TOBSWMF's Leachate Monitoring Program June 2020

Town of Babylon Department of Environmental Control

Victoria Russell, Commissioner
Prepared by Joseph Guarino, Principal Environmental Analyst
281 Phelps Lane
North Babylon, NY 11703
631-422-7640

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Laboratory data and summary report from June 2020 sampling for Babylon's Leachate Monitoring Program.

TOBSWMF's Leachate Monitoring Program

June 2020

As part of its solid waste infrastructure the Town of Babylon maintains four ashfills, the Southern Ashfill (SA), the Old Northern U Ashfill (ONU), the New Northern U Ashfill (NNU) and the lateral expansion of the Southern Ashfill, also known as Cell 7 (NYSDEC Permit No. 1-4720-00778/00014). These ash facilities are located on the northern and southern face of the former Babylon Landfill located on Gleam Street in West Babylon, NY.

Babylon's leachate monitoring program (LMP) samples leachate from each of Babylon's ash facilities pursuant to the requirements of 6NYCRR part 363 (formerly part 360) and/or special condition attached to their NYSDEC solid waste management operating permits. Sampling procedures are described in detail within the 2018 Update Site Analytical Plan for the Town of Babylon Solid Waste Management Facilities (SAP) (TOBDEC, 2018).

Historically for the TOBSWMF's LMP, sampling at the SA, ONU and NNU ash facilities was limited to baseline parameters. In 2018 the NYSDEC required Babylon also sample for 1,4 dioxane when sampling these facilities for the LMP. Sampling in June 2020 also included PFOS/PFOA's. Leachate at Cell 7 continues to be sampled for expanded parameters (the expanded parameters list was modified as part of the updated NYSDEC Solid Waste Management Facility regulations (appendix 2)). Sampling of the SA, ONU, NNU and Cell 7 were performed on May 28, 2020. The sampling protocol for the LMP is detailed in the Updated SAP for the Town of Babylon Solid Waste Management Facilities (TOBDEC, 2018). Sampling at the SA and ONU is limited to the Secondary Leachate Collection and Recovery System (SLCRS). Sampling at the NNU is performed for both the Primary Leachate Collection and Recovery System (PLCRS) and SLCRS. Sampling at Cell 7 was for the PLCRS. The complete laboratory report, case narrative and QA/QC package from Pace Analytical Services Inc has been attached as an appendix to this report. Included within the Pace Labs report is analysis for PFAS/PFOA's performed by Eurofins Environmental Testing America. In addition to internal laboratory QA/QC, a trip blank for VOC's and equipment blank sample were obtained as part of the operational QA/QC requirements. The trip blank and equipment blank were clean. The method blank provided as part of the PFAS/PFOA's analysis for Cell 7 included PFBA (.387 ng/l), FOSA (.514) and PFHxS (.274 ng/l). The equipment blank and method blank provided with PFAS/PFOA analysis for the remaining leachate facilities included PFBA (.44) and PFxS (.27) and in the method blank PFHxS (.299) and FOSA (.409) in the method blank. The results of the duplicate were not notable.

Project narratives prepared by the laboratory for each category were reviewed. Notations and flagging qualifiers discussed in the narratives were noted. Each data package was certified by

the laboratory as being in compliance with the laboratories quality assurance manual both technically and for completeness.

This section of the LMP report provides a brief summary of the June 2020 leachate sampling at the TOBSWMF's. The sections that follow provide a more detailed discussion of the results from each ash facility.

The following are notable observations from the June 2020 LMP sampling results:

- Manganese (1.3 mg/l) did not exceed it MCL at the ONU. Manganese has exceeded its MCL at the ONU in 22 of the past 34 sampling events.
- pH of leachate at the ONU was 7.15, 8.12 at the SA, 6.96 at the NNU PLCRS, 6.66 at the NNU SLCRS and 7.36 at Cell 7. All continue to be observed within an acceptable range.
- Baseline organics observed at each facility for the June 2020 LMP:
    - Baseline organics were not observed at the ONU or SA facilities.
    - Total baseline organics observed at the NNU facility; 0.4275 mg/l at the NNU P and 0.3853 mg/l at the NNU S.
    - No individual organic compound from the baseline parameters list (SA, ONU and NNU), or summation of those compounds (TTO)[1] were observed at or above their MCL or TTO limits at any of these Babylon ash facilities during the June 2020 LMP.
- Total organics from the expanded parameters list (above mdl) observed at the Cell 7 facility was .276 mg/l. Total Toxic Organics (TTO) (>.01 mg/l) at the Cell 7 facility was .087 mg/l. This is below the overall TTO limit (10 mg/l) and 1.5 mg/l limit for acid extractable compounds within the Town of Babylon discharge Certificate issued by SCDPW.
- Barium did not exceed its MCL at the ONU, SA, NNU or Cell 7 for June 2020.
- Mercury was not detected at the ONU, SA, NNU PLCRS/SLCRS or Cell 7 for June 2020.
- Piper diagrams for the SA, ONU, NNU and Cell 7 were updated with leachate sampled during the June 2020 LMP and conform to historical data.
- Project narratives were prepared by Pace Analytical Services Inc. for the June 2020 LMP laboratory results. Any issues, deficiencies or flagging of results were summarized in these narratives, and can be found in the appendix of this report. Each data package was certified by the laboratory as being in compliance with its contract for Babylon's LMP both technically and for completeness.

[1] Suffolk County Department of Public Works Total Toxic Organics (TTO) limited to: VOC's 2.5 mg/l, Base Neutral Extractable Compounds 1.5 mg/l, Acid Extractable Compounds 1.5 mg/l and Pesticides and PCB's 1 mg/l.

TOBSWMF's Leachate Monitoring Program

Old Northern U

June 2020

Pursuant to NYSDEC 6NYCRR Part 363 requirements for the operation of the Town of Babylon's Old Northern U (ONU) Ashfill, leachate from that facility's secondary leachate collection and recovery system (SLCRS) was sampled in accordance with the procedures detailed in the TOBSWMF's SAP (TOBDEC, 2018). The ONU SLCRS is sampled semi-annually for baseline parameters. In 2018 the NYSDEC required sampling to be expanded to include 1,4 dioxane. For December 2019 Babylon expanded sampling to include PFAS/PFOA's for this facility.

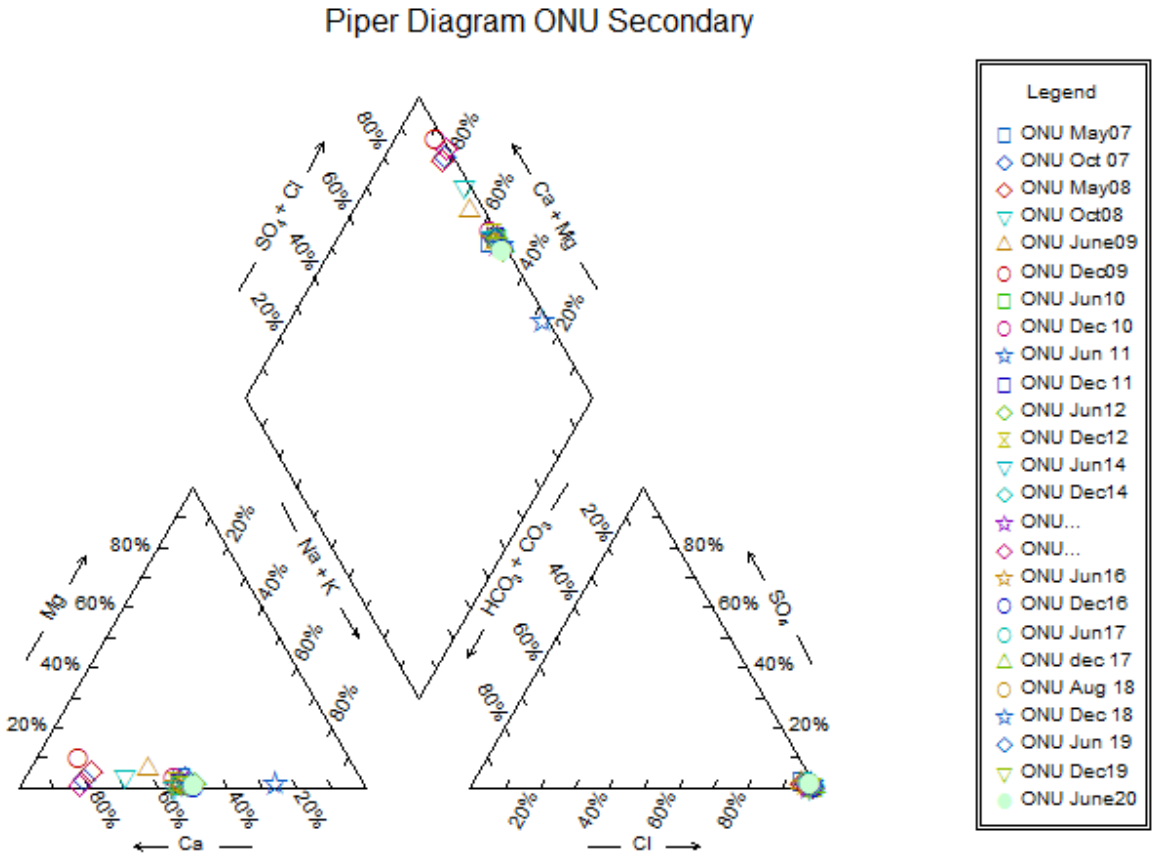
Ash has not been deposited in the ONU since it was capped in 2002 when the New Northern U (NNU) was constructed atop the facility. Leachate continues to be generated at the ONU despite the facility being capped and numerous attempts to locate the source. The LMP will continue at the ONU until there is a cessation of leachate generation. Included in this report is the June 2020 laboratory report from Pace Analytical Services, a spreadsheet summarizing parameters of concern dating back to 1995, a Piper diagram and a discussion of the laboratory results.

The attached spreadsheet provides a historical overview of leachate composition and any exceedance of MCL's at the ONU. The bullets below highlight notable observations from this round of sampling at the ONU and/or provide follow-up discussion/analysis of previous reports when appropriate.

- The chemical composition of leachate from the ONU for June 2020 generally conforms to historical data from the facility.
- pH measured in the field at the ONU SLCRS for June 2020 was 7.15.
- Manganese (1.3mg/l) was observed below its MCL for June 2020. Manganese has been observed exceeding its MCL in 22 of the past 34 monitoring events at the ONU.
- Barium (.619 mg/l) was not observed above its MCL at the ONU for June 2020.
- Arsenic and lead were not detected above their mdl at the ONU for June 2020. Low values of arsenic and lead have been intermittently observed at this facility.
- Other metals observed at the ONU at values above their reporting limit and below their MCL (where one has been established) for June 2020 include boron (.243 mg/l), calcium (2390 mg/l), copper (.0398 mg/l), chromium (.0489 mg/l), iron (6.16 mg/l), magnesium (12 mg/l), nickel (.0478 mg/l), potassium (937 mg/l), and sodium (2230 mg/l).
- No organics on the baseline list were observed at the ONU for June 2020.
- 1,4 dioxane was observed at .38 ug/l for June 2020 at the ONU.

- Sulfide was not detected above its mdl at the ONU facility for June 2020.
- The Piper diagram from the ONU facility was updated with June 2020 data. The geochemical fingerprint for this facility remains unchanged.
- PFAS/PFOA's results are attached in appendix 1.

The next round of sampling at the ONU is scheduled for June 2020.



Note: Solid circle = data point for June 2020.

PARAMETERS	03 MCL	Oct_08	June_09	Dec_09	June_10	Dec_10	Jun_11	Dec_11	12-Jun	DEC_12	Jun_13	Dec_13	Jun_14	DEC_14	June_15	Dec_15
CHLORIDE	na	10300	7450	11700	19000	16000	18000	29000	24000	32200	9610 D	39500 D	13600	32800 D	11400 D	54100
SULFATE	na	152	90.3	139	<	29	16	7	7	<250	**5130**	5.41	9.64	207 D	106 D	82
Alkalinity		250	402	400	210	310	380	260	250	319	339 D	136 D	330	148 D	183 D	186
Na	ppm	869	660	37.6	4100	3600	4200	4500	6000	6110	3170	7990	3930	6780 D	3120	566
K	ppm	878	684	352	2000	1500	**20000**	2100	3200	2480	1150	3790	1030 E	3060 D	1240	4470
Ca	ppm	2850	1580	1350	5200	4800	4800	5700	6600	7920	3760	9640	4810	7920 D	3550	12800
Mg	ppm	95.4	90.8	101	23	160	95	86	82	130	209	0.481 B	0.244	37.3	35.2	11.9
pH	5 - 12.5	8.02	7.55	7.78	6.5	6.24	7	6.7	6.2	6.25		Temp	3.96	6.43	6.97	5.72
TDS	na	25100	14200	19300	34000	25000	37000	38000	45000	49400	39800 D	80900 D	36400	64500	38500	122
PHENOL	1.5 mg/l															
PHENOLS		0.0137	0.0397	<.01	0.011	<	0.005	0.008	0.057	<.05	<.005	0.0488 D	<.005	<.005	<.005 U	<.005
IRON	na	9.75	21.7	34.2	33	74	60	86	46	83.6	62.9	0.416	63.3	13.6	17.9	11.6
MANGANESE	8 mg/l	16.9	15.5	21	5.5	36	20	21	18	34.5	41.2	0.0259	63.2	7.97	6.39	11.9
TKN	na	19.4	18.3	26.7	35	30	34	93	50	51.1	36.4 D	73.5 D	23.6	47.5 D	15.9 D	73.1
ALUMINUM	na	0.0146	0.245	0.038	<	0.37	0.45	<	0.79	0.0461 B	<.95	0.884	<	U	0.0329 B	<
ACETONE	50 mg/l				0.024	<	<	<	<	0.0049	0.005	0.036 Z	<	U	0.005	0.002
3+4 methylphenol								<	<	<						<
Methyl Ethyl Ketone	na						<	<	<	<	<	0.003 J	<	U	U	<
Arsenic	.400 mg/l				0.078	<	<	<	<	0.0049 B	<.28	0.0093 B	0.0124	U	U	<
Lead	.4 mg/l		0.0073 J	.00932J	<	<	<	<	<	0.0112	<.1	0.0135	0.0164	U	U	0.0031
Barium	8 mg/l	2	1.72	2.28	5.7	5	4.5	5.2	5.4	7.35	2.44 B	5.38	2.7	3.24	1.31	4.93
Xylene	ppb				<	<	<	<	<	<	<	<	<	U	U	<
Zinc	5 mg/l	0.0377	0.0608	0.102	<	0.17	0.14	0.22	<	0.0267	<.03	0.0096	<	0.207	0.017 B	0.0254
Beryllium					<	<	<	<	<	<.005	<.01	<	<	U	U	<
Nickel	8 mg/l	0.0119	0.0413	.0133J	<	<	<	<	<	<.04	0.03 B	0.002 B	<	U	0.002 B	<
Selenium	.4mg/l			.0171J	<	<	<	<	<	0.0171	<.23	<	<	U	U	<
Thallium		0.0249			<	<	<	<	<	<.01	<.19	<	0.123	U	U	0.0635
Silver	.4mg/l	0.0053			<	<	<	<	<	0.0039 B	0.0388 B	<	<	U	U	0.0029
Toluene					<	<	<	<	<	<	<	<	<	U	U	<
Carbon Disulfide					<	<	<	<	<	<	<	<	<	U	U	<
methylene chloride	2.5 mg/l	11 B	6.6 B		<	<	<	<	<	<	<	<	<	U	U	<
chromium										0.0071 B	0.09 B	<	0.0235	U	0.0027 B	<
Antimony										0.0055 B	<.12	0.0062 B	<	U	0.0028 B	<
4-Methyl-2-pentanone																0.003
Sulfide																
1,4 dioxane	ug/l															

perfluorobutanoic acid (PFBA)
perfluoropentanoic acid (PFPeA)
perfluorohexanoic acid(PFHxA)
perfluoroheptanoic acid
perfluorooctanoic acid(PFOA)
perfluorononanoic acid(PFNA)
perfluorodecanoic acid (PFDA)
perfluoroundecanoic acid(PFUnA)
perfluorododecanoic acid(PFDoA)
perfluorotridecanoic acid(PFTriA)
perfluorotetradecanoic acid(PFTeA)
perfluorobutanesulfonic acid(PFBS)
perfluorohexanesulfonic acid(PFHxS)
perfluoroheptanesulfonic acid(PFHpS)
perfluorooctanesulfonic acid(PFOS)
perfluorodecanesulfonic acid(PFDS)
perfluorooctanesulfonamide(FOSA)
N-methylperfluorooctanesulfonamidoacetic acit(NMeFOSAA)
N-ethylperfluorooctanesulfonamidoacetic acit(NEtFOSAA)
6:2FTS
8:2FTS

