0.19	ND	ND	6.8	ND	ND	ND	1.1	0.034 J	ND	0.25	ND	0.89	ND	ND	ND	ND	
Dibenzofuran	7	59	350	1000	ND	ND	0.024 J	ND	ND	0.82	ND	ND	ND	0.17 J	ND	ND	ND	ND	0.089 J	ND	ND	ND	ND	
Dibenzo (a,h)anthracene	0.33	0.33	0.56	1.1	ND	ND	0.022 J	ND	ND	0.98	ND	ND	ND	0.11	ND	ND	ND	ND	0.088 J	ND	ND	ND	ND	
Fluoranthene	100	100	500	1000	ND	ND	0.3	ND	ND	24 D	ND	ND	0.021 J	2.4	0.07 J	ND	0.43	ND	1.7	ND	ND	ND	ND	
Fluorene	30	100	500	1000	ND	ND	0.033 J	ND	ND	1.2	ND	ND	ND	0.24	ND	ND	ND	ND	0.16 J	ND	ND	ND	ND	
Indeno(1,2,3-cd)pyrene	0.5	0.5	5.6	11	ND	ND	0.076 J	ND	ND	4.3	ND	ND	ND	0.56	ND	ND	0.15 J	ND	0.41	ND	ND	ND	ND	
Naphthalene	12	100	500	1000	ND	ND	0.027 J	ND	ND	1.2	ND	ND	ND	0.24	ND	ND	ND	ND	0.077 J	ND	ND	ND	ND	
Phenanthrene	100	100	500	1000	ND	ND	0.25	ND	ND	18 D	ND	ND	ND	1.9	0.062 J	ND	0.26	ND	1.1	ND	ND	ND	ND	
Pyrene	100	100	500	1000	ND	ND	0.26	ND	ND	19 D	ND	ND	0.02 J	2	0.059 J	ND	0.36	ND	1.5	ND	ND	ND	ND	
1,4-Dioxane ⁵	0.1	13	130	250	--	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
Perfluorinated Alkyl Acids - ug/g																								
Perfluorobutanoic Acid (PFBA)	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
Perfluoropentanoic Acid (PFPeA)	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
Perfluorobutanesulfonic Acid (PFBS)	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
Perfluorohexanoic Acid (PFHxA)	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
Perfluoroheptanoic Acid (PFHpA)	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
Perfluorohexanesulfonic Acid (PFHxS)	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
Perfluorooctanoic Acid (PFOA)	--	--	--	--	--	--	--	--	--	0.098 J	ND	--	--	--	--	--	0.16 J	ND	--	--	--	--	--	
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
Perfluoroheptanesulfonic Acid (PFHpS)	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
Perfluorononanoic Acid (PFNA)	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
Perfluorooctanesulfonic Acid (PFOS)	--	--	--	--	--	--	--	--	--	0.978 J	ND	--	--	--	--	--	0.322 J	ND	--	--	--	--	--	
Perfluorodecanoic Acid (PFDA)	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
Perfluoroundecanoic Acid (PFUnA)	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
Perfluorodecanesulfonic Acid (PFDS)	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
Perfluorooctanesulfonamide (FOSA)	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
Perfluorododecanoic Acid (PFDoA)	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
Perfluorotridecanoic Acid (PFTriDA)	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
Perfluorotetradecanoic Acid (PFTA)	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
PFOA/PFOS, Total	--	--	--	--	--	--	--	--	--	1.08 J	ND	--	--	--	--	--	0.482 J	ND	--	--	--	--	--	



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					3-4 FT	7-8 FT	2-3 FT	6-7 FT	7.5-8.5 FT	2-3 FT	7-8 FT	8-9 FT	4.5-5.5 FT	2-3 FT	5-6 FT	7-8 FT	1-2 FT	4-5 FT	1-2 FT	6-7 FT	10-11FT	2.5-3.5	3-4 FT	
					NATIVE	NATIVE	FILL	NATIVE	NATIVE	FILL	NATIVE	NATIVE	NATIVE	FILL	NATIVE	NATIVE	FILL	NATIVE	NATIVE	FILL	NATIVE	FILL	NATIVE	NATIVE
Total PCBs - mg/Kg ⁴																								
Aroclor 1260	--	--	--	--	--	--	--	--	--	0.00787 J	ND	--	--	--	--	--	0.00762 J	ND	--	--	--	--	--	
Aroclor 1268	--	--	--	--	--	--	--	--	--	0.00427 J	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
Total PCBs	0.1	1	1	25	--	--	--	--	--	0.0121 J	ND	--	--	--	--	--	0.00762 J	ND	--	--	--	--	--	
Total Metals - mg/Kg																								
Aluminum	--	--	--	--	2110	3190	3630	11300	9370	2970	12500	7760	2140	3670	3600	3620	4810	5160	5120	9810	13000	4560	5000	
Antimony	--	--	--	--	0.324 J	ND	0.966 J	0.904 J	1.14 J	1.02 J	1.09 J	0.534 J	0.353 J	2.05 J	ND	ND	ND	ND	0.479 J	ND	ND	0.334 J	0.329 J	
Arsenic	13	16	16	16	1.95	1.8	12.8	4.31	3.06	6.44	5.95	1.66	1.52	6.54	2.18	1.37	7.53	2.08	14.8	7.89	6.67	2.18	1.49	
Barium	350	400	400	10000	15.3	16	38.6	57.3	50.7	127	103	49.7	17.8	76.5	17.6	17.2	146	31.3	116	63.6	96.8	18.5	27.3	
Beryllium	7.2	72	590	2700	0.108 J	0.157 J	0.310 J	0.577	0.368 J	0.194 J	0.571	0.296 J	0.104 J	0.238 J	0.147 J	0.079 J	0.322 J	0.185 J	0.253 J	0.406 J	0.62	0.226 J	0.199 J	
Cadmium	2.5	4.3	9.3	60	0.291 J	0.341 J	0.868 J	0.596 J	ND	0.296 J	ND	ND	0.353 J	0.724 J	0.224 J	0.218 J	0.654 J	0.24 J	0.723 J	0.575 J	0.718 J	0.543 J	0.511 J	
Calcium	--	--	--	--	34200	2720	21200	2910	1450	50000	9020	54900	46900	67200	3180	922	19300	2890	8190	2250	2960	9300	3600	
Chromium	30	180	1500	6800	3.28	4.47	6.06	14.5	12	7.08	16.8	10.8	3.68	7.8	4.67	4.62	10.8	6.09	11.2	17.7	20.1	5.98	6.18	
Cobalt	--	--	--	--	2.4	2.55	3.64	9.44	7.15	2.68	15	5.61	2.37	4.22	2.21	2.54	3.74	2.77	5.24	8.28	11.6	3.33	3.84	
Copper	50	270	270	10000	9.96	8.27	29.6	17.9	17	23.5	23.1	15.1	8.29	30.6	4.68	2.32	23.4	6.19	31.1	20.2	20.2	7.85	5.02	
Iron	--	--	--	--	5920	7420	13400	20000	15800	7120	24200	13400	6160	12500	7640	6160	9830	8940	18200	27600	25200	9570	8580	
Lead	63	400	1000	3900	13.7	10.9	105	17.4	12.4	986	16.6	10.5	7.01	290	10.4	10.2	2070	105	345	10.4	12.4	28	42.6	
Magnesium	--	--	--	--	17800	1620	4510	4150	2890	4890	7690	20700	19100	22100	1870	915	6900	1570	4500	3720	5470	6020	2830	
Manganese	1600	2000	10000	10000	234	300	282	486	451	368	1020	292	219	398	231	189	240	214	318	417	381	362	374	
Mercury	0.18	0.81	2.8	5.7	0.035 J	0.023 J	0.136	0.023 J	0.028 J	0.209	0.018 J	0.024 J	ND	0.474	ND	0.025 J	0.604	0.043 J	9.34	ND	ND	ND	ND	
Nickel	30	310	310	10000	5.4	5.35	11.6	18.6	13.8	8.51	28.5	12.8	4.45	11.7	4.72	3.4	8.5	4.37	9.58	19.3	26.6	6.11	5.44	
Potassium	--	--	--	--	307	272	351	843	767	340	1280	823	364	536	262	130 J	376	187 J	546	788	1220	421	368	
Selenium	30	180	1500	10000	ND	ND	0.603 J	ND	ND	ND	ND	ND	ND	0.412 J	ND	ND	0.774 J	0.305 J	0.758 J	0.733 J	0.630 J	ND	ND	
Silver	2	180	1500	6800	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Sodium	--	--	--	--	76.6 J	40.7 J	66.9 J	59.1 J	41.2 J	97.8 J	159 J	132 J	99 J	702	86.4 J	39.2 J	847	177 J	46.9 J	65.6 J	188 J	325	188 J	
Thallium	--	--	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.66 J	ND	ND	ND	ND	0.34 J	ND	ND	ND	ND	
Vanadium	--	--	--	--	7.6	10.2	12.5	24	18.2	9.58	25.6	15.8	8.56	10.1	9.26	9.54	13.3	13.1	19	26.7	25.3	13.2	13.8	
Zinc	109	10000	10000	10000	57.3	63.3	72.2	72.4	90.3	159	68.4	52.3	56	158	52.9	38.3	219	63.5	225	132	67.4	57.8	47	
Pesticides - mg/Kg ⁴																								
Dieldrin	0.005	0.2	1.4	2.8	--	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
4,4'-DDD	0.0033	13	92	180	--	--	--	--	--	0.0172	ND	--	--	--	--	--	0.000952 JP	ND	--	--	--	--	--	
4,4'-DDE	0.0033	8.9	62	120	--	--	--	--	--	0.0445	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
4,4'-DDT	0.0033	7.9	47	94	--	--	--	--	--	1.93 D	ND	--	--	--	--	--	0.0034 J	ND	--	--	--	--	--	
Trans-chlordane	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	
Herbicides - mg/Kg ⁴																								
	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	