PARAMETERS	Jun_16	Dec_16	17-Jun	Dec_17	Aug_18	Dec_18	Jun_19	Dec_19	Jun_20
CHLORIDE	D 9630	D 44600	9970	348000	16400	19600	20400	D 14600	11600
SULFATE	D 165	D 58	282	93.8	264	257	D 197	D 141	191
Alkalinity	D 271	182	143	148	293	139	245	302	196
Na	2390	8460	2500	6760	3720	3760	D 4560	D 3140	2230
K	945	3870	1030	3310	1320	1570	D 1560	D 1140	937
Ca	2960	9220	3100	8040	4290	4220	5140	D 3550	2390
Mg	38.5	<10	19.4	0.293	19.2	11	192	71	12
pH	5.74	9.59/7	6.49	9.8	7.49	7.52	7.22	7.59	7.15
TDS	23900	52800	25200	69200	28600	24000	29900	19500	13700
PHENOL									
PHENOLS	<.005	0.297	0.0264	0.0587	0.134	0.0059	<.00001	0.0158	<.005
IRON	4.79	<5	4.32	<.4	2.21	1.44	31.8	13.3	6.16
MANGANESE	5.07	<.5	1.63	<.01	1.23	0.62	41.8	14.5	1.3
TKN	13.7	64.3	12.6	52.2	37.3	13.3	27.1	29.1	11.2
ALUMINUM	0.0704 J	<10	<.0134	1.13	<10	<.2	<.2	<.2	<.2
ACETONE	J < 0.0804		<.001	0.0514	0.0024 J	0.0029	<.005	<.005	<.005
3+4 methylphenol									
Methyl Ethyl Ketone	<	<.005	<.0005	.0025 J	<.005	<.005	<.005	<.005	<.005
Arsenic	<	<.5	<.0068	<.01	<.5	<.01	<.2 D	<.01	<.01
Lead	0.0051	<.25	<.0013	<.4	<.25	0.0085	0.031	<.005	<.005
Barium	0.829	<10	1.32	4.9	1.34 J	1.13	2.77	2.07	0.619
Xylene	<	<.005	<.0005	<.002	<.003	<.003	<.003	<.003	<.003
Zinc	0.0358	<1	<.0012	<.02	<1	<.02	<.02	<.02	<.02
Beryllium	0.0022 J	<.25	<.00057	.0036 J	<.25	<.005	<.005	0.00034 J	0.00013
Nickel	<	<2	<.00088	<.04	<2	<.04	<.04	<.04	0.0478
Selenium	<	<.5	<.0062	<.01	<.5	<.01	<.2 D	0.0135	<.01
Thallium	<	<.5	<.0036	<.01	<.5	0.0085 J	0.0798	<.01	<.01
Silver	B <	<.5	<.0036	<.01	<.5	<.01	0.0048 J	0.0035 J	0.0047
Toluene	<	<.005	<.0005	<.001	<.001	<.001	<.001	<.001	<.001
Carbon Disulfide	<	<.005	<.0005	<.001	<.001	<.001	<.001	<.001	<.001
methylene chloride	<	<.005	<.0005	<.001	<.001	<.01	<.001	<.001	<.001
chromium	<	<.5	<.0016	<.01	<.5	<.01	0.0071 J	0.0074 J	0.0489
Antimony	<	<3	<.003	<.06	<3	<.06	0.06	<.06	<.06
4-Methyl-2-pentanone	J <	<.005	<.0005	<.005	<.005	<.005	<.005	<.005	<.005
Sulfide	<20	<2	<.61	9.6	<2	<.002	8	<2	1.6
1,4 dioxane					0.21 JH	0.66	21	18.6	0.38

perfluorobutanoic acid (PFBA)	180	B	73		
perfluoropentanoic acid (PFPeA)	120		43		
perfluorohexanoic acid(PFHxA)	160		60		
perfluoroheptanoic acid	53		25		
perfluorooctanoic acid(PFOA)	150		44		
perfluorononanoic acid(PFNA)	17		7.3		
perfluorodecanoic acid (PFDA)	5.4	J	2.1		
perfluoroundecanoic acid(PFUnA)	ND	ND			
perfluorododecanoic acid(PFDoA)	ND	ND			
perfluorotridecanoic acid(PFTriA)	ND	ND			
perfluorotetradecanoic acid(PFTeA)	ND	ND			
perfluorobutanesulfonic acid(PFBS)	76		51		
perfluorohexanesulfonic acid(PFHxS)	69	B	13	B	
perfluoroheptanesulfonic acid(PFHpS)	2.8	J	0.42	J	
perfluorooctanesulfonic acid(PFOS)	98		32		
perfluorodecanesulfonic acid(PFDS)	ND	ND			
perfluorooctanesulfonamide(FOSA)	ND		0.76	JB	
N-methylperfluorooctanesulfonamidoaceti	ND	ND			
N-ethylperfluorooctanesulfonamidoacetic	ND	ND			
6:2FTS	ND	ND			
8:2FTS	ND	ND			

TOBSWMF's Leachate Monitoring Program

Southern Ashfill

June 2020

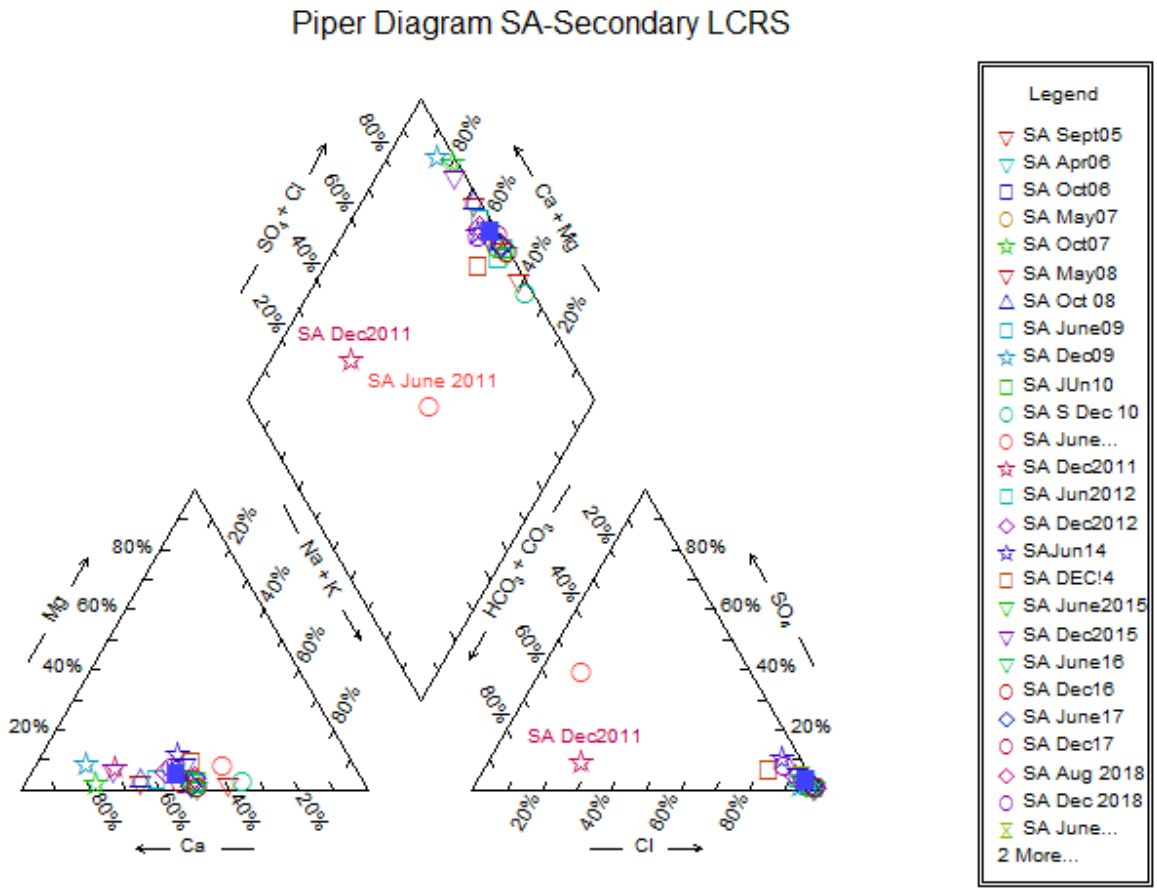
Pursuant to NYSDEC 6NYCRR Part 363 (formerly part 360) requirements for the operation of the Town of Babylon's Southern Ashfill (SA), leachate from that facility's Secondary Leachate Collection and Recovery System (SLCRS) was sampled in accordance with the procedures detailed in the TOBSWMF's SAP (TOBDEC, 2018). The SA facility requires semiannual sampling of leachate for baseline parameters from the facility's SLCRS. For 2018 NYSDEC required sampling at Babylon's leachate facilities to be expanded to include 1,4 dioxane. For December 2019 Babylon expanded sampling to include PFAS/PFOA's at the SA facility. This report includes the laboratory report from Pace Analytical Services, a Piper diagram, a spreadsheet summarizing parameters of concern dating back to 1994, and a discussion of the results.

The attached spreadsheet provides a historical overview of leachate composition at the SA and any exeedance of the MCL's. The following bullets summarize any findings from this round of sampling at the SA and provide follow-up analysis or discussion when recommended from previous reports.

- Leachate indicators at the SA have been observed to be variable. Data from the June 2020 LMP at the SA fall within the range of historical data.
- A Piper diagram that includes SA data from June 2020 conforms to its established pattern.
- Lead (.011 mg/l) was observed at the SA for June 2020. Low values of lead have been observed intermittently at the SA.
- Manganese was observed below its MCL at 6.67 mg/l for June 2020. Manganese had exceeded its MCL (8 mg/l) in June 2019. The only other sampling event where manganese exceeded its MCL at the SA facility was December 2013.
- Barium was observed at 0.264 mg/l at the SA for June 2020.
- Other metals observed at the SA at values above their reporting limit and below their MCL (where one has been established) for June 2020 include aluminum (.531 mg/l), boron (.375mg/l), chromium (.0342 mg/l), calcium (1550 mg/l), copper (.0374 mg/l), iron (21.5 mg/l), magnesium (90.6 mg/l), potassium (418 mg/l), sodium (1200 mg/l), and zinc (.0762 mg/l).
- No organics from the baseline parameters list was detected at the SA facility for June 2020.
- 1,4 dioxane was detected at 0.9 ug/l at the SA for June 2020.

- Mercury was not detected at the SA for June 2020.
- pH measured in the field was 8.12 at the SA facility.
- Sulfide was not detected above its mdl at the SA facility for June 2020.
- PFAS/PFOA's results are attached in appendix A.

The next round of sampling is scheduled for December 2020.



Note: Solid square indicates June 2020 data.

SA PARAMETERS	03 MCL	Aug '03	Mar '04	Sept '04	Mar '05	Sept '05	Apr'06	Oct '06	May'07	Oct'07	May_08	Oct_08	June_09
TKN	na	16.9000		21.1000	30.2000	22.3000	22.9000	19.8000	13.3000	14.2000	15.5000	20.0000	15.0000
TDS	na	18800.0000	9000.0000	21000.0000	16000.0000		7000.0000	19700.0000	15700.0000	23700.0000	17000.0000	21700.0000	14200.0000
Phenols	na	0.0170			0.0061				0.1170			0.0148	0.0103
Chloride	na	7000.0000	4750.0000	11200.0000	9250.0000	13500.0000	14700.0000	15400.0000	8400.0000	14000.0000	9500.0000	11000.0000	7500.0000
Sulfide	na												
Iron	na	5.8900	0.0448	9.4100	7.9100	5.0600	11.6000	227.0000	6.0500	2.4700	2.3000	2.2300	9.7300
Manganese	8 mg/l	5.6300	3.0900	4.6000	3.7400	4.3400	2.9100	6.7100	4.3700	2.4200	2.8600		2.37
Phenol	1.5 mg/l												
Xylene	2.5 mg/l *	1.5000											
1,2,4 Trimethylbenzene	na												
SULFATE	na	291.0000				56.0000	80.5000	51.3000	359.0000	314.0000	204.0000	126.0000	87.6000
Arsenic	.4 mg/l	0.0034						0.2630					
Acetone	na ppm	49.5000											
pH	5 - 12.5		4.0000	6.0200		5.9800	6.0900	6.3200	6.7000	6.1500	5.8900	5.7600	6.1800
Aluminum	na	0.0130	0.0415	0.0170 J	0.0475	0.0998	0.0647	6.1200	0.0620	0.0729	0.0293	0.0341	0.0962
Barium	8 mg/l	0.9800	0.6440	1.9500	1.9400	4.5100	1.6400	2.5100	1.1500	1.4500	1.1400	1.2100	1.5700
Lead		0.0017	0.0075			0.0180		0.2510	0.0040				
Zinc		0.0190		0.0140	0.0053 J		0.0136	0.8450		0.0225	0.0242	0.0368	0.0424
Toluene	2.5 mg/l *												
Cadmium	.8 mg/l	0.0003											
Vanadium		0.0005						0.0596					
Tin													
Antimony		0.0210											
Copper	1.6 mg/l	0.0029						0.1140			0.00515 J	0.0101	
Selenium	.4 mg/l	0.0270		0.0475									
Silver	.4 mg/l	0.0010								0.0252			
Berylium		0.0012											
Chromium	8 mg/l	0.0027			0.0084 J	0.0111 J		0.0426					
Nickel	8 mg/l	0.0035						0.2470					
Thallium		0.0850						0.0343				0.0202	
Carbon disulfide								0.004					
Methylene Chloride	2.5 mg/l							0.0180 B	0.0047 B		0.0058 B		0.0058
Alkalinity		320.0000			299	208	210	172.0000	284	193	259	230	290
Ammonia		10.7000	4.65	18.5	23.2	16.4	16.3	10.4000	9.75	24.8	0	14.9	13.2
Hardness		5710.0000	2340	7290	6190	9790	9570	6180.0000	5740	8110	595	5810	4450
1,4 dioxane	ug/l												

SA PARAMETERS	03 MCL	Aug '03	Mar '04	Sept '04	Mar '05	Sept '05	Apr'06	Oct '06	May'07	Oct'07	May_08	Oct_08	June_09
		Aug_03	Mar_04	Sept_04	Mar_05	Sept_05	Apr_06	Oct_06	May_07	Oct_07	May_08	Oct_08	June_09
Chloride		7000.0000	4750.0000	11200.0000	9250.0000	13500.0000	14700.0000	15400.0000	8400.0000	14000.0000	9500.0000	11000.0000	7500.0000
Sulfate		291.0000	388	120	99.2	56.0000	80.5000	51.3000	359.0000	314.0000	204.0000	126.0000	87.6000
Alkalinity		320			299	208	210	172	284	193	259	230	290
Na		2090.0000	284	1340	1390	5360	3170	2050	1920.0000	40.1000	878.0000	831.0000	739.0000
K		699	462	1300	1240	2070	1770	1260	836.0000	1590.0000	1430.0000	896.0000	828.0000
Ca		2090.0000	788	2770	2340	3760	3750	2400	2170.0000	3180.0000	2870.0000	2250.0000	1690.0000
Mg		119	91.3	86.5	85.1	97.3	49	45.9	76.3000	39.8000	57.3000	48.3000	53.2000
pH			4	6.0200		5.9800	6.0900	6.3200	6.7000	6.1500	5.8900	5.7600	6.1800
perfluorobutanoic acid (PFBA)													
perfluoropentanoic acid (PFPeA)													
perfluorohexanoic acid(PFHxA)													
perfluoroheptanoic acid													
perfluorooctanoic acid(PFOA)													
perfluorononanoic acid(PFNA)													
perfluorodecanoic acid (PFDA)													
perfluoroundecanoic acid(PFUnA)													
perfluorododecanoic acid(PFDoA)													
perfluorotridecanoic acid(PFTriA)													
perfluorotetradecanoic acid(PFTeA)													
perfluorobutanesulfonic acid(PFBS)													
perfluorohexanesulfonic acid(PFHxS)													
perfluoroheptanesulfonic acid(PFHpS)													
perfluorooctanesulfonic acid(PFOS)													
perfluorodecanesulfonic acid(PFDS)													
perfluorooctanesulfonamide(FOSA)													
N-methylperfluorooctanesulfonamidoacetic acit(NMeFOSAA)													
N-ethylperfluorooctanesulfonamidoacetic acit(NEtFOSAA)													
6:2FTS													
8:2FTS													

SA PARAMETERS	03 MCL	Dec_09	10-Jun	DEC_10	June_11	11-Dec	12-Jun	DEC_12	June_13	Dec_13	14-Jun	14-Dec	June_15
TKN	na	16	8.6000	2.8000	1.4000	1.8000	39.0000	2.4600	3.3600 D	58.0000 D	1.9000 D	2.0000	54.9000
TDS	na	9560	13000.0000	9600.0000	1500.0000	320.0000	9100.0000	13800.0000	19500.0000 D	9000.0000 D	9230.0000	4520.0000	91100.0000
Phenols	na	<.01	<.01	0.003	<.001	<	<	<.05	<.005	0.0212	<.005	<.005	0.008
Chloride	na	4900	21000.0000	6300.0000	110.0000	55.0000	6200.0000	34300.0000	3780.0000 D	44700.0000 D	3140.0000 D	1840.0000 D	33600.0000
Sulfide	na											<2	<2
Iron	na	3.12	0.6700	1.8000	1.0000	26.0000	20.0000	3.4900	8.0100 B	21.2000	2.5900	1.9300	1.1500
Manganese	8 mg/l	1.61	2.6	2.7	0.33	2.2	5.7	2.73	2.72	**12.8**	5.5	2.49	0.45
Phenol	1.5 mg/l												
Xylene	2.5 mg/l *					<		<	<	<	<	U	<
1,2,4 Trimethylbenzene	na					<		<		XXXXXX			
SULFATE	na	77.7	130.0000	240.0000	450.0000	25.0000	320.0000	151.0000	5340.0000	11	515.0000	190.0000 D	124.0000
Arsenic	.4 mg/l					<	<	<.01	<.28	0.0051 B	<	U	U
Acetone	na ppm					<	<	0.001	0.003 J	0.001 J	<	U	0.041
pH	5 - 12.5	6.91	7.2000	6.8000	8.2000	7.8000	7.1000	7.1000		TEMP	4.9100	6.9500	7.1800
Aluminum	na	0.0891	<.05	0.06	0.26	1	11	<.2	<.95	0.0228 B	<	0.332	0.0512 B
Barium	8 mg/l	1.3	0.9800	0.5800	0.1100	0.0850	0.4900	0.8050	0.4900 B	4.5600	<	U	2.8300
Lead		.00427J	<	<	<	<	0.13	0.0078	<.1	0.0242	0.0086	U	0.0018 B
Zinc		0.0853	<	<	0.1000	0.6200	1.6000	0.0240	<.03	0.1590	<	0.1440	0.0234
Toluene	2.5 mg/l *			<	<	<	<	<	<	<	<	U	U
Cadmium	.8 mg/l		<	<	<	<	<	<.005	<.01	0.0016 B	<	U	U
Vanadium			<	<	<	<	<	<.05	0.03 B	<	<	U	0.0029 B
Tin													
Antimony			<	<	<	<	<	<.06	<.12	0.0067 B	<	U	0.0071 B
Copper	1.6 mg/l	0.0443	<	<	<	<	<	<.025	<.04	0.0082 B	<	0.0269	U
Selenium	.4 mg/l		<	<	<	<	<	<.005	<.23	<	<	U	U
Silver	.4 mg/l		<	<	<	<	<	<.01	<.02	0.0027 B	<	U	U
Berylium			<	<	<	<	<	<.005	<.01	<	<	U	U
Chromium	8 mg/l		<	<	<	<	<	<.01	0.07 B	0.003 B	<	U	0.0021 B
Nickel	8 mg/l		<	<	<	<	<	<.04	<.03	<	<	U	0.0018 B
Thallium			<	<	<	<	<	<.01	<.19	0.0068 B	0.0133	U	U
Carbon disulfide			<	<	<	<	<	<	<	<	<	U	U
Methylene Chloride	2.5 mg/l	.0042B	<	<	<	<	<	<	<	<	<	U	U
Alkalinity		318	230	200	590	180	360	209	275 D	202 D	273 D	338 D	102
Ammonia		13.1	7.6	1.8	0.6	0.8	14	1.08	2.72	60 D	1.99	1.89	53.8 D
Hardness		1910	5300	5100	570	220	2800	4500	4100 D	27000 D	3000 D	3100 D	20400 D
1,4 dioxane	ug/l												

SA PARAMETERS	03 MCL	Dec_09	10-Jun	DEC_10	June_11	11-Dec	12-Jun	DEC_12	June_13	Dec_13	14-Jun	14-Dec	June_15
		Dec_09	Jun_10	Dec_10	Jun_11	Dec_11	June_12	Dec_12			June_14	Dec_14	Jun_15
Chloride		4900					6200	34300			3140	1840	
Sulfate		77.7					320	151			515	190	
Alkalinity		318					360	209			273	338	
Na		40.3	2000	1900	300	27	1000	1580			782	479	8160
K		198	640	3500	21	9.2	470	550			232	192	3310
Ca		693	2000	1900	190	81	1100	1640			995	533	8440
Mg		43.7					20	75.9			141	59.7	19
pH		6.91					7.1	7.1			4.91	6.95	7.18
perfluorobutanoic acid (PFBA)													
perfluoropentanoic acid (PFPeA)													
perfluorohexanoic acid(PFHxA)													
perfluoroheptanoic acid													
perfluorooctanoic acid(PFOA)													
perfluorononanoic acid(PFNA)													
perfluorodecanoic acid (PFDA)													
perfluoroundecanoic acid(PFUnA)													
perfluorododecanoic acid(PFDoA)													
perfluorotridecanoic acid(PFTriA)													
perfluorotetradecanoic acid(PFTeA)													
perfluorobutanesulfonic acid(PFBS)													
perfluorohexanesulfonic acid(PFHxS)													
perfluoroheptanesulfonic acid(PFHpS)													
perfluorooctanesulfonic acid(PFOS)													
perfluorodecanesulfonic acid(PFDS)													
perfluorooctanesulfonamide(FOSA)													
N-methylperfluorooctanesulfonamidoacetic acit(NMeFOSAA)													
N-ethylperfluorooctanesulfonamidoacetic acit(NEtFOSAA)													
6:2FTS													
8:2FTS													

SA PARAMETERS	03 MCL	Dec_15	Jun_16	Dec_16	17-Jun	Dec_17	Aug_18	Dec_18	June_19	Dec_19	Jun_20
TKN	na	9.4700 D	3.8800	43.2000	28.4000	24.2000	0.5800	1.8000	17.0000 D	2.9	1.2
TDS	na	16600.0000	12.6000	39900	43000.0000	33200.0000	6130.0000	6300.0000	9360.0000	6800	8290
Phenols	na	<.005	<.005	0.277	0.0124	0.0103	0.0569 J	0.0028 J	<.01	0.0092	<.005
Chloride	na	6990.0000 D	########	31100.0000	15400	57900.0000	3630.0000	2330	5830 D	5470	6860
Sulfide	na		<20	<2	<.61	<2	<2	<2	6.4	<2	<2
Iron	na	17.8000	2.3500	<5	6.86	11.7000	0.4540	12.8	210	2.85	21.5
Manganese	8 mg/l	4.97	1.87	<.5	3.42	3.86	2.09	1.09	8.44	5.31	6.67
Phenol	1.5 mg/l										
Xylene	2.5 mg/l *		<	<.005	<.0005	<.002	<.003	<.003	<.003	<.003	<.003
1,2,4 Trimethylbenzene	na										
SULFATE	na	263.0000 D	182.0000 D	246	221.0000	423.0000	251.0000	267.0000 D	361.0000 D	427	322
Arsenic	.4 mg/l	0.0048 B	<.01	<.5	<.0068	<.01	<.01	<.01	0.0599	<.01	<.01
Acetone	na ppm	0.002 J	<	0.048	0.0755	0.0264	0.0032 J	<.005	0.0016 J	<.005	<.005
pH	5 - 12.5	7.0100	6.5300	7.21/6.5	6.18	6.95	8.08	8.05	8	7.24	8.12
Aluminum	na	0.0527 B	<	<10	<.0134	.0823 J	0.0506 J	0.564	13.5	<.2	0.531
Barium	8 mg/l	0.6040	0.4350	<10	1.62	1.08	0.205	0.17 J	0.481	0.158 J	0.264
Lead		0.0042	0.0023 J	<.25	<.0013	0.0058	0.0028 J	0.013	0.279	<.005	0.011
Zinc		0.0109 B	0.1060	<1	0.0352	.0163 J	0.0097 J	0.0652	1.87	0.0064 J	0.0762
Toluene	2.5 mg/l *		<	<.005	<.0005	<.001	<.001	<.001	<.001	<.001	<.001
Cadmium	.8 mg/l	0.0011 B	<	<.125	<.000063	<.0025	<.0025	<.0025	0.0125	<.0025	<.0025
Vanadium		<	<	<2.5	<.0008	<.05	<.05	0.0016 J	0.0226 J	<.05	<.05
Tin											
Antimony		<	<	<3	<.003	<.06	<.06	<.06	0.0765	<.06	<.06
Copper	1.6 mg/l	0.0073 B	0.0026 J	<1.25	<.0025	.011 J	0.0042 J	0.0185 J	0.36	0.0087 J	0.0374
Selenium	.4 mg/l	0.0026 B	<	<.5	<.0062	<.01	<.01	<.01	<.01	<.01	<.01
Silver	.4 mg/l	0.0035 B	<	<.5	<.0036	<.01	<.01	<.01	0.0043 J	0.0038 J	0.0028
Berylium		<	0.0009 J	<.25	0.0051	.0018 J	<.005	<.05	<.005	0.00022 J	0.00011
Chromium	8 mg/l	0.0016 B	0.0414	<.5	<.0016	<.01	0.003 J	0.0067	0.0989	0.0156	0.0342
Nickel	8 mg/l	0.0054 B	0.0243 J	<2	<.00088	<.04	<.04	<.04	0.069	<.04	0.0352
Thallium		0.0244	<	<.5	<.0036	.0025 J	<.01	<.01	0.0276	0.012	<.01
Carbon disulfide			<	<.005	<.0005	<.001	<.001	<.001	<.001	<.001	<.001
Methylene Chloride	2.5 mg/l		<	<.005	<.0005	<.001	<.001	<.001	<.001	<.001	<.001
Alkalinity		261 D	178	151	206	149	225	223	183	268	199
Ammonia		1.28	4.39 D	57.1000	11.8	26.9	0.05 J	0.75	4.7	2.9	0.23
Hardness		4700 D	3400 D	16400.0000	11800	9600	2500	2200	4000	4000	10000
1,4 dioxane	ug/l						0.37 J+	0.75	0.88	<.2	0.9

SA PARAMETERS	03 MCL	Dec_15	Jun_16	Dec_16	17-Jun	Dec_17	Aug_18	Dec_18	June_19	Dec_19	Jun_20
		Dec_15									
Chloride											
Sulfate											
Alkalinity											
Na		329	1170	1494.3944	4180	3360	560	538	1330	843	1200
K		640	520	1087.2889	1770	1750	305	293	486	324	418
Ca		1820	1410	2053.8333	4660	4420	914	807	1760	991	1550
Mg		99.5	63.1	70.7500	70.6	83.7	56.4	64.2	103	105	90.6
pH		7.01	7.01		6.18	6.95	8.08	8.05	8	7.24	8.12
perfluorobutanoic acid (PFBA)										70 B	76
perfluoropentanoic acid (PFPeA)										110	82
perfluorohexanoic acid(PFHxA)										130	130
perfluoroheptanoic acid										52	44
perfluorooctanoic acid(PFOA)										130	110
perfluorononanoic acid(PFNA)										11	11
perfluorodecanoic acid (PFDA)										15	19
perfluoroundecanoic acid(PFUnA)										ND	ND
perfluorododecanoic acid(PFDoA)										ND	0.95 J
perfluorotridecanoic acid(PFTriA)										ND	ND
perfluorotetradecanoic acid(PFTeA)										ND	ND
perfluorobutanesulfonic acid(PFBS)										23	36
perfluorohexanesulfonic acid(PFHxS)										36 B	46 B
perfluoroheptanesulfonic acid(PFHpS)										ND	2.8
perfluorooctanesulfonic acid(PFOS)										51	110
perfluorodecanesulfonic acid(PFDS)										ND	ND
perfluorooctanesulfonamide(FOSA)										ND	0.38 JB
N-methylperfluorooctanesulfonamidoacetic acit(NMeFOSAA)										ND	ND
N-ethylperfluorooctanesulfonamidoacetic acit(NEtFOSAA)										ND	ND
6:2FTS										6.3 J	11 J
8:2FTS										ND	ND

TOBSWMF's Leachate Monitoring Program

New Northern U Ashfill

June 2020

Pursuant to NYSDEC 6NYCRR Part 363 (formerly part 360) requirements for the operation of the Town of Babylon's New Northern U Ashfill (NNU), leachate from the NNU Primary and Secondary Leachate Collection and Recovery System (PLCRS and SLCRS) were sampled in accordance with the procedures detailed in the TOBSWMF's Updated SAP (TOBDEC, 2018). These facilities are sampled semi-annually for baseline parameters as part of Babylon's Leachate Monitoring Program (LMP). For 2018 the NYSDEC required that sampling of the Babylon leachate facilities be expanded to include 1,4 dioxane. For December 2019 Babylon began sampling for PFAS/PFOA's at the NNU facilities. This document includes the laboratory report from Pace Analytical Services, Inc., a spreadsheet summarizing parameters of concern at the facility, a Piper diagram of leachate from each liner system, and a discussion of the results.

The NNU which began accepting ash in 2003 sits atop the ONU, separated by a double liner system, with each layer consisting of a bentonite blanket, liner and geocomposite. The NNU SLCRS is also separated from the ONU by the ONU cap. Both systems serve as near impermeable barriers. The elevation of the NNU system (approximately 25-30 feet above the water table) prevents groundwater infiltration from being considered a source of leachate to the system.

The attached spreadsheet provides a historical overview of leachate composition at the NNU, highlighting any exceedance of an MCL from the facility's PLCRS and SLCRS. The following discussion summarizes any noteworthy findings from the June 2020 sampling and provides follow-up analysis or discussion wherever necessary or recommended in previous reports.

- For the June 2020 LMP pH was 6.66 at the NNU SLCRS and 6.96 at the NNU PLCRS.
- The overall leachate characteristics of the NNU PLCRS and SLCRS largely conform to the historical dataset for this facility.
- Arsenic and lead were not observed above their reporting limit at the NNU SLCRS and NNU PLCRS for June 2020. Low values of arsenic and lead have been intermittently observed at this facility.
- Mercury was not observed above its mdl at the NNU PLCRS or NNU SLCRS for June 2020.
- Organics from the baseline parameters list observed at the NNU for June 2020 were limited to low concentrations of acetone, MEK, 4 methyl 2 pentanone, iodomethane and carbon disulfide. Acetone was observed at .375 mg/l at the NNU PLCRS and .333

mg/l at the NNU SLCRS. Low concentrations of acetone have been observed at this facility since June 2010.

MEK was detected at the NNU PLCRS at .0412 mg/l and .0406 mg/l at NNU-SLCRS during June 2020 sampling. Trace values of MEK have been intermittently observed at this facility.

4 methyl 2pentanone was observed at the NNUP (.005mg/l) and .0056 mg/l at the NNUS. Trace values of 4 methyl 2 pentanone have been observed intermittently at the NNU facility.

Iodomethane was observed at .0043 mg/l at the NNU PLCRS and .0043 mg/l at the NNU SLCRS. Carbon disulfide was not observed at the NNU PLCRS, and .0018 mg/l at the NNU SLCRS.

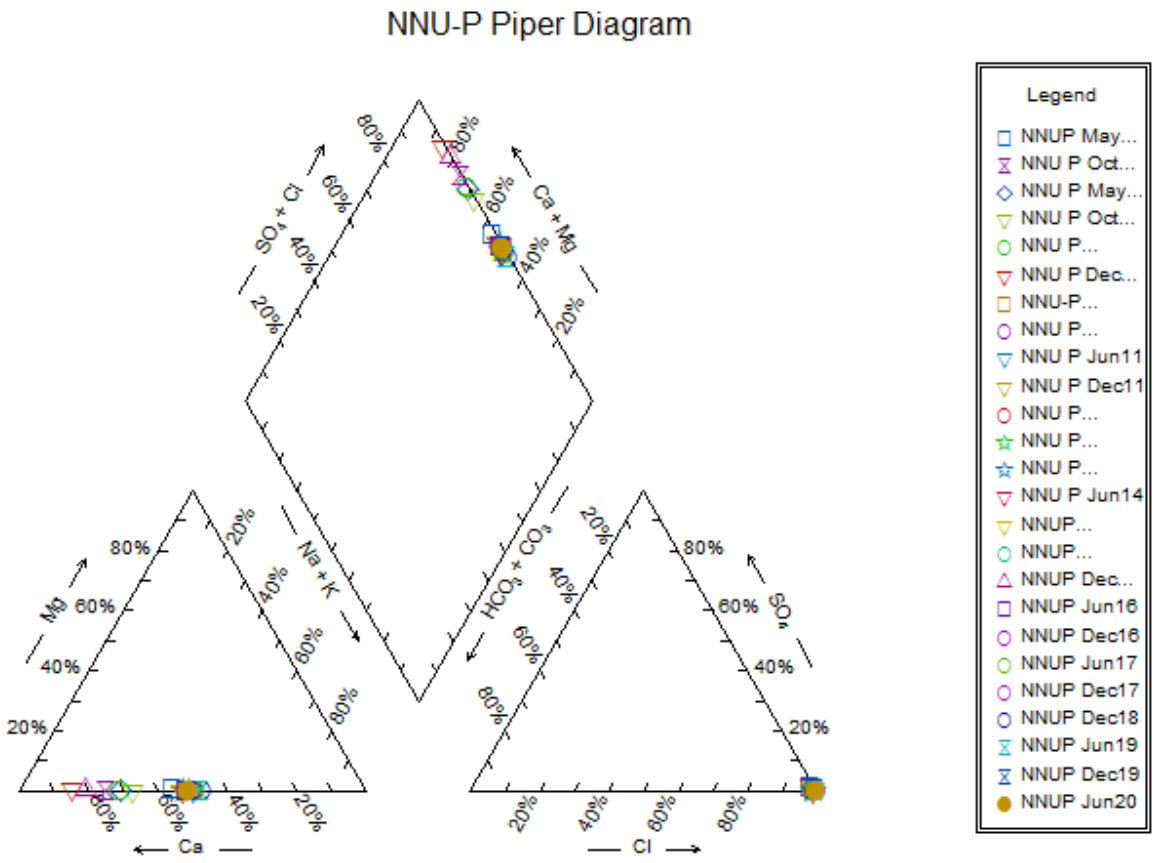
TTO as defined on the Town of Babylon discharge certificate issued by Suffolk County Department of Public Works is <.01 mg/l at the NNU facility.

Total baseline organics for the NNU PLCRS was .4257 mg/l and .3853 mg/l at the NNU SLCRS.

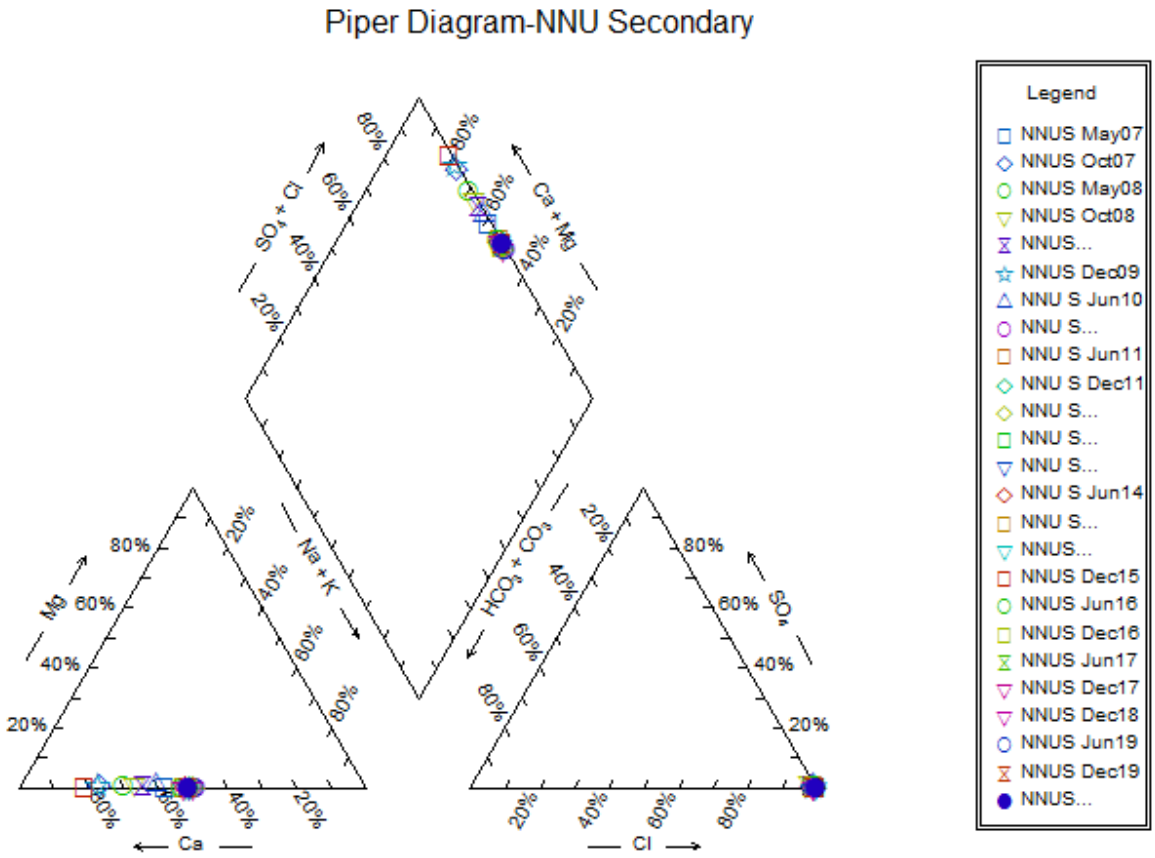
- 1,4 dioxane was observed at 2.9 ug/l at the NNU PLCRS and 2.7 ug/l at the NNU SLCRS.
- Barium was reported below its MCL at the NNU PLCRS (2.24 mg/l) and NNU SLCRS (2.3 mg/l) for June 2020. Barium has been observed exceeding its MCL at the NNU PLCRS 5 times over 34 sampling events through the life of the facility. Barium has exceeded its MCL at the NNU SLCRS 3 times over 34 sampling events through the life of the facility. The last exceedance for barium at each of the facilities was December 2012.
- Other metals observed above their reporting limit and below their MCL at the NNU PLCRS for June 2020 include boron (4.65 mg/l), chromium (.237 mg/l), calcium (11300 mg/l), iron (.368 mg/l), magnesium (2.0 mg/l), manganese (.335 mg/l), potassium (4040 mg/l), sodium (10100 mg/l) and selenium (.052 mg/l), thallium (.0528mg/l) and zinc (.12 mg/l).
- Other metals observed above their mdl and below their MCL at the NNU SLCRS for June 2020 include boron (4.81 mg/l), calcium (11900 mg/l), chromium (.23 mg/l), copper (.089 mg/l), iron (.108mg/l), magnesium (2.02 mg/l), manganese (.322 mg/l), potassium (4300 mg/l), sodium (10600 mg/l) and thallium (.054).
- Sulfide exceeded its MCL at the NNUS (12.87 mg/l) and NNUP (17.67 mg/l) for the June 2020 LMP. Sulfide has exceeded its MCL at the NNUP for six of nine sampling rounds since June 2016. At the NNUS sulfide has exceeded its MCL since June 2017.