Notes:

- Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
- Values per NYSDEC Part 375 Unrestricted Soil Cleanup Objectives (SCOs), Table 375-6(a).
- Values per NYSDEC Part 375 Residential Use Soil Cleanup Objectives (SCOs), Table 375-6.8(b).
- Sample results were reported by the laboratory in ug/kg and converted to mg/kg for comparisons to SCOs
- 1,2-Dioxane was analyzed via Method 8270 Select Ion Method (SIM).

Definitions:

ND = Parameter not detected above laboratory detection limit.

"--" = No value available for the parameter, or the parameter was not analysed for.

J = Estimated value; result is less than the sample quantitation limit but greater than zero.

D = Concentration of analyte was quantified from diluted analysis.

P = The RPD between the results for the two columns exceeds the method-specified criteria.

BOLD	= Result exceeds Unrestricted Use SCO's.
BOLD	= Result exceeds Restricted Residential Use SCO's.
BOLD	= Result exceeds Restricted Commercial Use SCO's.
BOLD	= Result exceeds Restricted Industrial Use SCO's.

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1155 MAIN STREET SITE (C915341)
BUFFALO, NEW YORK

PARAMETER ¹	Unrestricted Use SCO's ²	Restricted Residential Use SCO's ³	Commercial Use SCO's ³	Industrial Use SCO's ³	TP-33 2-3 FT	TP-33 6-7 FT	TP-34 8-9 FT	TP-35 1.5-2.5	TP-36 5-6 FT	TP-37 6-7 FT	TP-38 1-2 FT	TP-38 6-7 FT	TP-39 6.5-7.5 FT	TP-40 2-3 FT	TP-40 7-8 FT	TP-41 8-9 FT	TP-42 2-3 FT	TP-43 2-3 FT	TP-43 6-7 FT	TP-44 6-7 FT	TP-45 1-2 FT	TP-45 5-6 FT	TP-46 6.5-7.5 FT	TP-47 7-8 FT	TP-48 5-6 FT			
					FILL	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	FILL	NATIVE	NATIVE	FILL	NATIVE	NATIVE	NATIVE	FILL	NATIVE	NATIVE	FILL	NATIVE	NATIVE	FILL	NATIVE	NATIVE	NATIVE	NATIVE
					Volatile Organic Compounds (SVOCs) - mg/Kg ⁴																							
Acetone	0.05	100	500	1000	0.0052 J	ND	--	--	--	--	0.0059 J	ND	--	--	--	--	--	0.0083 J	0.045	--	--	--	--	--	--			
Toluene	0.7	100	500	1000	ND	0.0011	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--			
Semi-Volatile Organic Compounds (SVOCs) - mg/Kg ⁴																												
2-Methylnaphthalene	--	--	--	--	ND	ND	ND	ND	ND	ND	0.026 J	ND	ND	0.032 J	ND	ND	ND	0.041 J	ND	ND	0.085 J	ND	ND	ND	ND	ND		
Acenaphthene	20	100	500	1000	0.069 J	ND	ND	ND	ND	ND	0.047 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.022 J			
Acenaphthylene	100	100	500	1000	0.033 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Anthracene	100	100	500	1000	0.18	ND	ND	ND	ND	ND	0.12	ND	ND	0.047 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.044 J			
Benzo(a)anthracene	1	1	5.6	11	1	ND	ND	ND	ND	ND	0.41	0.066 J	ND	0.16	ND	ND	0.028 J	0.1 J	ND	ND	0.1 J	ND	ND	ND	0.12			
Benzo(a)pyrene	1	1	1	1.1	0.84	ND	ND	ND	ND	ND	0.37	0.05 J	ND	0.14 J	ND	ND	ND	0.081 J	ND	ND	0.085 J	ND	ND	ND	0.09 J			
Benzo(b)fluoranthene	1	1	5.6	11	1.2	ND	ND	ND	ND	ND	0.47	0.064 J	ND	0.14	ND	ND	ND	0.11	ND	ND	0.12	ND	ND	ND	0.12			
Benzo(ghi)perylene	100	100	500	1000	0.44	ND	ND	ND	ND	ND	0.22	0.029 J	ND	0.072 J	ND	ND	ND	0.043 J	ND	ND	0.054 J	ND	ND	ND	0.044 J			
Benzo(k)fluoranthene	0.8	3.9	56	110	0.44	ND	ND	ND	ND	ND	0.16	ND	ND	0.12	ND	ND	ND	0.034 J	ND	ND	0.036 J	ND	ND	ND	0.04 J			
Benzaldehyde	--	--	--	--	ND	ND	ND	ND	ND	ND	0.053 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Carbazole	--	--	--	--	0.098 J	ND	ND	ND	ND	ND	0.045 J	ND	ND	0.024 J	ND	ND	ND	ND	ND	ND	0.018 J	ND	ND	ND	0.022 J			
Chrysene	1	3.9	56	110	1	ND	ND	ND	ND	ND	0.37	0.053 J	ND	0.18	ND	ND	0.028 J	0.094 J	ND	ND	0.11	ND	ND	ND	0.11 J			
Dibenzofuran	7	59	350	1000	0.03 J	ND	ND	ND	ND	ND	0.025 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.035 J	ND	ND	ND	ND			