- BOD was observed below its MCL (300 mg/l) at the NNUP and NNUS. BOD has intermittently exceeded its MCL at these facilities.
- A Piper diagram was prepared with the June 2020 data added to the historical dataset. The geochemical fingerprint for the NNU facilities is unchanged.
- PFAS/PFOA's results are attached in appendix A.

The next round of sampling is scheduled for December 2020.



Note: solid circle represents June 2020 data.



Note: solid circle represents June 2020 data.

NNUP PARAMETERS	95 MCL	03 MCL	Aug_03	Mar_04	Sept_04	Mar_05	Sept_05	Apr_06	Oct_06	May_07	Oct_07	May_08	Oct_08	June_09	Dec_09	Jun_10	DEC_10	Jun_2011	DEC_11	June_12
CHLORIDE	500mg/l	na	24800	6400	36100	31600	32100	18800	32600	17500	33000	30000	25300	34500	27800	51000	45000	46000	42000	55000
SULFATE	500mg/l	na		357	92.3	11.3	1.51	344	12.4	323	32.2	85.5	147	104	600	70	<	85	50	280
Alkalinity										211	130	169	128	143	157	360	230	280	220	240
Na										3080	38.6	925	1800	1160	33.9	10000	9000	9200	8700	12000
K										2410	5310	3930	3410	2960	434	6600	6000	6000	5800	7400
Ca										4930	8190	6640	6660	6150	1380	12000	11000	11000	11000	14000
Mg										14.3	0.509	0.407	0.86	1.03	3.6	3.9	6.1	8.4	68	8.6
pH	6.5-8.5	5 - 12.5	5.34	7.89	8.96	9.07	8.87	8.91	8.78	7.12	8.37	9.01	9.2	8.29	6.95	6.6	6.57	6.6	6.7	6
TDS	1000 mg/l	na	30700	11000	54000	46000	58000	11600	53700	30900	57000	52400	42700	50500	43300	81000	69000	88000	68000	94000
PHENOL	0.002mg/l	1.5 mg/l	0.01																	
PHENOLS				1.52		0.02	0.02		0.09	0.26		0.0888	0.0128		0.0935	0.19	0.066	0.16	0.16	0.1
IRON	0.6mg/l	na	3.64	0.09	0.08	1.81	0.1	0.13	0.04	1.41	0.02	0.0289	0.0642	0.217	**5.27**	0.58	2.2	0.54	0.9	9.3
MANGANESE	0.6mg/l	8 mg/l	19.7	0.06	0.82	0.69	0.26	0.11	0.09	0.72	0.14	0.0554	0.0848	0.168	0.528	2.1	1.1	0.88	0.94	4.6
TKN	10 mg/l	na	18.2	5.2	36.4	70.2	88.4	11.4	42.2	14.2	42.9	83.8	77.8	66.2	52.4	78	87	78	130	98
ALUMINUM	2mg/l	na		0.48	0.69	0.45	0.83	0.94	0.93	0.28	0.98	1.28	0.54	0.478	2.94	0.31	0.52	0.49	<	1.8
ACETONE	50 mg/l	50 mg/l	38.9													0.15	0.12	0.16	0.22	0.34
Methyl Ethyl Ketone	5000 ppm	na														<	0.018	<	<	0.15
Arsenic	50 ppb	400 ppb					20.9J									65	<	<	<	<
Lead	50 ppb	400 ppb		106	15.6	333	8.97J		0.06	.01J					193	<	<	<	<	<
Barium		8 mg/l	3.52	1.31	9.82	11.5	18	3.1	7.11	2.7	6.6	4.96	5.34	4.1	2.73	0.64	7	4.5	**37**	5.7
Cadmium		.8mg/l			.013J	0.01		73.1		.01J					0.0586	<	<	<	<	<
Copper		1.6		0.16		0.05			.01J	0.1		0.00314J	0.0128	.0122J	0.652	0.19	<	<	<	0.1
Selenium		.4mg/l	0.05			0.05										<	<	<	<	<
Zinc		5 mg/l	0.01	0.12		0.32	0.0097		0.19	0.19	0.04	0.0228	0.0341	0.0505	1.54	0.18	<	0.22	0.34	0.39
Carbon disulfide		mg/l				0.0076										0.007	<	0.016	0.024	0.003
BOD		300 mg/l				136			220	28.6	129	175	67	**630**	240	280		250	230	**310**
Antimony			0.01												0.0802	0.03	<	<	<	<
Beryillium																<	<	<	<	<
Chromium		8 mg/l	0.01				0.0063							.0144J	0.0344	<	<	<	<	0.38
Nickel		8 mg/l	0.01								.01J	.01J	0.0094	.0103J	0.0247	<	<	<	<	0.27
Thallium			0.1									0.308	0.0492	0.0358		<	<	<	<	<
Vanadium					.008J		.00575J									<	<	<	<	<
methylene chloride		2.5 mg/l							.02B	2.6B		.011B	11B	7B		<	<	<	<	<
Toluene											.64J					<	<	<	<	<
Mercury															0.0005	<	<	<	<	<
4-Methyl-2-pentanone																				
Iodomethane																				
sulfide mg/l		12 mg/l																		
1,4 Dioxane		ug/l																		
perfluorobutanoic acid (PFBA)		ng/l																		
perfluoropentanoic acid (PFPeA)																				
perfluorohexanoic acid(PFHxA)																				
perfluoroheptanoic acid																				
perfluorooctanoic acid(PFOA)																				
perfluorononanoic acid(PFNA)																				
perfluorodecanoic acid (PFDA)																				

NNUP PARAMETERS	95 MCL	03 MCL	Aug_03	Mar_04	Sept_04	Mar_05	Sept_05	Apr_06	Oct_06	May_07	Oct_07	May_08	Oct_08	June_09	Dec_09	Jun_10	DEC_10	Jun_2011	DEC_11	June_12
perfluoroundecanoic acid(PFUnA)																				
perfluorododecanoic acid(PFDoA)																				
perfluorotridecanoic acid(PFTriA)																				
perfluorotetradecanoic acid(PFTeA)																				
perfluorobutanesulfonic acid(PFBS)																				
perfluorohexanesulfonic acid(PFHxS)																				
perfluoroheptanesulfonic acid(PFHpS)																				
perfluorooctanesulfonic acid(PFOS)																				
perfluorodecanesulfonic acid(PFDS)																				
perfluorooctanesulfonamide(FOSA)																				
N-methylperfluorooctanesulfonamidoacetic acit(NMeFOSAA)																				
N-ethylperfluorooctanesulfonamidoacetic acit(NEtFOSAA)																				
6:2FTS																				
8:2FTS																				

NNUP PARAMETERS	Dec_12	June_13	Dec_13	Jun_14	DEC_14	June_15	Dec_15	Jun_16	Dec_16	June_17	Dec_17	Aug_18	Dec_18	June_19	Dec_19
CHLORIDE	57800	56300	65100 D	55500 D	35300 D	59100	63300	49100	54500	43600	214000	<2	44400 D	44200	39100
SULFATE	<5	**4730**	6.82	<5	256 D	<5 U	<5	<5	<5	11.4	18.3	0.68 J	15.5	15.6	413
Alkalinity	270	255	269 D	276 D	73.5	258 D	333	285	272	245	181	296	154	327	139
Na	17200	10900	13400	15600 D	8740 D	14400	647	14400	13600	13700	13400	13200	13400 D	12600 D	7250
K	8710	5220	6180	7450 D	4340 D	6730	6910	5800	5820	5510	5190	4970	5320 D	4900 D	2980
Ca	19800	13400	16400	19100 D	11000 D	16600	17000	16600	15700	14300	15200	15100	12900 D	12400 D	8200
Mg	<5	20.5	7.24	13.4	12.2	6.62	4.75	6.58	<10	3.98	2.03	<10	4.08	3.49	4.11
pH	6.15		6.45	3.69	6.83	6.23	5.83	6.31	6.38	6.09	7.17	6.78	6.85	7.77	8.49
TDS	111000	178000	148 D	114000	74600	175000	153000	139000	88500	125000	114000	86700	80900	79800	44900
PHENOL															
PHENOLS	0.089	0.051	0.239 D	0.12	0.096 D	0.0664 D	0.284 D	0.352 D	0.339	0.0401	0.16	0.288	0.119	0.099	0.0543
IRON	0.368	0.77	0.143	0.176	0.36	0.105	0.942	0.296	<5	0.106	.0131 J	0.585 J	0.184	0.452	0.19
MANGANESE	1.01	1.34	0.887	1.08	0.674	0.734	0.617	0.46	0.896	0.332	0.289	0.715	0.0761	0.136	0.203
TKN	72.8	126	138 D	114 D	76.3 D	135 D	159 D	105 D	113	126	111	110	89.4 D	97.9	47.9
ALUMINUM	0.12 B	0.95	0.0998 B	<.2	U	0.137 B	0.233	0.109 J	<10	<.0134	0.237	<10	0.323	0.507	0.0731 J
ACETONE	0.34	0.47 E	0.38 E	0.21 E	0.28 E	0.29 D	0.48 D	0.31 D	0.591	0.404	.184 D	0.555	0.116	0.11	0.0806
Methyl Ethyl Ketone	0.036	0.062	0.048 Z	0.03	0.031	0.041	0.047	0.034	0.0495	0.0193	0.0205	0.0442	0.0067	0.0062 J	0.0036 J
Arsenic	5.7 B	<	3.7 B	58.3	U	U	9 B	8.6 J	<500	<6.8	<500 D	<500	<10	<200	<10
Lead	28.7	215	7.5	8.2	U	U	32	12.4	<250	<25.4	286	<250	21.8	71.6	<5
Barium	11.7	3.85 B	2.94	3.2	3.01	3.73	3.86	3.39	<10	3.14	2.57	2.84 J	2.57	2.74	1.75
Cadmium	<	0.02 B	<	<	U	U	< <		<.125	<.000063	<.0025	0.0176 J	<.0125 D	<.05 D	0.00089 J
Copper	<	<	0.0061 B	<	0.035	U	<	0.004 J	<1.25	<.0025	**2.97**	<1.25	0.0298	0.0081 J	<.025
Selenium	0.0154	<	<	0.0058	U	0.0029 B	0.0036 B	<	<.5	<.0062	<.01	<.5	0.149 D	0.167 JD	0.0154
Zinc	0.065	0.15 B	0.0151 B	0.0223	0.236	0.0156 B	0.0557	0.01 J	<1	<.0012	**9.8**	0.547 J	<.1 D	0.121 JD	0.0067 J
Carbon disulfide	<	<	<	<	U	U	< <		<.005	<.0005	0.0021	0.0017	0.0032	<.001	<.001
BOD	<	281	**405**	**328**	79	**402**	**623**	**412**	239	157	**356**	**363**	**310** D	**861** D	179
Antimony	0.0089 B	<	<	<	U	0.0134 B	0.006 B	0.0136 J	<3	<.003	<.06	<3	<.06	<.06	0.0175 J
Beryillium	<	<	<	<	U	U	<	0.003 J	<.25	<.00057	0.006	<.25	<.025	0.0023 JD	<.005
Chromium	0.005 B	0.14 B	0.0042 B	0.012	0.0218	0.0092 B	0.0984	0.0593	<.5	0.0102	0.0215	<.5	0.0285	0.0698	0.0132
Nickel	<	<	<	<	U	0.0025 B	0.0168	0.0029 J	<2	<.00088	<.04	<2	0.0018 J	<.04	<.04
Thallium	0.0072 B	<	<	<	U	0.004 B	<	<	<.5	<.0036	<.01	<.5	0.0094 J	0.0235	<.01
Vanadium	0.0037 B	<	0.0022 B	<	U	0.003 B	0.0074 B	<	<2.5	<.0008	<.05	<2.5	<.05	<.05	<.05
methylene chloride	<	<	<	<	U	U	<	<	<.005	<.0005	<.001	<.001	<.001	<.001	<.001
Toluene	<	<	<	<	U	U	<	<	<.005	<.0005	<.001	<.001	<.001	<.001	<.001
Mercury	<	0.00017 B	<	<	U	U	<	<	<.0002	<.000023	<.0002	<.0002	<.0002	0.00013 J	0.00022
4-Methyl-2-pentanone	0.005	0.008	0.009	<	U	0.006	0.01	0.006	0.013	<.0005	.0046 J	0.0081	0.0014 J	0.0025 J	<.005
Iodomethane															
sulfide mg/l								**35.4**	<2	3	**88**	**147**	8	**72**	**25.6**
1,4 Dioxane												1 H	5.4	4.8	3.8
perfluorobutanoic acid (PFBA)															250 B
perfluoropentanoic acid (PFPeA)															130
perfluorohexanoic acid(PFHxA)															230
perfluoroheptanoic acid															42
perfluorooctanoic acid(PFOA)															62
perfluorononanoic acid(PFNA)															3 J
perfluorodecanoic acid (PFDA)															ND

NNUP PARAMETERS	Dec_12	June_13	Dec_13	Jun_14	DEC_14	June_15	Dec_15	Jun_16	Dec_16	June_17	Dec_17	Aug_18	Dec_18	June_19	Dec_19
perfluoroundecanoic acid(PFUnA)															ND
perfluorododecanoic acid(PFDoA)															ND
perfluorotridecanoic acid(PFTriA)															ND
perfluorotetradecanoic acid(PFTeA)															ND
perfluorobutanesulfonic acid(PFBS)															210
perfluorohexanesulfonic acid(PFHxS)															11 B
perfluoroheptanesulfonic acid(PFHpS)															ND
perfluorooctanesulfonic acid(PFOS)															9.8
perfluorodecanesulfonic acid(PFDS)															ND
perfluorooctanesulfonamide(FOSA)															ND
N-methylperfluorooctanesulfonamidoacetic acil															ND
N-ethylperfluorooctanesulfonamidoacetic acit(N															ND
6:2FTS															ND
8:2FTS															ND

NNUP PARAMETERS	Jun_20
CHLORIDE	60800
SULFATE	24.7
Alkalinity	172
Na	10100
K	4040
Ca	11300
Mg	2
pH	6.96
TDS	70300
PHENOL	
PHENOLS	0.118
IRON	0.368
MANGANESE	0.335
TKN	107
ALUMINUM	<1
ACETONE	0.375
Methyl Ethyl Ketone	0.0412
Arsenic	<.05
Lead	0.368
Barium	2.24
Cadmium	<.0125
Copper	0.103
Selenium	<.052
Zinc	0.12
Carbon disulfide	<.001
BOD	184
Antimony	<.3
Beryillium	0.00085
Chromium	0.237
Nickel	0.111
Thallium	0.0528
Vanadium	<.25
methylene chloride	<.001
Toluene	<.001
Mercury	<.0002
4-Methyl-2-pentanone	0.0052
Iodomethane	0.0043
sulfide mg/l	**17.6**
1,4 Dioxane	2.9
perfluorobutanoic acid (PFBA)	270
perfluoropentanoic acid (PFPeA)	130
perfluorohexanoic acid(PFHxA)	190
perfluoroheptanoic acid	31
perfluorooctanoic acid(PFOA)	43
perfluorononanoic acid(PFNA)	2.5
perfluorodecanoic acid (PFDA)	0.66 J

NNUP PARAMETERS	Jun_20	
perfluoroundecanoic acid(PFUnA)	ND	
perfluorododecanoic acid(PFDoA)	ND	
perfluorotridecanoic acid(PFTriA)	ND	
perfluorotetradecanoic acid(PFTeA)	Nd	
perfluorobutanesulfonic acid(PFBS)	230	
perfluorohexanesulfonic acid(PFHxS)	14	B
perfluoroheptanesulfonic acid(PFHpS)	0.29	J
perfluorooctanesulfonic acid(PFOS)	12	
perfluorodecanesulfonic acid(PFDS)	ND	
perfluorooctanesulfonamide(FOSA)	0.7	JB
N-methylperfluorooctanesulfonamidoacetic acit	ND	
N-ethylperfluorooctanesulfonamidoacetic acit(N	ND	
6:2FTS	4.3	J
8:2FTS	ND	