Dibenzo (a,h)anthracene	0.33	0.33	0.56	1.1	0.11	ND	ND	ND	ND	ND	0.063 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Fluoranthene	100	100	500	1000	1.5	ND	ND	ND	ND	ND	0.72	0.11	ND	0.26	ND	ND	0.044 J	0.15 J	ND	ND	0.17	ND	ND	ND	0.21			
Fluorene	30	100	500	1000	0.081 J	ND	ND	ND	ND	ND	0.058 J	ND	ND	0.025 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.022 J			
Indeno(1,2,3-cd)pyrene	0.5	0.5	5.6	11	0.46	ND	ND	ND	ND	ND	0.22	0.032 J	ND	0.081 J	ND	ND	ND	0.042 J	ND	ND	0.051 J	ND	ND	ND	0.047 J			
Naphthalene	12	100	500	1000	ND	ND	ND	ND	ND	ND	0.023 J	ND	ND	0.027 J	ND	ND	ND	0.030 J	ND	ND	0.072 J	ND	ND	ND	ND			
Phenanthrene	100	100	500	1000	0.99	ND	ND	ND	ND	ND	0.46	0.084 J	ND	0.2	ND	ND	0.062 J	0.11	ND	ND	0.16	ND	ND	ND	0.2			
Pyrene	100	100	500	1000	1.4	ND	ND	ND	ND	ND	0.59	0.09 J	ND	0.22	ND	ND	0.04 J	0.13	ND	ND	0.15	ND	ND	ND	0.17			
1,4-Dioxane ⁵	0.1	13	130	250	ND	ND	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--			
Perfluorinated Alkyl Acids - ug/g																												
Perfluorobutanoic Acid (PFBA)	--	--	--	--	ND	ND	--	--	--	--	ND	ND	--	--	--	--	--	0.077 J	ND	--	--	--	--	--	--			
Perfluoropentanoic Acid (PFPeA)	--	--	--	--	ND	ND	--	--	--	--	ND	0.062 J	--	--	--	--	--	0.065 J	ND	--	--	--	--	--	--			
Perfluorobutanesulfonic Acid (PFBS)	--	--	--	--	ND	ND	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--			
Perfluorohexanoic Acid (PFHxA)	--	--	--	--	ND	ND	--	--	--	--	ND	0.074 J	--	--	--	--	--	ND	ND	--	--	--	--	--	--			
Perfluoroheptanoic Acid (PFHpA)	--	--	--	--	ND	ND	--	--	--	--	ND	0.067 J	--	--	--	--	--	ND	ND	--	--	--	--	--	--			
Perfluorohexanesulfonic Acid (PFHxS)	--	--	--	--	ND	ND	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--			
Perfluorooctanoic Acid (PFOA)	--	--	--	--	0.092 J	0.067 J	--	--	--	--	0.084 J	0.366 J	--	--	--	--	--	0.168 J	0.068 J	--	--	--	--	--	--			
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	--	--	--	--	ND	ND	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--			
Perfluoroheptanesulfonic Acid (PFHpS)	--	--	--	--	ND	ND	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--			
Perfluorononanoic Acid (PFNA)	--	--	--	--	ND	ND	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--			
Perfluorooctanesulfonic Acid (PFOS)	--	--	--	--	0.464 J	ND	--	--	--	--	0.367 J	0.265 J	--	--	--	--	--	1.04 J	ND	--	--	--	--	--	--			
Perfluorodecanoic Acid (PFDA)	--	--	--	--	ND	ND	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--			
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	--	--	--	--	ND	ND	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--			
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	--	--	--	--	0.177 J	0.309 J	--	--	--	--	ND	ND	--	--	--	--	--	0.166 J	0.136 J	--	--	--	--	--	--			
Perfluoroundecanoic Acid (PFUnA)	--	--	--	--	ND	ND	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--			
Perfluorodecanesulfonic Acid (PFDS)	--	--	--	--	ND	ND	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--			
Perfluorooctanesulfonamide (FOSA)	--	--	--	--	ND	ND	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--			
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	--	--	--	--	0.167 J	0.244 J	--	--	--	--	ND	ND	--	--	--	--	--	0.150 J	0.138 J	--	--	--	--	--	--			
Perfluorododecanoic Acid (PFDoA)	--	--	--	--	ND	ND	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--			
Perfluorotridecanoic Acid (PFTriDA)	--	--	--	--	ND	ND	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--			
Perfluorotetradecanoic Acid (PFTA)	--	--	--	--	ND	ND	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--			
PFOA/PFOS, Total	--	--	--	--	0.556 J	0.067 J	--	--	--	--	0.451 J	0.631 J	--	--	--	--	--	1.21 J	0.068 J	--	--	--	--	--	--			

DRAFT
TABLE

SUMMARY OF REMEDIAL INVESTIGATION SOIL-FILL SAMPLE ANALYTICAL RESULTS
REMEDIAL INVESTIGATION / INTERIM REMEDIAL MEASURE/ ALTERNATIVE ANALYSIS REPORT
1155 MAIN STREET SITE (C915341)
BUFFALO, NEW YORK

PARAMETER ¹	Unrestricted Use SCO's ²	Restricted Residential Use SCO's ³	Commercial Use SCO's ³	Industrial Use SCO's ³	TP-33	TP-33	TP-34	TP-35	TP-36	TP-37	TP-38	TP-38	TP-39	TP-40	TP-40	TP-41	TP-42	TP-43	TP-43	TP-44	TP-45	TP-45	TP-46	TP-47	TP-48		
					2-3 FT	6-7 FT	8-9 FT	1.5-2.5	5-6 FT	6-7 FT	1-2 FT	6-7 FT	6.5-7.5 FT	2-3 FT	7-8 FT	8-9 FT	2-3 FT	2-3 FT	6-7 FT	6-7 FT	1-2 FT	5-6 FT	6.5-7.5 FT	7-8 FT	5-6 FT		
					FILL	NATIVE	NATIVE	NATIVE	NATIVE	NATIVE	FILL	NATIVE	NATIVE	FILL	NATIVE	NATIVE	FILL	NATIVE	NATIVE	NATIVE	FILL	NATIVE	NATIVE	FILL	NATIVE	NATIVE	NATIVE
Total PCBs - mg/Kg ⁴																											
Aroclor 1260	--	--	--	--	ND	ND	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--		
Aroclor 1268	--	--	--	--	ND	ND	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--		
Total PCBs	0.1	1	1	25	ND	ND	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--		
Total Metals - mg/Kg																											
Aluminum	--	--	--	--	4520	6000	4160	4660	6150	2130	3710	4420	7680	10700	3680	12900	3180	2880	9740	3880	8250	5480	5750	6720	7120		
Antimony	--	--	--	--	0.698 J	ND	ND	ND	ND	ND	ND	ND	0.629 J	0.98 J	ND	0.383 J	ND	1.09 J	0.863 J	ND	1.6 J	ND	0.562 J	0.695 J	0.67 J		
Arsenic	13	16	16	16	6.09	1.29	2.59	2.03	2.39	1.37	4.17	1.56	1.4	5.11	1.8	4.94	2.58	4.66	3.92	2.05	10	1.61	2.96	4.96	2.08		
Barium	350	400	400	10000	183	23.8	22.3	37.1	31.1	7.14	71.2	16.2	21.9	134	21.1	106	19.2	44.4	85.9	20.2	113	30.6	75.4	49	64.9		
Beryllium	7.2	72	590	2700	0.272 J	0.289 J	0.155 J	0.193 J	0.225 J	0.082 J	0.215 J	0.183 J	0.244 J	0.471	0.167 J	0.494 J	0.095 J	0.206 J	0.464	0.198 J	0.563	0.222 J	0.272 J	0.329 J	0.349 J		
Cadmium	2.5	4.3	9.3	60	0.227 J	ND	0.359 J	0.325 J	0.297 J	0.28 J	0.335 J	0.453 J	0.413 J	0.424 J	0.501 J	0.453 J	0.303 J	0.376 J	0.529 J	0.326 J	1.03	0.296 J	0.362 J	0.357 J	0.481 J		
Calcium	--	--	--	--	30800	1680	2020	2020	992	53700	60500	1530	1000	11800	1580	45000	19300	53800	60400	2300	49600	6570	53300	35100	4930		
Chromium	30	180	1500	6800	6.8	7.08	5.92	6.12	9.94	2.88	6.05	5.54	7.32	15.2	5.94	18.6	4.94	6.13	14.1	5.3	22.7	5.43	9.36	10.4	9.94		
Cobalt	--	--	--	--	3.14	3.49	4.27	4.09	4.52	1.66	1.91	3.1	3.6	7.65	3.21	11.6	2.74	2.83	8.55	2.46	7.1	2.37	5.06	5.77	3.42		
Copper	50	270	270	10000	17.9	8.76	13.7	5.81	8.91	8.6	13.4	6.76	4.05	17.7	9.44	21.8	10.2	20.1	17	9.57	38.7	10.8	11.5	12.8	14.2		