NNUSPARAMETERS	95 MCL	03 MCL	Aug '03	Mar '04	Sept '04	Mar '05	Sept '05	April '06	oct '06	May '07	Oct'07	May_08	Oct_08	June_09	Dec_09	Jun_10	DEC_10	Jun_2011	DEC_11	Jun_12
CHLORIDE	500mg/l	na	11400.0	15800.0	5700.0	16500.0	12000.0	14900.0	16400.0	16700.0	22000.0	23600	13600	11300	31300	39000	51000	37000	52000	54000
SULFATE	500mg/l	na		396.00	657.00	751.00	1070.00	1140.00	440.00	110.00	128.00	144	357	60.9	0	100	5	7	<5	5
Alkalinity										144.00	227.00	204	140	145	157	140	180	180	130	180
Na										3710.00	42.30	933	1220	897	970	5200	12000	8700	8800	11000
K										3430.00	3200.00	3450	1680	1490	2540	5200	7900	5600	5800	7100
Ca										6890.00	5410.00	5890	3780	2760	7350	11000	14000	11000	11000	13000
Mg										0.83	13.10	6.43	28.9	7.28	13.9	31	13	9.8	8.8	11
pH	6.5-8.5	5 - 12.5	5.52	7.33	7.17	6.76	7.36	7.96	6.99	9.93	9.58	9.2	9.11	6.77	7.28	6.6	6.4	6.8	6.7	6.3
TDS	1000 mg/l	na	24200.0	6200.0	16000.0	27000.0	18000.0	8810.0	31400.0	29700.0	36500.0	40000	30900	21500	51500	70000	82000	85000	70000	91000
PHENOL	0.002mg/l	1.5 mg/l																		
PHENOLS				1.9		0.0			0.0	0.3		0.051	0.0173	0.0142		0.01	0.2	0.11	0.14	0.31
IRON	0.6mg/l	na	2.09	0.01	2.98	1.48	4.87	0.58	4.79		0.49	5.26	2.78	2.09	0.827	2.4	12	0.71	0.7	1.3
MANGANESE	0.6mg/l	8 mg/l	7.87	4.95	2.74	2.02	1.10	2.89	1.32	0.22	1.02	0.596	1.71	1.44	2.27	3.6	<	0.95	0.98	1.5
TKN	10 mg/l	na		4.64	13.40	6.65	7.06	4.20	5.20	32.20	22.00	20.8	16.2	35.4	78.8	64	96	78	140	110
ALUMINUM	2mg/l	na	1.53	0.05	0.13	0.35	7.71	0.59	9.41	0.65	0.05	0.908	0.0352	0.243		0.2	0.5	0.63	<.1	<
ACETONE	5 ppb	50 mg/l														0.037	0.14	0.19	0.2	0.35
Methyl Ethyl Ketone	5 ppb	ppm														<	0.02	<	0.033	0.05
Arsenic	50 ppb	400 ppb		17.00 J					0.04							100	<	<	<	<
Lead	50 ppb	400 ppb				22.00	21.50		110.00	20.00	10.00 J	27.8	10.3	25	3.8	<	<	<	<	<
Barium		8 mg/l	2.36	1.26	0.96	2.15	1.33	0.58	2.02	6.13	5.45	3.84	1.94	3.53	7.62	**9.6**	**10**	5.3	5.4	6.2
Cadmium		.8mg/l	0.01	0.02		0.01	0.01 J	0.01	0.09			0.0107				<	<	<	<	<
Copper		1.6mg/l	0.01	0.02 J		0.03	0.04	0.02	0.33		0.00 J	0.12	0.115	0.176	0.0087	0.06	<	<	<	<
Zinc		5 mg/l	0.40	0.26		0.19	0.25	0.12	1.09	0.02	0.04	1.09	0.142	0.11	0.0323	0.37	0.12	0.1	0.33	0.21
Antimony			0.01	0.02 J												0.2	<	<	<	<
Beryillium			0.00													<	<	<	<	<
Chromium		8 mg/l	0.01				0.04		0.06			0.184	0.00866 J	0.0279		<	<	<	<	<
Nickel		8 mg/l	0.02	0.02			0.07		0.03			0.244	0.0146 J	0.0204	0.00646	<	<	<	<	<
Selenium		.4mg/l	0.04						0.03							<	<	<	<	<
Thallium			0.09									0.0277	0.0303	0.0189	0.0258	<	<	<	<	<
Vanadium			0.00	0.01 J												<	<	<	<	<
Silver		.4mg/l		0.02 J											.00838J	<	<	<	<	<
methylene chloride		2.5 mg/l							0.02 B	3.70 B		0.026 B	11 B	11 B	10B	<	<	<	<	<
ammonia												34.8	7.33	31	77	61	93	64	72	98
hardness												762	9550	6930	18400	27000	36000	26000	27000	33000
carbon disulfide																		0.012	0.007	<
4methyl2pentano	ppb																			
2 hexanone																				
Iodomethane																				
sulfide	12 mg/l																			
BOD	300 mg/l																			
1,4 dioxane	ug/l																			
perfluorobutanoic acid (PFBA)		ng/l																		
perfluoropentanoic acid (PFPeA)																				
perfluorohexanoic acid(PFHxA)																				
perfluoroheptanoic acid																				
perfluorooctanoic acid(PFOA)																				

NNUSPARAMETERS	95 MCL	03 MCL	Aug '03	Mar '04	Sept '04	Mar '05	Sept '05	April '06	oct '06	May '07	Oct'07	May_08	Oct_08	June_09	Dec_09	Jun_10	DEC_10	Jun_2011	DEC_11	Jun_12
perfluorononanoic acid(PFNA)																				
perfluorodecanoic acid (PFDA)																				
perfluoroundecanoic acid(PFUnA)																				
perfluorododecanoic acid(PFDoA)																				
perfluorotridecanoic acid(PFTriA)																				
perfluorotetradecanoic acid(PFTeA)																				
perfluorobutanesulfonic acid(PFBS)																				
perfluorohexanesulfonic acid(PFHxS)																				
perfluoroheptanesulfonic acid(PFHpS)																				
perfluorooctanesulfonic acid(PFOS)																				
perfluorodecanesulfonic acid(PFDS)																				
perfluorooctanesulfonamide(FOSA)																				
N-methylperfluorooctanesulfonamidoacetic acit(NMeFOSAA)																				
N-ethylperfluorooctanesulfonamidoacetic acit(NEtFOSAA)																				
6:2FTS																				
8:2FTS																				

NNUSPARAMETERS	95 MCL	Dec_12	June_13	13-Dec	Jun_14	DEC_14	June_15	Dec_15	Jun_16	Dec_16	June_17	Dec_17	Aug_18	Dec_18	June _19	Dec_19
CHLORIDE	500mg/l	48000	51600 D	99700 D	52600	38500 D	96800 D	58100	47900	63300 D	44500.0	48300 D	<2	47700 D	41700	51900
SULFATE	500mg/l	<5	**4820** D	<5	<5	191 D	<5 U	<5	337	<5	<.21	<5	0.32 J	2.4 J	<5	<50
Alkalinity		153	123 D	240 D	210 D	89.1	126	217	211	392	241	240	331	227	217	215
Na		13400	12100	13600	13800 D	9780 D	13900	597	14800	16000	10800.00	12800 D	13100	13800 D	10700 D	9050
K		7160	5680	6280	6820 D	4830 D	6220	6310	5970	6620	4540.00	5160 D	4990	5500 D	4340 D	3880
Ca		16100	14200	15400	16700 D	12100 D	16600	15900	17900	17600	12200.00	15200 D	14900	14600 D	11400 D	10400
Mg		6.35	12.7 B	5.05	13	13.1	7.78	4.58	5.64	<10	7.67	3.46	4.02 J	4.65	3.63	2.92
pH	6.5-8.5	6.26		6.06	3.96	6.76	6.31	5.82	6.35	6.37	5.74	7.42	6.63	6.65	6.94	7.74
TDS	1000 mg/l	106000	159000 D	138000	110000	79400	151000	141000	139000	94300	87000.00	112000	89400	78100	69700	60700
PHENOL	0.002mg/l															
PHENOLS		<.025	0.105	0.27 D	0.109	0.0918 D	0.041	0.13 D	0.206 D	0.334	0.06	.15 D	0.416	0.247	0.16	0.209
IRON	0.6mg/l	0.715	0.26 B	0.129	0.934	0.45	0.121	2.78	0.246	<5	0.12	<1 D	<1	0.0524	0.204	0.0975
MANGANESE	0.6mg/l	1.49	1.41 B	0.868	0.941	0.786	0.981	1.12	0.814	0.72	0.58	0.534	0.637	0.432	0.425	0.414
TKN	10 mg/l	126	124 D	130 D	107 D	87.5 D	100 D	140	101 D	110	126.00	127	122	103 D	56.9	75.1
ALUMINUM	2mg/l	0.0426 B	<	0.0219 B	<	0.214	U	0.449	<	<10	<.0134	<.2	<10	0.0375 J	<.2	<.4
ACETONE	5 ppb	0.43	0.46 E	0.61 EZ	0.23 E	0.33 E	0.31 D	0.43 D	0.34 D	0.494	0.59	.306 D	0.608	0.318 D	0.224 D	0.331
Methyl Ethyl Ketone	5 ppb	0.051	0.069	0.069	0.028 D	0.036	0.037	0.065	0.045	0.0446	0.02	0.0377	0.046	0.0487	0.0241	0.0523
Arsenic	50 ppb	11	<	6.2 B	57.7	U	1.9 B	3.2 B	10.1	<500	<6.8	<500 D	<500	<10	<200 D	<.02
Lead	50 ppb	29.4	126 B	37.9	20	U	1.8 B	6.1	14.4	<250	20.10	57	<250	24.1	61.8	<.01
Barium		9.29	4.88 B	2.81	3.75	3.37	3.43	3.45	3.17	<10	2.59	2.64	2.79 J	2.52	2.07	2.1
Cadmium		<	<	<	<	U	U	<	<	<.125	<.063	<.125 D	<.125	<.0125 D	<.05 D	0.0027
Copper		<	<	<	<	0.0375	U	0.0064 B	0.0046 J	<1.25	0.11	0.455	<2.5	<.025	<.025	<.05
Zinc		0.0243	<	0.0184 B	0.0223	0.251	0.0196 B	0.0601	0.0146 J	<1	0.65	1.42	0.143 J	<.1	D 0.0988 JD	0.0117 J
Antimony		0.0061 B	<	0.0057 B	<	U	0.012 B	0.008 B	0.0189 J	<3	<.003	<.06	<3	<.06	<.06	<.12
Beryillium		<	<	<	<	U	U	<	0.0022 J	<.25	<.00057	0.0058	<.25	<.025 D	0.0022 JD	<.01
Chromium		<	0.12 B	0.0133	0.136	0.0112	0.0114	0.192	0.0079 J	<.5	<.0016	.006 J	<.5	0.0082 J	0.094	<.02
Nickel		<	<	<	<	U	0.0018 B	0.0468	<	<2	<.00088	<.04	<2	<.04	<.04	<.08
Selenium		0.0169	<	<	<	U	0.0061	<	<	<.5	<.0062	.0068 J	<.5	<.01	0.204 D	0.0242
Thallium		<	<	0.0012 B	<	U	0.0049 B	0.0069 B	<	<.5	<.0036	<.01	<.5	0.0161	0.0289	<.02
Vanadium		0.0038 B	<	0.0032 B	<	U	0.0019 B	0.0084 B	0.0043 J	<2.5	<.0008	<.05	<2.5	<.05	<.05	<.1
Silver		<	0.0288 B	<	<	U	U	<	<	<.5	<.0036	<.01	<.5	<.05 D	<.01	<.02
methylene chloride		<	<	<	<	U	U	<	<	<.005	<.0005	<.001	<.001	<.001	<.001	<.001
ammonia		72.3	124 D	139 D	120 D	95.7 D	124 D	157 D	149 D	154	120	121	20.1	96.2 D	93.7 D	95.6
hardness		32400	36600 D	37600 D	32200 D	27500 D	38400 D	38600 D	37400 D	40000	31200	34400	8000	32000	29000	30000
carbon disulfide		<	<	<	<	U	U	<	<	<.005	0.0778	0.0051	<.001	0.0118	0.001	<.001
4methyl2pentano	ppb	0.006	0.009	0.009	<	U	0.006	0.016	0.008	0.0139	<.0005	0.0079	0.0077	0.0074	0.0049 J	0.0072
2 hexanone								0.002 J	<	<.005	<.0005	<.005	<.005	<.005	<.005	<.005
Iodomethane																
sulfide	12 mg/l								**20.2**	<2	5.4	**126**	**170**	**64**	**72**	**24**
BOD	300 mg/l											**387**	**356**	294	254 D	228
1,4 dioxane	ug/l												0.96 H	3.3	2.1	3.9
perfluorobutanoic acid (PFBA)																260 B
perfluoropentanoic acid (PFPeA)																140
perfluorohexanoic acid(PFHxA)																190
perfluoroheptanoic acid																32
perfluorooctanoic acid(PFOA)																32

NNUSPARAMETERS	95 MCL	Dec_12	June_13	13-Dec	Jun_14	DEC_14	June_15	Dec_15	Jun_16	Dec_16	June_17	Dec_17	Aug_18	Dec_18	June _19	Dec_19	
perfluorononanoic acid(PFNA)																ND	
perfluorodecanoic acid (PFDA)																ND	
perfluoroundecanoic acid(PFUnA)																ND	
perfluorododecanoic acid(PFDoA)																ND	
perfluorotridecanoic acid(PFTriA)																ND	
perfluorotetradecanoic acid(PFTeA)																ND	
perfluorobutanesulfonic acid(PFBS)																250	
perfluorohexanesulfonic acid(PFHxS)																11	B
perfluoroheptanesulfonic acid(PFHpS)																ND	
perfluorooctanesulfonic acid(PFOS)																7.1	J
perfluorodecanesulfonic acid(PFDS)																ND	
perfluorooctanesulfonamide(FOSA)																ND	
N-methylperfluorooctanesulfonamidoacetic acit(NMeFOSAA)																ND	
N-ethylperfluorooctanesulfonamidoacetic acit(NEtFOSAA)																ND	
6:2FTS																ND	
8:2FTS																ND	

NNUSPARAMETERS	95 MCL	Jun_20
CHLORIDE	500mg/l	61600
SULFATE	500mg/l	8.9
Alkalinity		140
Na		10600
K		4300
Ca		11900
Mg		2.02
pH	6.5-8.5	6.66
TDS	1000 mg/l	70800
PHENOL	0.002mg/l	
PHENOLS		0.104
IRON	0.6mg/l	0.108
MANGANESE	0.6mg/l	0.322
TKN	10 mg/l	106
ALUMINUM	2mg/l	<1
ACETONE	5 ppb	0.333
Methyl Ethyl Ketone	5 ppb	0.0406
Arsenic	50 ppb	<.05
Lead	50 ppb	<.025
Barium		2.3
Cadmium		<.0125
Copper		0.0895
Zinc		0.0405
Antimony		<.3
Beryillium		0.00089
Chromium		0.232
Nickel		0.112
Selenium		0.0468
Thallium		0.054
Vanadium		<.25
Silver		0.0287
methylene chloride		<.001
ammonia		98.3
hardness		30800
carbon disulfide		0.0018
4methyl2pentano	ppb	0.0056
2 hexanone		<.005
Iodomethane		0.0043
sulfide	12 mg/l	**12.8**
BOD	300 mg/l	180
1,4 dioxane	ug/l	2.7
perfluorobutanoic acid (PFBA)		270
perfluoropentanoic acid (PFPeA)		130
perfluorohexanoic acid(PFHxA)		190
perfluoroheptanoic acid		30
perfluorooctanoic acid(PFOA)		36

NNUSPARAMETERS	95 MCL	Jun_20	
perfluorononanoic acid(PFNA)		1.8	J
perfluorodecanoic acid (PFDA)		0.72	J
perfluoroundecanoic acid(PFUnA)		ND	
perfluorododecanoic acid(PFDoA)		ND	
perfluorotridecanoic acid(PFTriA)		ND	
perfluorotetradecanoic acid(PFTeA)		ND	
perfluorobutanesulfonic acid(PFBS)		240	
perfluorohexanesulfonic acid(PFHxS)		12	B
perfluoroheptanesulfonic acid(PFHpS)		ND	
perfluorooctanesulfonic acid(PFOS)		9.1	
perfluorodecanesulfonic acid(PFDS)		ND	
perfluorooctanesulfonamide(FOSA)		3.1	B
N-methylperfluorooctanesulfonamidoacetic acit(NMeFOSAA)		ND	
N-ethylperfluorooctanesulfonamidoacetic acit(NEtFOSAA)		ND	
6:2FTS		3.5	J
8:2FTS		ND	

TOBSWMF's Leachate Monitoring Program

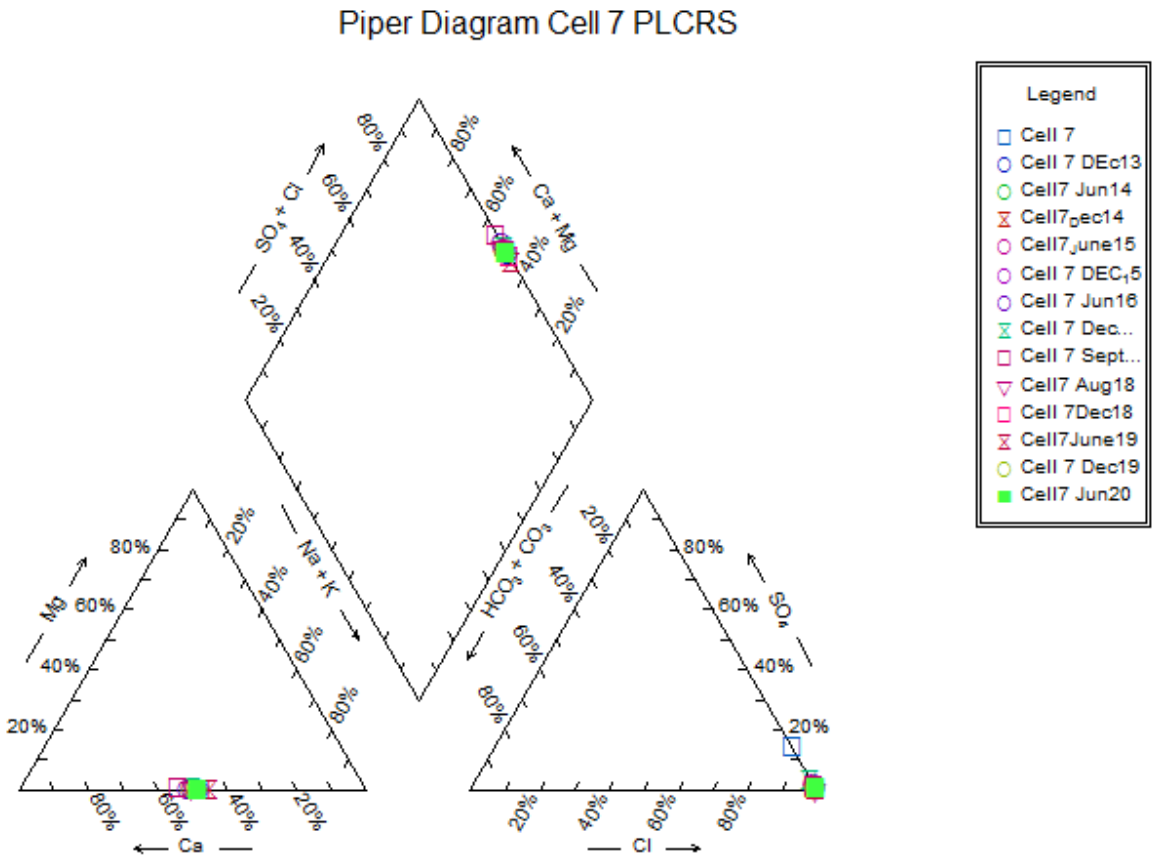
Cell 7

June 2020

Pursuant to the NYSDEC operating permit for the operation of the Cell 7 Ashfill (Cell 7), leachate from that facility's PLCRS was sampled in accordance with the procedures detailed in the TOBSWMF's SAP (TOBDEC, 2018). The Cell 7 operating permit requires semiannual sampling of leachate for expanded parameters plus a scan for dioxins and furans from the facility's PLCRS. The expanded parameters list is found within 6NYCRR part 363-4.6(h) and includes 1,4 dioxane, fluorinated alkyl substances (PFOA's) and various other additional parameters (appendix 2) not found previously in NYCRR part 360. This report includes the laboratory report from Pace Analytical Services Inc., a spreadsheet summarizing the results, a Piper diagram and brief discussion.

- The overall leachate characteristics of the Cell 7 facility largely conform to the historical dataset for this facility.
- A Piper diagram that includes the June 2020 data for the Cell 7 facility was prepared and is attached to this section. The geochemical fingerprint for Cell 7 is unchanged.
- For June 2020 pH at Cell 7 was measured at 7.36.
- Analysis for 2378 TCDD in June 2020 was ND (Reporting limit 10 pg/l).
- Analysis for 1,4 dioxane for June 2020 was reported at 3.3 ug/l.
- Mercury was not detected above its mdl at Cell 7 for June 2020.
- Organics from the expanded parameters list observed during June 2020 included acetone (.124 mg/l), MEK (.014 mg/l), phenol (.087 mg/l), 2,4 D (.0013 mg/l), 3-4 methylphenol (.044 mg/l), iodomethane (.004 mg/l), 2,4,5 T (.0012 mg/l) and 2methylphenol (.006 mg/l (below reporting limit)). Total expanded organics observed for June 2020 was .276 mg/l.
- TTO (>.01 mg/l) observed at the Cell 7 facility for June 2020 is .087 mg/l (phenol). This is below the overall TTO limit of 10 mg/l, and below the limit for acid extractable organic compounds of 1.5 mg/l set forth in the Town of Babylon Discharge Certification issued by SCDPW.
- No metals were observed above their MCL. Metals observed above their RL include barium (5.55 mg/l), calcium (9900 mg/l), chromium (.157 mg/l), iron (.109 mg/l), magnesium (6.45 mg/l), manganese (.221 mg/l), potassium (5500 mg/l) and sodium (8800 mg/l).
- PFAS/PFOA and 1,4 dioxane results are included in appendix 1.

The next round of sampling for leachate at the Cell 7 facility is scheduled for December 2020.



Note: solid green square represents June 2020 data.

	CELL 7 PLCRS													
				07/01/13	3/13/2014	3/13/2014	06/25/14	12/12/14	06/16/15	12/14/2015				
				7/1/2013	13-Dec	DUP_1213	6/25/2014	12/12/2014	6/16/2015	12/14/2015	6/20/2016	Jan-17	Sept_17	Dec_17
TestNo	Analyte	CAS	Units											
	pH				7.88	1/30/2014	5.91	6.93	6.95		6.01	8.21	6.48	
	DO		mg/l		2.24	1/30/2014	1.31	0.86	1.77		0.87	1.87	0.53	
	Spec cond				61484		50900	45794	48822		56196	25443	65674	
	ORP						-256.4	-281.9	-276.2		-79.5	11.5	-326.5	
SW8270C	Pyrene	129-00-0	µg/L	10 U	10 U		ND U	ND U	ND U		10U	<2.5		<5.0
SW8270C	Safrole	94-59-7	µg/L	10 U	10 U		ND U	ND U	ND U	10 U	10U	<2.5		<5.0
SW9014	Cyanide	57-12-5	UG/L	10.0 U	10 U		50.0 U	10 U	20 U	10 U	10U	<2.9	<10	
SW9060	Total Organic Carbon		mg/L	51.6 D	108 D		35.2	88.0 D	21.3	2.5	22.6	<0.63	43.2	
E1613	Dioxin		Pg/L	1.0 U	10 U		ND	ND	ND U	10 U	10 U			
E300.0	Bromide	24959-67-9	mg/L	308 D	336 D			311 D	ND U	230 D	248D	117	373	
E300.0	Sulfate	14808-79-8	mg/L	5140 D	55 D		157 D	270 D	720 D	364 D	329D	338	375	
E351.2	Nitrogen, Kjeldahl, Total		mg/L	63.6 D	95 D		85.0 D	61.2 D	49.7 D	52.0 D	57.2D	17.1	67	
E353.2	Nitrate as N	14797-55-8	mg/L	2.50 U	2.00 U		2.00 U	0.100 U	0.100 U	0.10 U	.1U	<0.0050	<.05	
E353.2	Nitrite as N	14797-65-0	mg/L	0.100 U	0.100 U		0.100 U	0.100 U	0.100 U	0.10 U	.1U	<0.0050	<.05	
E410.4	Chemical Oxygen Demand		mg/L	517 D	1220 D		445 D	852 D	550 D	175 D	1400 D	560	1560	
E420.1	Phenolics, Total Recoverable		µg/L	49.4 D	309 D		66.6	47.5	54.8 D	5.0 U	41.9	76.2	110	
M3500-Cr D	Chromium, Hexavalent	18540-29-9	mg/L	0.0200 U	0.0200 U		0.0200 U	0.0200 U	0.0200 U	0.02 U	0.0200 U	<0.0030	<.1	
SM2120B	Color		units	75 D	150 D		200 D	150 D	75.0 D	15.0	25.0	40.0	25	
SM2320B	Alkalinity, Total (As CaCO3)		mg/L	181 D	266 D		223 D	273 D	175 D	119 D	122	78.6	160	
SM2340C	Hardness (As CaCO3)		mg/L	17200 D	13100 D		14200 D	17700 D	17800 D	13200 D	25800 D	6400	19600	
SM2540C	Total Dissolved Solids		mg/L	93900 D	39300 D		49400	51700	74000	55500	61100	2960	74800	
SM4500-CL-	Chloride	16887-00-6	mg/L	23500 D	21600 D		21800 D	27900 D	26500 D	18400 D	18600 D	**8320**	31600	
SM4500-NH	Nitrogen, Ammonia (As N)	7664-41-7	mg/L	55.8 D	89.5 D		79.0 D	58.1 D	63.9 D	46.3 D	66.5 D	16.3	56.4	
SM5210B	Biochemical Oxygen Demand		mg/L	42	101		30	266	25	10 U	4	<3.3	43.5	
SW6010B	Aluminum	7429-90-5	UG/L	190 U	28.0 B		43.9 B	200 U	17.6 BN	39.5 B	200 U	200 U		
SW6010B	Antimony	7440-36-0	UG/L	24.0 U	4.0 B		15.8 B	60.0 U	13.2 BN	10.9 B	15.7 J	20.3 J		
SW6010B	Arsenic	7440-38-2	UG/L	56.0 U	8.4 B		39.0	19.1	11.4 N	21.1	19.9	7.6 J		
SW6010B	Barium	7440-39-3	UG/L	3170 B	2430		3490	2750	3940	2790	4250	954		
SW6010B	Beryllium	7440-41-7	UG/L	2.0 U	0.14 U		0.091 U	5.00 U	0.15 U	0.20 U	1.4 J	0.61 J		
SW6010B	Boron	7440-42-8	UG/L	958 B	381		333	666	673	480	651	429		
SW6010B	Cadmium	7440-43-9	UG/L	2.0 U	0.11 U		0.14 U	5.00 U	0.16 U	0.10 U	2.5 U	2.8	<2.5	
SW6010B	Calcium	7440-70-2	UG/L	6610000	6300000		7460000	7100000 D	7360000	5490000 DE	8830000	2570000	7180000	
SW6010B	Chromium	7440-47-3	UG/L	8.0 U	3.2 B		3.8 B	10.0 U	2.8 B	41.9	10 U	10 U		
SW6010B	Cobalt	7440-48-4	UG/L	8.0 U	0.19 U		0.16 U	50.0 U	1.5 B	0.20 U	50 U	2.6 J		
SW6010B	Copper	7440-50-8	UG/L	90.0 B	13.1 B		4.3 B	28.9	0.37 U	4.0 B	10.4 J	25 U		
SW6010B	Iron	7439-89-6	UG/L	896 B	839		1560	1480	894	3110	1230	1680	260	
SW6010B	Lead	7439-92-1	UG/L	20.0 U	10.6		7.7	3.00 U	0.85 UN	1.3 UN	5.8	<50	<100	
SW6010B	Magnesium	7439-95-4	UG/L	9900 B	3710 B		4560 B	7160	8620	9510	10400	8040	24000	
SW6010B	Manganese	7439-96-5	UG/L	2640	1690		2300	852	2100	672	755	304	861	
SW6010B	Nickel	7440-02-0	UG/L	6.0 U	0.34 U		0.29 U	40.0 U	2.8 B	0.30 U	40 U	3.1 J		
SW6010B	Potassium	7440-09-7	UG/L	2990000	3570000		3910000	3990000 D	3860000	2900000 D	4170000	1270000	415000	
SW6010B	Selenium	7782-49-2	UG/L	46.0 U	2.2 B		1.7 B	5.00 U	2.7 UN	2.2 UN	10 U	10 U		
SW6010B	Silver	7440-22-4	UG/L	4.0 U	0.43 U		0.37 U	10.0 U	0.87 UN	0.50 U	10 U			
SW6010B	Sodium	7440-23-5	UG/L	6310000	5760000		6490000	6240000 D	6230000	4870000 DE	7100000	2190000	6730000	
SW6010B	Thallium	7440-28-0	UG/L	38.0 U	1.3 U		4.6 B	10.0 U	1.0 U	1.9 U	10 U	10 U		
SW6010B	Tin	7440-31-5	UG/L	14.0 U	3.7 B		7.7 B	40.0 U	6.6	3.4 B	3.2 J	50 U		
SW6010B	Vanadium	7440-62-2	UG/L	6.0 U	6.4 B		3.7 B	50.0 U	5.4 B	5.0 B	50 U	1.6 J		

	CELL 7 PLCRS													
				07/01/13	3/13/2014	3/13/2014	06/25/14	12/12/14	06/16/15	12/14/2015				
				7/1/2013	13-Dec	DUP_1213	6/25/2014	12/12/2014	6/16/2015	12/14/2015	6/20/2016	Jan-17	Sept_17	Dec_17
SW6010B	Zinc	7440-66-6	UG/L	6.0 U	8.7 B		11.5 B	154	12.8 BN	1.6 U	4.2 J	20 U		
SW7470	Mercury	7439-97-6	UG/L	0.18 B	1.2 B		0.10 U	0.3	0.10 U	0.10 U	0.20 U	<0.2	.039J	
SW8081/808	4,4´-DDD	72-54-8	µg/L	ND U	ND U		ND U	ND U	0.10 U	0.10 U	0.10 U	.1 U		<0.10
SW8081/808	4,4´-DDE	72-55-9	µg/L	ND U	ND U		ND U	ND U	0.10 U	0.10 U	0.10 U	.1 U		<0.10
SW8081/808	4,4´-DDT	50-29-3	µg/L	ND U	ND U		ND U	ND U	0.10 U	0.10 U	0.10 U	.1 U		<0.10
SW8081/808	Aldrin	309-00-2	µg/L	ND U	ND U		ND U	ND U	0.050 U	0.050 U	0.050 U	.05 U		<0.050
SW8081/808	alpha-BHC	319-84-6	µg/L	ND U	ND U		ND U	ND U	0.050 U	0.050 U	0.050 U	.05 U		<0.050
SW8081/808	Aroclor 1016	12674-11-2	µg/L	ND U	ND U		ND U	ND U	1.0 U	1.0 U	1.0 U	1 U		<1.0
SW8081/808	Aroclor 1221	11104-28-2	µg/L	ND U	ND U		ND U	ND U	2.0 U	2.0 U	2.0 U	2 U		<2.0
SW8081/808	Aroclor 1232	11141-16-5	µg/L	ND U	ND U		ND U	ND U	1.0 U	1.0 U	1.0 U	1 U		<1.0
SW8081/808	Aroclor 1242	53469-21-9	µg/L	ND U	ND U		ND U	ND U	1.0 U	1.0 U	1.0 U	1 U		<1.0
SW8081/808	Aroclor 1248	12672-29-6	µg/L	ND U	ND U		ND U	ND U	1.0 U	1.0 U	1.0 U	1 U		<1.0
SW8081/808	Aroclor 1254	11097-69-1	µg/L	ND U	ND U		ND U	ND U	1.0 U	1.0 U	1.0 U	1 U		<1.0
SW8081/808	Aroclor 1260	11096-82-5	µg/L	ND U	ND U		ND U	ND U	1.0 U	1.0 U	1.0 U	1 U		<1.0
SW8081/808	beta-BHC	319-85-7	µg/L	ND U	ND U		ND U	ND U	0.050 U	0.050 U	0.050 U	.05 U		0.14
SW8081/808	Chlordane	57-74-9	µg/L	ND U	ND U		ND U	ND U	1.0 U	1.0 U	1.0 U			
SW8081/808	delta-BHC	319-86-8	µg/L	ND U	ND U		ND U	ND U	0.050 U	0.050 U	0.050 U	.05 U		<0.050
SW8081/808	Dieldrin	60-57-1	µg/L	ND U	ND U		ND U	ND U	0.10 U	0.10 U	0.10 U	.1 U		<0.10
SW8081/808	Endosulfan I	959-98-8	µg/L	ND U	ND U		ND U	ND U	0.050 U	0.050 U	0.050 U	.05 U		<0.050
SW8081/808	Endosulfan II	33213-65-9	µg/L	ND U	ND U		ND U	ND U	0.10 U	0.10 U	0.10 U	.1 U		<0.10
SW8081/808	Endosulfan sulfate	1031-07-8	µg/L	ND U	ND U		ND U	ND U	0.10 U	0.10 U	0.10 U	.1 U		<0.10
SW8081/808	Endrin	72-20-8	µg/L	ND U	ND U		ND U	ND U	0.10 U	0.10 U	0.10 U	.1 U		<0.10
SW8081/808	Endrin aldehyde	7421-93-4	µg/L	ND U	ND U		ND U	ND U	0.10 U	0.10 U	0.10 U	.1 U		<0.10
SW8081/808	gamma-BHC	58-89-9	µg/L	ND U	ND U		ND U	ND U	0.050 U	0.050 U	0.050 U	.05 U		<0.050
SW8081/808	Heptachlor	76-44-8	µg/L	ND U	ND U		ND U	ND U	0.050 U	0.050 U	0.050 U	.05 U		0.61
SW8081/808	Heptachlor epoxide	1024-57-3	µg/L	ND U	ND U		ND U	ND U	0.050 U	0.050 U	0.050 U	.05 U		<0.050
SW8081/808	Methoxychlor	72-43-5	µg/L	ND U	ND U		ND U	ND U	0.50 U	0.50 U	0.50 U	.5 U		<0.50
SW8081/808	Toxaphene	8001-35-2	µg/L	ND U	ND U		ND U	ND U	5.0 U	5.0 U	5.0 U	5 U		<5.0
SW8141A	Dimethoate	60-51-5	µg/L	ND U	ND U		ND U	ND U	1.0 U	1.0 U	1.0 U	.96 U		<.96
SW8141A	Disulfoton	298-04-4	µg/L	ND U	ND U		ND U	ND U	1.0 U	1.0 U	1.0 U	.96 U		<.96
SW8141A	Methyl parathion	298-00-0	µg/L	ND U	ND U		ND U	ND U	1.0 U	1.0 U	1.0 U	.96 U		<.96
SW8141A	Parathion	56-38-2	µg/L	ND U	ND U		ND U	ND U	1.0 U	1.0 U	1.0 U	.96 U		<.96
SW8141A	Phorate	298-02-2	µg/L	ND U	ND U		ND U	ND U	1.0 U	1.0 U	1.0 U	.96 U		
SW8141A	Thionazin	297-97-2	µg/L	ND U	10 U		ND U					<2.5		<5.0
SW8151	2,4,5-T	93-76-5	µg/L	ND U	ND U		ND U	0.25 U	0.25 U	0.25 U	0.25 U	.047 J		<0.25
SW8151	2,4,5-TP (Silvex)	93-72-1	µg/L	ND U	ND U		0.33 P	0.25 U	0.25 U	0.25 U	0.25 U	.25 U		<0.25
SW8151	2,4-D	94-75-7	µg/L	3.2 P	ND U		0.26 PJ	0.50 U	0.57 P	0.52 P	0.50 U	.5 U		0.28 J
SW8151	Dinoseb	88-85-7	µg/L	ND	ND U		ND U	1.3	0.37 P	0.76 P	0.20 U	.085 J		<0.20
SW8260B	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	ND U	ND U		ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	1,1,1-Trichloroethane	71-55-6	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	1,1,2-Trichloroethane	79-00-5	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	1,1-Dichloroethane	75-34-3	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	1,1-Dichloroethene	75-35-4	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	1,1-Dichloropropene	563-58-6	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	1,2,3-Trichloropropane	96-18-4	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	1,2-Dibromo-3-chloropropane	96-12-8	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	1,2-Dibromoethane	106-93-4	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	1,2-Dichlorobenzene	95-50-1	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0

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				7/1/2013	13-Dec	DUP_1213	6/25/2014	12/12/2014	6/16/2015	12/14/2015	6/20/2016	Jan-17	Sept_17	Dec_17
SW8260B	1,2-Dichloroethane	107-06-2	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	1,2-Dichloropropane	78-87-5	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	1,3-Dichlorobenzene	541-73-1	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	1,3-Dichloropropane	142-28-9	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	1,4-Dichlorobenzene	106-46-7	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
	1,4-Dioxane (p-Dioxane)		ug/l											<100
SW8260B	2,2-Dichloropropane	594-20-7	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	2-Butanone	78-93-3	µg/L	17	41 Z	39 DZ	23	35	16	5 U	5.0 U	<0.50	15.3	9.2
SW8260B	2-Hexanone	591-78-6	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<5.0	<5.0
SW8260B	4-Methyl-2-pentanone	108-10-1	µg/L	1 J	3 J	3 DJ	2 J	2 J	1 J	5 U	5.0 U	<0.50	<5.0	1.3 J
SW8260B	Acetone	67-64-1	µg/L	120	260 E	270 D	110	300 E	110	5 U	5.0 U	15.6	209	77.1
SW8260B	Acetonitrile	75-05-8	µg/L	ND U	28	25 D	35	100	49	40	5.0 U	<2.5	<5.0	<5.0
SW8260B	Acrolein	107-02-8	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Acrylonitrile	107-13-1	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Allyl Chloride	107-05-1	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Benzene	71-43-2	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Bromochloromethane	74-97-5	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Bromodichloromethane	75-27-4	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Bromoform	75-25-2	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Bromomethane	74-83-9	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Carbon disulfide	75-15-0	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Carbon tetrachloride	56-23-5	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Chlorobenzene	108-90-7	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Chloroethane	75-00-3	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Chloroform	67-66-3	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Chloromethane	74-87-3	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Chloroprene	126-99-8	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	cis-1,2-Dichloroethene	156-59-2	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	cis-1,3-Dichloropropene	10061-01-5	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Dibromochloromethane	124-48-1	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Dibromomethane	74-95-3	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Dichlorodifluoromethane	75-71-8	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Ethyl Methacrylate	97-63-2	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Ethylbenzene	100-41-4	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Iodomethane	74-88-4	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	2 J	<0.50	<1.0	<1.0
SW8260B	Isobutyl alcohol	78-83-1	µg/L	ND U	ND U	ND U	14 J	ND U	25 U	25 U	25 U			
SW8260B	Methacrylonitrile	126-98-7	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Methyl Methacrylate	80-62-6	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Methylene chloride	75-09-2	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Propionitrile	107-12-0	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<2.0	<4.0	<4.0
SW8260B	Silane, methoxytrimethyl-		ug/L	5 JN										
SW8260B	Silanol, trimethyl-		ug/L	19 JN				15 JN		13 JN				
SW8260B	Styrene	100-42-5	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Tetrachloroethene	127-18-4	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Toluene	108-88-3	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	trans-1,2-Dichloroethene	156-60-5	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	trans-1,3-Dichloropropene	10061-02-6	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	trans-1,4-Dichloro-2-butene	110-57-6	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Trichloroethene	79-01-6	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0