Iron	--	--	--	--	8550	10000	10400	8640	14900	4740	5240	8340	9460	20800	9440	24200	7570	6900	17700	7650	25600	7470	11800	13700	11200		
Lead	63	400	1000	3900	466	17.6	29	56.4	7.72	5.57	1270	9.29	14.1	210	11.4	22.9	22.7	125	13.2	13.7	161	34.1	9.86	16.9	14.2		
Magnesium	--	--	--	--	9240	2020	1390	1590	1550	23800	9700	1290	798	6510	1020	12600	10100	9690	20800	1160	14200	3390	21900	16600	3100		
Manganese	1600	2000	10000	10000	366	243	376	275	112	191	194	204	163	340	331	499	275	211	451	97.2	565	106	327	253	146		
Mercury	0.18	0.81	2.8	5.7	0.242	ND	ND	0.059 J	ND	ND	0.377	ND	0.028 J	0.129	ND	ND	0.035 J	0.099	ND	ND	0.358	0.636	ND	0.112	0.065 J		
Nickel	30	310	310	10000	7.33	6.96	5.23	4.69	6.82	3.72	4.33	5.18	4.55	18	5.62	24.2	5.46	7.24	19	6.37	20.3	4.8	11.4	12.6	8.4		
Potassium	--	--	--	--	426	449	256	295	344	395	388	343	252	1240	300	1920	420	349	1490	327	1300	257	962	1110	473		
Selenium	30	180	1500	10000	0.362 J	ND	0.281 J	0.396 J	0.386 J	ND	ND	ND	ND	0.499 J	ND	0.514 J	ND	ND	ND	ND	0.572 J	ND	ND	ND	0.387 J		
Silver	2	180	1500	6800	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Sodium	--	--	--	--	819	461	346	52.1 J	90.4 J	148 J	695	260	34.6 J	95.7 J	40.1 J	188 J	250	290	204	71.5 J	477	87.6 J	128 J	103 J	163 J		
Thallium	--	--	--	--	ND	ND	0.33 J	0.325 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Vanadium	--	--	--	--	19.3	14.3	14.5	19.1	12.3	5.12	27.8	12.2	15.8	22	13.3	26	9.69	15.7	21	11	22.6	11.4	14.6	17.4	16.1		
Zinc	109	10000	10000	10000	272	84.1	89.8	55.6	68.1	34.1	47.8	58.7	52.4	105	76.1	64.9	75.3	60.7	58.8	72.6	136	50.1	49.7	60.4	92.7		
Pesticides - mg/Kg ⁴																											
Dieldrin	0.005	0.2	1.4	2.8	ND	ND	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--		
4,4'-DDD	0.0033	13	92	180	ND	ND	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--		
4,4'-DDE	0.0033	8.9	62	120	ND	ND	--	--	--	--	0.00166 J	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--		
4,4'-DDT	0.0033	7.9	47	94	ND	ND	--	--	--	--	0.00388	0.0068 P	--	--	--	--	--	ND	ND	--	--	--	--	--	--		
Trans-chlordane	--	--	--	--	0.00549 JIP	ND	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--		
Herbicides - mg/Kg ⁴																											
	--	--	--	--	ND	ND	--	--	--	--	ND	ND	--	--	--	--	--	ND	ND	--	--	--	--	--	--		

Notes:

- Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
- Values per NYSDEC Part 375 Unrestricted Soil Cleanup Objectives (SCOs), Table 375-6(a).
- Values per NYSDEC Part 375 Residential Use Soil Cleanup Objectives (SCOs), Table 375-6.8(b).
- Sample results were reported by the laboratory in ug/kg and converted to mg/kg for comparisons to SCOs
- 1,4-Dioxane was analyzed via Method 8270 Select Ion Method (SIM).

Definitions:

ND = Parameter not detected above laboratory detection limit.

"-" = No value available for the parameter, or the parameter was not analysed for.

J = Estimated value; result is less than the sample quantitation limit but greater than zero.

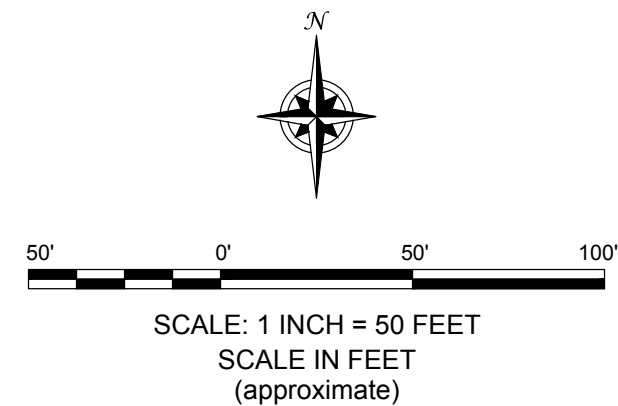
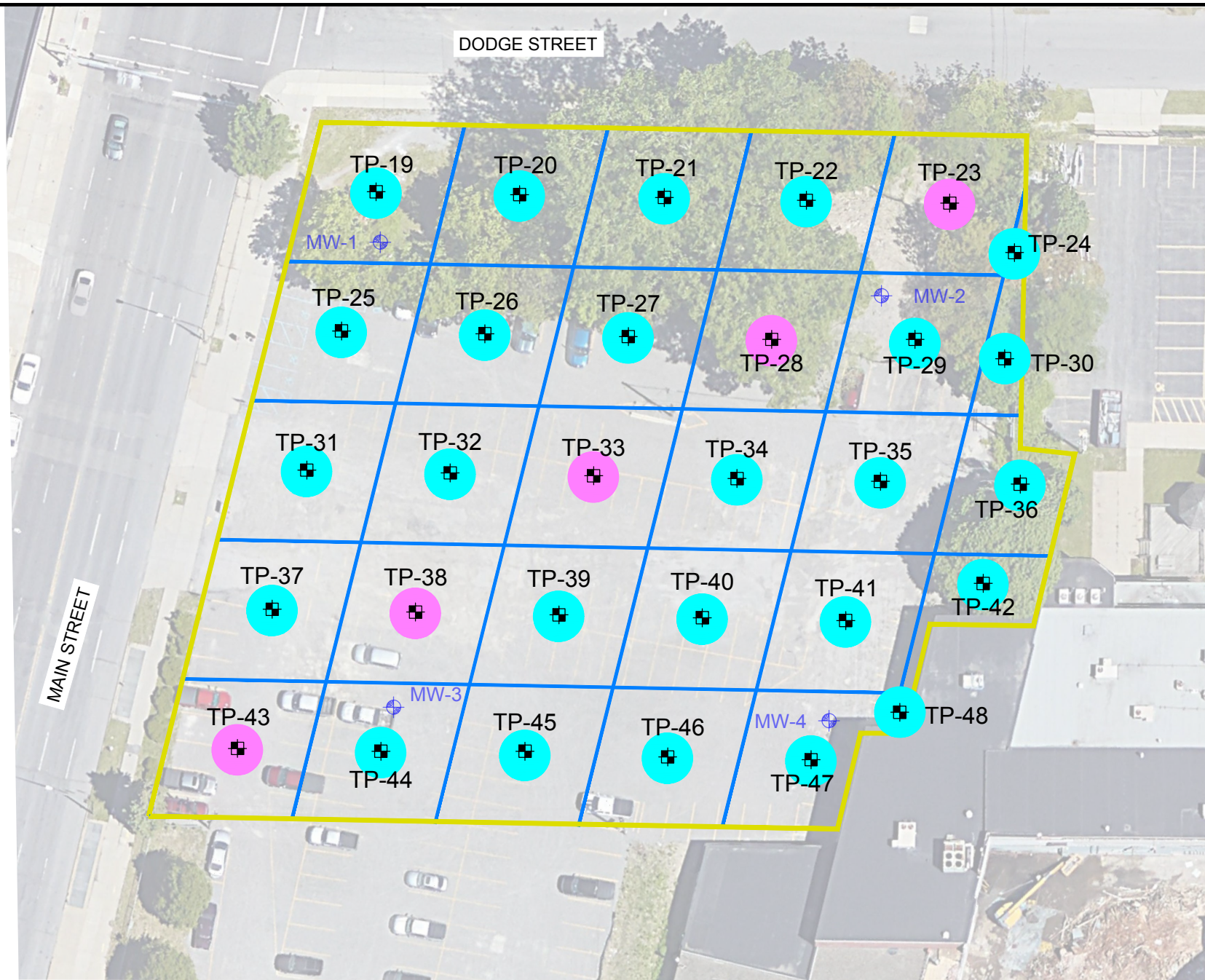
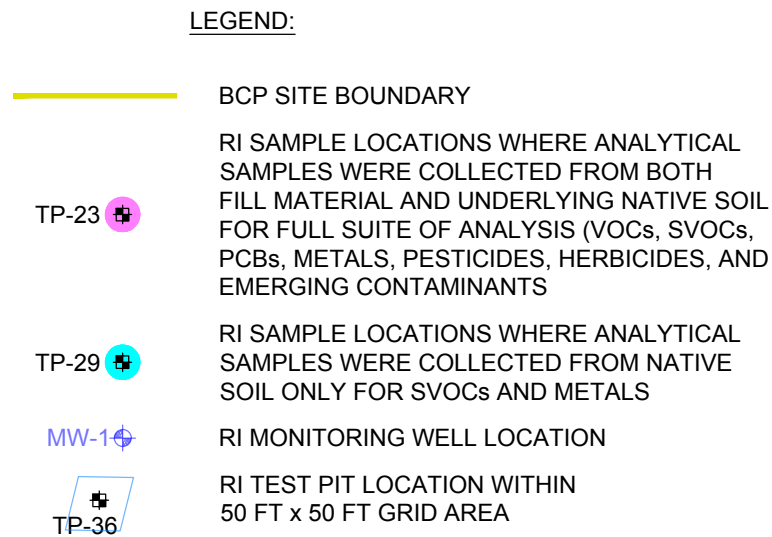
D = Concentration of analyte was quantified from diluted analysis.