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				7/1/2013	13-Dec	DUP_1213	6/25/2014	12/12/2014	6/16/2015	12/14/2015	6/20/2016	Jan-17	Sept_17	Dec_17
SW8260B	Trichlorofluoromethane	75-69-4	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Trimethylsilyl fluoride+Sulfur diox		ug/L	220 JN										
SW8260B	Vinyl acetate	108-05-4	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Vinyl chloride	75-01-4	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<1.0	<1.0
SW8260B	Xylene (total)	1330-20-7	µg/L	ND U	ND U	ND U	ND U	ND U	5.0 U	5 U	5.0 U	<0.50	<2.0	<2.0
SW8270C	1,2,4,5-Tetrachlorobenzene	95-94-3	µg/L	ND U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	1,2,4-Trichlorobenzene	120-82-1	µg/L	ND U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	1,2-Dichlorobenzene	95-50-1	µg/L	ND U	10 U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	1,3,5-Trinitrobenzene	99-35-4	µg/L	ND U	ND U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	1,3-Dichlorobenzene	541-73-1	µg/L	ND U	10 U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	1,3-Dinitrobenzene	99-65-0	µg/L	ND U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	1,4-Dichlorobenzene	106-46-7	µg/L	ND U	10 U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	1,4-Naphthoquinone	130-15-4	µg/L	ND U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	1-Naphthylamine	134-32-7	µg/L	ND U	10 U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	2,2´-oxybis(1-chloropropane)	108-60-1	µg/L	ND U	ND U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	2,3,4,6-Tetrachlorophenol	58-90-2	µg/L	ND U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	2,4,5-Trichlorophenol	95-95-4	µg/L	25 U	25 U	ND U	ND U	ND U	25 U	25 U	25 U	<2.5		<5.0
SW8270C	2,4,6-Trichlorophenol	88-06-2	µg/L	10 U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	2,4-Dichlorophenol	120-83-2	µg/L	ND U	10 U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	2,4-Dimethylphenol	105-67-9	µg/L	10 U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	2,4-Dinitrophenol	51-28-5	µg/L	ND U	25 U	ND U	ND U	ND U	25 U	25 U	25 U	<5.0		<10.0
SW8270C	2,4-Dinitrotoluene	121-14-2	µg/L	ND U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	2,6-Dichlorophenol	87-65-0	µg/L	10 U	ND U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	2,6-Dinitrotoluene	606-20-2	µg/L	10 U	10 U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	2-Acetylaminofluorene	53-96-3	µg/L	ND U	ND U	ND U	ND U	ND U	20 U	20 U	20 U	<2.5		<5.0
SW8270C	2-Chloronaphthalene	91-58-7	µg/L	10 U	10 U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	2-Chlorophenol	95-57-8	µg/L	10 U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	2-Methylnaphthalene	91-57-6	µg/L	10 U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<0.17		<5.0
SW8270C	2-Methylphenol	95-48-7	µg/L	ND U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	2-Naphthylamine	91-59-8	µg/L	10 U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	2-Nitroaniline	88-74-4	µg/L	25 U	25 U	100 U	ND U	ND U	25 U	25 U	25 U	<2.5		<5.0
SW8270C	2-Nitrophenol	88-75-5	µg/L	10 U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	3,3´-Dichlorobenzidine	91-94-1	µg/L	ND U	ND U	80 U	ND U	ND U	20 U	20 U	20 U	<2.5		<5.0
SW8270C	3,3´-Dimethylbenzidine	119-93-7	µg/L	10 U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	3-Methylcholanthrene	56-49-5	µg/L	ND U	10 U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	3-Methylphenol/4-Methylphenol	12-03-3	µg/L	9 J	150	170 D	ND U	9 J	41	10 U	10 U			16.8
SW8270C	3-Nitroaniline	99-09-2	µg/L	ND U	25 U	ND U	ND U	ND U	25 U	25 U	25 U	<2.5		<5.0
SW8270C	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	ND U	ND U	ND U	ND U	ND U	25 U	25 U	25 U	<5.0		<10.0
SW8270C	4-Aminobiphenyl	92-67-1	µg/L	20 U	ND U	80 U	ND U	ND U	20 U	20 U	20 U	<2.5		<5.0
SW8270C	4-Bromophenyl-phenylether	101-55-3	µg/L	10 U	ND U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	4-Chloro-3-methylphenol	59-50-7	µg/L	10 U	10 U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	4-Chloroaniline	106-47-8	µg/L	10 U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	4-Chlorophenyl-phenylether	7005-72-3	µg/L	10 U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	4-Nitroaniline	100-01-6	µg/L	25 U	ND U	100 U	ND U	ND U	25 U	25 U	25 U	<2.5		<5.0
SW8270C	4-Nitrophenol	100-02-7	µg/L	25 U	ND U	100 U	ND U	ND U	25 U	25 U	25 U	<5.0		<10.0
SW8270C	5-Nitro-o-toluidine	99-55-8	µg/L	10 U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	7,12-Dimethylbenz(a)anthracene	57-97-6	µg/L	10 U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Acenaphthene	83-32-9	µg/L	10 U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<0.22		<5.0
SW8270C	Acenaphthylene	208-96-8	µg/L	10 U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<0.21		<5.0

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SW8270C	Acetophenone	98-86-2	µg/L	10 U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		1.2 J
SW8270C	Anthracene	120-12-7	µg/L	10 U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		0.61 J
SW8270C	Benzo(a)anthracene	56-55-3	µg/L	10 U	ND U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Benzo(a)pyrene	50-32-8	µg/L	10 U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Benzo(b)fluoranthene	205-99-2	µg/L	10 U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Benzo(g,h,i)perylene	191-24-2	µg/L	ND U	ND U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Benzo(k)fluoranthene	207-08-9	µg/L	ND U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Benzyl alcohol	100-51-6	µg/L	1	ND U	40 U	ND U	4 J	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Bis(2-chloroethoxy)methane	111-91-1	µg/L	ND U	ND U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Bis(2-chloroethyl)ether	111-44-4	µg/L	ND U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Bis(2-ethylhexyl)phthalate	117-81-7	µg/L	10 U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		1.0 J
SW8270C	Butyl benzyl phthalate	85-68-7	µg/L	10 U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Chlorobenzilate	510-15-6	µg/L	ND U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Chrysene	218-01-9	µg/L	ND U	ND U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Diallate	2303-16-4	µg/L	ND U	10 U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Dibenzo(a,h)anthracene	53-70-3	µg/L	ND U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Dibenzofuran	132-64-9	µg/L	ND U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Diethylphthalate	84-66-2	µg/L	10 U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		0.15 J
SW8270C	Dimethylphthalate	131-11-3	µg/L	ND U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Di-n-butyl phthalate	84-74-2	µg/L	10 U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Di-n-octyl phthalate	117-84-0	µg/L	10 U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Ethyl methanesulfonate	62-50-0	µg/L	ND U	10 U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Famphur	52-85-7	µg/L	10 U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<5.0		<10.0
SW8270C	Fluoranthene	206-44-0	µg/L	ND U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Fluorene	86-73-7	µg/L	ND U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<0.17		<5.0
SW8270C	Hexachlorobenzene	118-74-1	µg/L	ND U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Hexachlorobutadiene	87-68-3	µg/L	10 U	ND U	40 U	ND U	ND U	10 U	10 U	10 U			<5
SW8270C	Hexachlorocyclopentadiene	77-47-4	µg/L	ND U	ND U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Hexachloroethane	67-72-1	µg/L	ND U	10 U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Hexachloropropene	1888-71-7	µg/L	ND U	10 U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10 U	ND U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Isodrin	465-73-6	µg/L	10 U	ND U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Isophorone	78-59-1	µg/L	10 U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Isosafrole	120-58-1	µg/L	ND U	ND U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Kepone	143-50-0	µg/L	ND U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<5.0		<10.0
SW8270C	Methapyrilene	91-80-5	µg/L	ND U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Methyl methanesulfonate	66-27-3	µg/L	ND U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Naphthalene	91-20-3	µg/L	10 U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<0.18		<5.0
SW8270C	Nitrobenzene	98-95-3	µg/L	10 U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	N-Nitrosodiethylamine	55-18-5	µg/L	10 U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	N-Nitrosodimethylamine	62-75-9	µg/L	ND U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	N-Nitroso-di-n-butylamine	924-16-3	µg/L	ND U	ND U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5
SW8270C	N-Nitroso-di-n-propylamine	621-64-7	µg/L	ND U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5
SW8270C	N-Nitrosodiphenylamine	86-30-6	µg/L	10 U	ND U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	N-Nitrosomethylethylamine	10595-95-6	µg/L	10 U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	N-Nitrosopiperidine	100-75-4	µg/L	ND U	ND U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	N-Nitrosopyrrolidine	930-55-2	µg/L	10 U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	O,O,O-Triethylphosphorothioate	126-68-1	µg/L	ND U	10 U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	o-Toluidine	95-53-4	µg/L	ND U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0

	CELL 7 PLCRS													
				07/01/13	3/13/2014	3/13/2014	06/25/14	12/12/14	06/16/15	12/14/2015				
				7/1/2013	13-Dec	DUP_1213	6/25/2014	12/12/2014	6/16/2015	12/14/2015	6/20/2016	Jan-17	Sept_17	Dec_17
SW8270C	p-Dimethylaminoazobenzene	60-11-7	µg/L	10 U	ND U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Pentachlorobenzene	608-93-5	µg/L	ND U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Pentachloronitrobenzene	82-68-8	µg/L	ND U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Pentachlorophenol	87-86-5	µg/L	ND U	25 U	100 U	ND U	ND U	25 U	25 U	25 U	<5.0		<10.0
SW8270C	Phenacetin	62-44-2	µg/L	10 U	ND U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
SW8270C	Phenanthrene	85-01-8	µg/L	ND U	10 U	40 U	ND U	ND U	10 U	10 U	10 U	<0.17		<5.0
SW8270C	Phenol	108-95-2	µg/L	20	10 U	40 U	ND U	34	6 J	10 U	10 U	<2.5		19.4
SW8270C	p-Phenylenediamine	106-50-3	µg/L	10 U	10 U	ND U	ND U	ND U	10 U	10 U	10 U			<5.0
SW8270C	Pronamide	23950-58-5	µg/L	10 U	10 U	ND U	ND U	ND U	10 U	10 U	10 U	<2.5		<5.0
	Sulfide	18496-25-8	mg/L		2.00 U		2.00 U	25.3	2 U		20 U	<0.61	6.4	
EPA1613B	2378-TCDF		pg/l				ND		2 U					ND
EPA1613B	2378-TCDD		pg/l				ND		2 U		10 U			ND
ASTM D517	Total Uranium	7440-61-1	ng/l											1.07 ± 0.050 (0.193) C:NA T:NA
EPA 537	Perfluorobutanesulfonic acid PFBS	375-73-5	ng/l											<84
EPA 537	Perfluoroheptanoic acid PFHpA	375-85-9	ng/l											23
EPA 537	Perfluorohexanesulfonic acid PFHxS	355-46-4	ng/l											13 J
EPA 537	Perfluorononanoic acid PFNA	375-95-1	ng/l											<19
EPA 537	Perfluorooctanesulfonic acid PFOS	1763-23-1	ng/l											<38
EPA 537	Perfluorooctanoic acid PFOA	335-67-1	ng/l											29
EPA 903.1	Radium-226	13982-63-3	ng/l											3.02 ± 1.28 (1.13) C:NA T:33%
EPA 904.0	Radium-228	15262-20-1	ng/l											4.14 ± 1.79 (2.70) C:75% T:16%
	6:2 FTS		ng/l											
	8:2 FTS		ng/l											
	N-ethyl perfluorooctandsulfamidoacetic acidNEtFOSAA		ng/l											
	N-methylperflurooctansulfamicacetic acid NMeFOSAA		ng/l											
	perfluorobutanoic acid PFBA		ng/l											
	perfluorodecansulfonic acid PFDS		ng/l											
	perfluorodecanoic acid PFDA		ng/l											
	perfluorododecanoic acid PFDoA		ng/l											
	perfluoroheptanesulfonic acid PFHps		ng/l											
	perfluorohexanoic acid PFHxA		ng/l											
	perfluorooctane sulfonamide FOSA		ng/l											
	perfluoropentanoic acid PFPeA		ng/l											
	perfluorotetradecanoic acid PFTeA		ng/l											
	perfluorotridecnaoic acid PFTriA		ng/l											
	perfluoroundecanoic acid PFUnA		ng/l											
	n-Nitrosomorpholine													
	Dimethylbenz(A) Antracene													
	Bis(2-chloroisopropyl)ether													
	total PFOA/PFAS													

CELL 7 PLCRS								
	Aug_18	Dec_18	Jun_19	Dec_19		June_20		
Analyte								
pH	7.11	7.43	7.81	7.48		7.36		
DO	0.05	2.01	0	1.7		2.59		
Spec cond	788	1112	876	2194		>20,000		
ORP	-55.8	-75.1	-96.3	-79.2		-73.9		
Pyrene	U	<5	<5.0	<.25		<5		
Safrole	U	<5	<5.0	<.25		<5		
Cyanide	<10	21.3	4.6J	7		4.7	J	
Total Organic Carbon	94.7	84.8	257 D	147		69.2		
Dioxin								
Bromide	353	350	516	422		480		
Sulfate	10.3	6.5	7.2	335		129 D		
Nitrogen, Kjeldahl, Total	51.2	56.3	104 D	65.2 D		93.8 D		
Nitrate as N	<.05	0.051	0.090	<0.50 D		<0.050		
Nitrite as N	<.05	<.05	<0.050	<0.050		<0.050		
Chemical Oxygen Demand	1810	1690	3870	3410		2240		
Phenolics, Total Recoverable	236	177		358 D		278 D		
Chromium, Hexavalent	<.1D	<.02	<.02	<.02		<.02		
Color		15		50.0				
Alkalinity, Total (As CaCO3)	275	216	336	223		176		
Hardness (As CaCO3)	20400	20100	28800	26700		28400		
Total Dissolved Solids	54000	54400	74600	62000		58800		
Chloride	30500	29600	50600	48500		49500		
Nitrogen, Ammonia (As N)	51.7D	29.8	93.3	78.7		82.2		
Biochemical Oxygen Demand	137D	134	494	235		103		
Aluminum	<10000 D	<200	<1000 D	77.6J D		<1000 D		
Antimony	<3000 D	18.8J	<300 D	45.4J D		<300 D		
Arsenic	<500 D	<10.0	<50.0 D	28.4 D		<50.0 D		
Barium	3580J D	3130	6450 D	5840 D		5550 D		
Beryllium	<250 D	<5.0	1.7J D	<10.0 D		0.58J D		
Boron	612J D	718	334 D	1040 D		92.5J D		
Cadmium	<125 D	14.4J D	<12.5 D	<5.0 D		<12.5 D		
Calcium	8140000 D	7430000	9750000 D	9300000 D		9900000 D		
Chromium	<500 D	<10.0	46.1J D	<20.0 D		157 D		
Cobalt	<2500 D	5.0J	<250 D	<100 D		<250 D		
Copper	<1250 D	<25.0	59.0J D	<50.0 D		56.0J D		
Iron	10600 D	362	150 D	388 D		109 D		
Lead	<250 D	<50.0 D	<25.0 D	<10.0 D		<25.0 D		
Magnesium	18100 D	11400	4420 D	11100 D		6450 D		
Manganese	3250 D	649	1440 D	750 D		221 D		
Nickel	<2000 D	<40.0	<200 D	<80.0 D		72.0J D		
Potassium	3930000 D	4600000 D	6390000 D	5700000 D		5550000 D		
Selenium	<500 D	<10.0	125 D	17.8J D		<50.0 D		
Silver	<500 D	<10.0	<50.0 D	<20.0 D		18.8J D		
Sodium	6910000 D	6870000 D	9900000 D	7950000 D		8800000 D		
Thallium	<500 D	4.5J	<50.0 D	<20.0 D		<50.0 D		
Tin	<2500 D	<50.0	<250 D	<100 D		<250 D		
Vanadium	<2500 D	<50.0	<250 D	13.6J D		<250 D		