P = The RPD between the results for the two columns exceeds the method-specified criteria.

BOLD	= Result excee = Result exceeds Unrestricted use SCO's.
BOLD	= Result excee = Result exceeds Restricted Residential use SCO's.
BOLD	= Result exceeds Restricted Commercial Use SCO's.
BOLD	= Result exceeds Restricted Industrial Use SCO's.

FIGURES

DATE: APRIL 2019
DRAFTED BY: GNC



**REMEDIAL INVESTIGATION LOCATION
ANALYSIS SUMMARY**
IRM SAMPLING PLAN ADDENDUM LETTER

1155 MAIN STREET SITE
BUFFALO, NEW YORK
PREPARED FOR
MAIN & DODGE LLC

BENCHMARK
ENVIRONMENTAL
ENGINEERING &
SCIENCE, PLLC

2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0599

JOB NO.: 0371-018-002

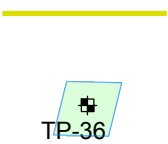
FIGURE 1

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DATE: APRIL 2019
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LEGEND:



BCP SITE BOUNDARY

NATIVE SOIL SAMPLE LOCATION WHERE SAMPLE RESULTS EXCEEDED THEIR RESPECTIVE UNRESTRICTED SCO BUT DETECTED BELOW THE RESIDENTIAL SCO

PARAMETER	USCO (mg/Kg)
LEAD	63
MERCURY	0.18
ZINC	109
4,4'-DDT	0.0033

NOTE:
FBGS = FEET BELOW GROUND SURFACE



SCALE: 1 INCH = 50 FEET
SCALE IN FEET
(approximate)

**REMEDIAL INVESTIGATION LOCATION
EXCEEDING USCOs**

IRM SAMPLING PLAN ADDENDUM LETTER

1155 MAIN STREET SITE

BUFFALO, NEW YORK

PREPARED FOR
MAIN & DODGE LLC

BENCHMARK
ENVIRONMENTAL
ENGINEERING &
SCIENCE, PLLC

2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0599

JOB NO.: 0371-018-002

FIGURE 2

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