CELL 7 PLCRS								
	Aug_18	Dec_18	Jun_19	Dec_19		June_20		
Zinc	<1000 D	16.8J D	132 D	<40.0 D		<100 D		
Mercury	<.2	<0.20	0.15J	0.15J		<.2		
4,4´-DDD	<0.10	<0.10	<0.10	<0.10		<.1		
4,4´-DDE	<0.10	<0.10	<0.10	<0.10		<.1		
4,4´-DDT	<0.10	<0.10	<0.10	<0.10		<.1		
Aldrin	<0.050	<0.050	<0.050	<0.050		<.05		
alpha-BHC	<0.050	<.05	<0.050	<.05		<.05		
Aroclor 1016	<1.0	<1.0	<1.0	<1.0		<1		
Aroclor 1221	<2.0	<2.0	<2.0	<2.0		<1		
Aroclor 1232	<1.0	<1.0	<1.0	<1.0		<1		
Aroclor 1242	<1.0	<1.0	<1.0	<1.0		<1		
Aroclor 1248	<1.0	<1.0	<1.0	<1.0		<1		
Aroclor 1254	<1.0	<1.0	<1.0	0.68J		<1		
Aroclor 1260	<1.0	<1.0	<1.0	<1.0		<1		
beta-BHC	<.05	<.05	<0.050	<.05		<.05		
Chlordane								
delta-BHC	<.05	<.05	<0.050	<.05		<.05		
Dieldrin	<0.10	<0.10	<0.10	<0.10		<.1		
Endosulfan I	<0.050	<0.050	<0.050	<0.050		<.05		
Endosulfan II	<0.10	<0.10	<0.10	<0.10		<.1		
Endosulfan sulfate	<0.10	<0.10	<0.10	<0.10		<.1		
Endrin	<0.10	<0.10	<0.10	<0.10		<.1		
Endrin aldehyde	<0.10	<0.10	<0.10	<0.10		<.1		
gamma-BHC	<.05	<.05	<0.050	<.05		<.05		
Heptachlor	<.05	<0.050	<0.050	<0.050		<.05		
Heptachlor epoxide	<0.050	<0.050	<0.050	<0.050		<.05		
Methoxychlor	<0.50	<0.50	<0.50	<0.50		<.5		
Toxaphene	<5.0	<5.0	<5.0	<5.0		<.5		
Dimethoate	<.95	<5	<5	<.25		<5		
Disulfoton	<.95	<5	<5.0			<5		
Methyl parathion	<.95	<5	<5.0	<.25		<5		
Parathion	<.95	<5	<5.0	<.25		<5		
Phorate								
Thionazin	U	<5		<.25		<5		
2,4,5-T	0.055J	0.19J	<0.25	<0.25		0.12	J	
2,4,5-TP (Silvex)	<0.25	<0.25	<0.25	0.16J		<.25		
2,4-D	<0.50	1.4	1.7	1.0		1.3		
Dinoseb	0.14J	0.16J	0.30	0.43		<.2		
1,1,1,2-Tetrachloroethane	<1.0	<1.0	<1.0	<1		<1		
1,1,1-Trichloroethane	<1.0	<1.0	<1.0	<1.0		<1		
1,1,2,2-Tetrachloroethane	<1.0	<1.0	<1.0	<1.0		<1		
1,1,2-Trichloroethane	<1.0	<1.0	<1.0	<1.0		<1		
1,1-Dichloroethane	<1.0	<1.0	<1.0	<1.0		<1		
1,1-Dichloroethene	<1.0	<1.0	<1.0	<1.0		<1		
1,1-Dichloropropene	<1.0	<1.0	<1.0	<1.0		<1		
1,2,3-Trichloropropane	<1.0	<1.0	<1.0	<1.0		<1		
1,2-Dibromo-3-chloropropane	<1.0	<1.0	<1.0	<1.0		<1		
1,2-Dibromoethane	<1.0	<1.0	<1.0	<1.0		<1		
1,2-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0		<1		

CELL 7 PLCRS								
	Aug_18	Dec_18	Jun_19	Dec_19		June_20		
1,2-Dichloroethane	<1.0	<1.0	<1.0	<1.0		<1		
1,2-Dichloropropane	<1.0	<1.0	<1.0	<1.0		<1		
1,3-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0		<1		
1,3-Dichloropropane	<1.0	<1.0	<1.0	<1.0		<1		
1,4-Dichlorobenzene	<1.0	<1.0	<1.0	<1.0		<1		
1,4-Dioxane (p-Dioxane)	0.59	2.7	<100 SIM 2.4ug/l	4.2		<100 SIM 3.3 ug/l		
2,2-Dichloropropane	<1.0	<1.0	<1.0	<1.0		<1		
2-Butanone	16.7	14.4	10.8	13.1		14.2		
2-Hexanone	<5.0	<5.0	<5.0	<5.0		<5		
4-Methyl-2-pentanone	1.8J	1.6J	1.4J	<5.0		<5		
Acetone	274 D	195	103	179		124		
Acetonitrile	62.9	156	128	193		<5		
Acrolein	<1.0	<1.0	<1.0	<1.0		<1		
Acrylonitrile	<1.0	<1.0	<1.0	<1.0		<1		
Allyl Chloride	<1.0	<1.0	<1.0	<1.0		<4		
Benzene	<1.0	<1.0	<1.0	<1.0		<1		
Bromochloromethane	<1.0	<1.0	<1.0	<1.0		<1		
Bromodichloromethane	<1.0	<1.0	<1.0	<1.0		<1		
Bromoform	<1.0	<1.0	<1.0	<1.0		<1		
Bromomethane	<1.0	<1.0	<1.0	<1.0		<1		
Carbon disulfide	<1.0	1.1	<1.0	<1.0		<1		
Carbon tetrachloride	<1.0	<1.0	<1.0	<1.0		<1		
Chlorobenzene	<1.0	<1.0	<1.0	<1.0		<1		
Chloroethane	<1.0	<1.0	<1.0	<1.0		<1		
Chloroform	<1.0	<1.0	<1.0	<1.0		<1		
Chloromethane	<1.0	<1.0	<1.0	<1.0		<1		
Chloroprene	<1.0	<1.0	<1.0	<1.0		<1		
cis-1,2-Dichloroethene	<1.0	<1.0	<1.0	<1.0		<1		
cis-1,3-Dichloropropene	<1.0	<1.0	<1.0	<1.0		<1		
Dibromochloromethane	<1.0	<1.0	<1.0	<1.0		<1		
Dibromomethane	<1.0	<1.0	<1.0	<1.0		<1		
Dichlorodifluoromethane	<1.0	<1.0	<1.0	<1.0		<1		
Ethyl Methacrylate	<1.0	<1.0	<1.0	<1.0		<1		
Ethylbenzene	<1.0	<1.0	<1.0	<1.0		<1		
Iodomethane	<1.0	<1.0	<1.0	<1.0		4.2		
Isobutyl alcohol				5.8JJ		<20		
Methacrylonitrile	<1.0	<1.0	<1.0	<1.0		<1		
Methyl Methacrylate	<1.0	<1.0	<1.0	<1.0		<1		
Methylene chloride	<1.0	<1.0	<1.0	<1.0		<1		
Propionitrile	<4.0	<4.0	<4.0	<4.0		<4		
Silane, methoxytrimethyl-			<1.0					
Silanol, trimethyl-								
Styrene	<1.0	<1.0	<1.0			<1		
Tetrachloroethene	<1.0	<1.0	<1.0	<1.0		<1		
Toluene	<1.0	<1.0	<1.0	<1.0		<1		
trans-1,2-Dichloroethene	<1.0	<1.0	<1.0	<1.0		<1		
trans-1,3-Dichloropropene	<1.0	<1.0	<1.0	<1.0		<1		
trans-1,4-Dichloro-2-butene	<1.0	<1.0	<1.0	<1.0		<1		
Trichloroethene	<1.0	<1.0	<1.0	<1.0		<1		

CELL 7 PLCRS								
	Aug_18	Dec_18	Jun_19	Dec_19		June_20		
Trichlorofluoromethane	<1.0	<1.0	<1.0	<1.0		<1		
Trimethylsilyl fluoride+Sulfur diox								
Vinyl acetate	<1.0	<1.0	<1.0	<1.0		<1		
Vinyl chloride	<1.0	<1.0	<1.0	<1.0		<1		
Xylene (total)	<3.0	<3.0	<3.0	<3.0		<3		
1,2,4,5-Tetrachlorobenzene	U	<5.0	<5.0	<25.0 D		<5		
1,2,4-Trichlorobenzene	U	<5.0	<5.0	<25.0 D		<5		
1,2-Dichlorobenzene	U	<5.0	<5.0	<25.0 D		<5		
1,3,5-Trinitrobenzene	U	<5.0	<5.0	<25.0 D		<5		
1,3-Dichlorobenzene	U	<5.0	<5.0	<25.0 D		<5		
1,3-Dinitrobenzene	U	<5.0	<5.0	<25.0 D		<5		
1,4-Dichlorobenzene	U	<5.0	<5.0	<25.0 D		<5		
1,4-Naphthoquinone	U	<5.0	<5.0	<25.0 D		<5		
1-Naphthylamine	U	<5.0	<5.0	<25.0 D		<5		
2,2´-oxybis(1-chloropropane)		<5.0	<5.0	<25.0 D		<5		
2,3,4,6-Tetrachlorophenol	U	<5.0	<5.0	<25.0 D		<5		
2,4,5-Trichlorophenol	U	<5.0	<5.0	<25.0 D		<5		
2,4,6-Trichlorophenol	U	<5.0	<5.0	<25.0 D		<5		
2,4-Dichlorophenol	U	<5.0	<5.0	<25.0 D		<5		
2,4-Dimethylphenol	U	<5.0	<5.0	<25.0 D		<5		
2,4-Dinitrophenol	U	<10.0	<10.0	<50.0 D		<10		
2,4-Dinitrotoluene	U	<5.0	<5.0	<25.0 D		<5		
2,6-Dichlorophenol	U	<5.0	<5.0	<25.0 D		<5		
2,6-Dinitrotoluene	U	<5.0	<5.0	<25.0 D		<5		
2-Acetylaminofluorene	U	<5.0	<5.0	<25.0 D		<5		
2-Chloronaphthalene	U	<5.0	<5.0	<25.0 D		<5		
2-Chlorophenol	U	<5.0	<5.0	<25.0 D		<5		
2-Methylnaphthalene	U	<5.0	<5.0	<25.0 D		<5		
2-Methylphenol	0.328	<5.0	1.0J	<25.0 D		0.63	J	
2-Naphthylamine	U	<5.0	<5.0	<25.0 D		<5		
2-Nitroaniline	U	<5.0	<5.0	<25.0 D		<5		
2-Nitrophenol	U	<5.0	<5.0	<25.0 D		<5		
3,3´-Dichlorobenzidine	U	<5.0	<5.0	<25.0 D		<5		
3,3´-Dimethylbenzidine	U	<5.0	<5.0	<25.0 D		<5		
3-Methylcholanthrene	U	<5.0	<5.0	<25.0 D		<5		
3-Methylphenol/4-Methylphenol	46.8	39.1	110 D			44.4		
3-Nitroaniline	U	<5.0	<5.0	<25.0 D		<5		
4,6-Dinitro-2-methylphenol	U	<10.0	<10.0	<50.0 D		<10		
4-Aminobiphenyl	U	<5.0	<5.0	<25.0 D		<5		
4-Bromophenyl-phenylether	U	<5.0	<5.0	<25.0 D		<5		
4-Chloro-3-methylphenol	U	<5.0	<5.0	<25.0 D		<5		
4-Chloroaniline	U	<5.0	<5.0	<25.0 D		<5		
4-Chlorophenyl-phenylether	U	<5.0	<5.0	<25.0 D		<5		
4-Nitroaniline	U	<5.0	<5.0	<25.0 D		<5		
4-Nitrophenol	U	<10.0	<10.0	<50.0 D		<10		
5-Nitro-o-toluidine	U	<5.0	<5.0	<25.0 D		<5		
7,12-Dimethylbenz(a)anthracene		<5.0	<5.0	<25.0 D		<5		
Acenaphthene	U	<5.0	<5.0	<25.0 D		<5		
Acenaphthylene	U	<5.0	<5.0	<25.0 D		<5		

CELL 7 PLCRS								
	Aug_18	Dec_18	Jun_19	Dec_19		June_20		
Acetophenone	U	<5.0	<5.0	<25.0 D		<5		
Anthracene	U	<5.0	<5.0	<25.0 D		<5		
Benzo(a)anthracene	U	<5.0	<5.0	<25.0 D		<5		
Benzo(a)pyrene	U	<5.0	<5.0	<25.0 D		<5		
Benzo(b)fluoranthene	U	<5.0	<5.0	<25.0 D		<5		
Benzo(g,h,i)perylene	U	<5.0	<5.0	<25.0 D		<5		
Benzo(k)fluoranthene	U	<5.0	<5.0	<25.0 D		<5		
Benzyl alcohol	U	<5.0	<5.0	<25.0 D		<5		
Bis(2-chloroethoxy)methane	U	<5.0	<5.0	<25.0 D		<5		
Bis(2-chloroethyl)ether	U	<5.0	<5.0	<25.0 D		<5		
Bis(2-ethylhexyl)phthalate	U	<5.0	<5.0	8.9J D		<5		
Butyl benzyl phthalate	U	<5.0	<5.0	<25.0 D		<5		
Chlorobenzilate	U	<5.0	<5.0	<25.0 D		<5		
Chrysene	U	<5.0	<5.0	<25.0 D		<5		
Diallate	U	<5.0	<5.0	<25.0 D		<5		
Dibenzo(a,h)anthracene	U	<5.0	<5.0	<25.0 D		<5		
Dibenzofuran	U	<5.0	<5.0	<25.0 D		<5		
Diethylphthalate	U	<5.0	<5.0	<25.0 D		<5		
Dimethylphthalate	U	<5.0	<5.0	<25.0 D		<5		
Di-n-butyl phthalate	U	<5.0	<5.0	<25.0 D		<5		
Di-n-octyl phthalate	U	<5.0	<5.0	<25.0 D		<5		
Ethyl methanesulfonate	U	<5.0	<5.0	<25.0 D		<5		
Famphur	<.95	<10.0	<10.0	<50.0 D		<10		
Fluoranthene	U	<5.0	<5.0	<25.0 D		<5		
Fluorene	U	<5.0	<5.0	<25.0 D		<5		
Hexachlorobenzene	U	<5.0	<5.0	<.25		<5		
Hexachlorobutadiene	U	<5	<5	<025		<5		
Hexachlorocyclopentadiene	U	<5	<5.0	<25.0 D		<5		
Hexachloroethane	U	<5.0	<5.0	<25.0 D		<5		
Hexachloropropene	U	<5.0	<5.0	<25.0 D		<5		
Indeno(1,2,3-cd)pyrene	U	<5.0	<5.0	<25.0 D		<5		
Isodrin	U	<5.0	<5.0	<25.0 D		<5		
Isophorone	U	<5.0	<5.0	<25.0 D		<5		
Isosafrole	U	<5.0	<5.0	<25.0 D		<5		
Kepone	U	<10.0	<10.0	<50.0 D		<10		
Methapyrilene	U	<5.0	<5.0	<25.0 D		<5		
Methyl methanesulfonate	U	<5		<25.0 D		<5		
Naphthalene	U	<5.0	<5.0	<25.0 D		<5		
Nitrobenzene	U	<5.0	<5.0	<25.0 D		<5		
N-Nitrosodiethylamine	U	<5	<5.0	<25.0 D		<5		
N-Nitrosodimethylamine	U	<5	<5.0	<25.0 D		<5		
N-Nitroso-di-n-butylamine	U	<5.0	<5.0	<25.0 D		<5		
N-Nitroso-di-n-propylamine	U	<5.0	<5.0	<25.0 D		<5		
N-Nitrosodiphenylamine	U	<5.0	<5.0	<25.0 D		<5		
N-Nitrosomethylethylamine	U	<5.0	<5.0	<25.0 D		<5		
N-Nitrosopiperidine	U	<5.0	<5.0	<25.0 D		<5		
N-Nitrosopyrrolidine	U	<5.0	<5.0	<25.0 D		<5		
O,O,O-Triethylphosphorothioate	U	<5.0	<5.0	<25.0 D		<5		
o-Toluidine	U	<5.0	<5.0	<25.0 D		<5		

CELL 7 PLCRS								
	Aug_18	Dec_18	Jun_19	Dec_19		June_20		
p-Dimethylaminoazobenzene	U	<5.0	<5.0	<25.0 D		<5		
Pentachlorobenzene	U	<5.0	<5.0	<25.0 D		<5		
Pentachloronitrobenzene	U	<5.0	<5.0	<25.0 D		<5		
Pentachlorophenol	2.37	<10.0	<10.0	<50.0 D		<10		
Phenacetin	U	<5.0	<5.0	<25.0 D		<5		
Phenanthrene	U	<5.0	<5.0	<25.0 D		<5		
Phenol	52.2	31.4	115 D	70.0 D		87.1	D	
p-Phenylenediamine	U	<5	<10.0	<50		<10		
Pronamide	U	<5.0	<5.0	<.25		<5		
Sulfide	1.6J	8	8.0	4.8		25.6		
2378-TCDF	ND	ND		ND		ND		
2378-TCDD	ND	ND	ND	ND		ND		
Total Uranium	0.347 ± 0.013 (0.262) C:NA T:NA	.855+-.049 (2.62) C:NA T:NA	0.281 ± 0.014 (0.262) C:NA T:NA	0.789 ± 0.039 (0.262) C:NA T:NA		0.751 ± 0.045 (2.620) C:NA T:NA		
Perfluorobutanesulfonic acid PFBS	130	130		170		160		
Perfluoroheptanoic acid PFHpA	19	18		24		26		
Perfluorohexanesulfonic acid PFHxS	4.7	4.2		11B		8.6	B	
Perfluorononanoic acid PFNA	1.7	1.2		1.4J		5		
Perfluorooctanesulfonic acid PFOS	3.3	2		3		16		
Perfluorooctanoic acid PFOA	22	22		32		50		
Radium-226	6.34 ± 2.29 (1.80) C:NA T:42%	15.7 ± 7.46 (2.36) C:NA T:88%	9.05 ± 2.77 (0.511) C:NA T:85%	2.93 ± 1.62 (1.44) C:NA T:61%		3.77 ± 2.18 (0.852) C:NA T:43%		
Radium-228	10.2 ± 3.75 (5.39) C:72% T:85%	6.62 ± 2.38 (3.68) C:80% T:89%	6.45 ± 1.59 (1.46) C:78% T:52%	3.90 ± 2.48 (4.69) C:81% T:24%		7.79 ± 2.29 (2.88) C:78% T:33%		
6:2 FTS	5.4	6.6		11J		10	J	
8:2 FTS	19U	ND		ND		ND		
N-ethyl perfluorooctandsulfamidoacetic acidNEtFOSAA	19U	ND		ND		ND		
N-methylperflurooctansulfamicacetic acid NMeFOSAA	19U	ND		ND		ND		
perfluorobutanoic acid PFBA	260	170		180		260	B	
perfluorodecansulfonic acid PFDS	19U	ND		ND		ND		
perfluorodecanoic acid PFDA	4.5	0.44		.38J		3.2		
perfluorododecanoic acid PFDoA	19U	ND		ND		ND		
perfluoroheptanesulfonic acid PFHps	19U	ND		ND		0.26	J	
perfluorohexanoic acid PFHxA	210	250		320		370		
perfluorooctane sulfonamide FOSA	19U	ND		1J		2.2	B	
perfluoropentanoic acid PFPeA	100	94		130		140		
perfluorotetradecanoic acid PFTeA	19U	ND		ND		ND		
perfluorotridecnaoic acid PFTriA	19U	ND		ND		ND		
perfluoroundecanoic acid PFUnA	19U	ND		ND		ND		
n-Nitrosomorpholine	U							
Dimethylbenz(A) Antracene	U							
Bis(2-chloroisopropyl)ether	U							
total PFOA/PFAS	760.6	698.44		859		1051.26		

Appendix 1

June 2020 Pace Analytical Laboratory Report and QA/QC

(see attached CD)

BABYLON LANDFILL - FIELD DATA - MAY 28, 2020

Traditional Wells - Groundwater Sampling Data

WELL #	Well Survey Elevation	Well Size	Metal or PVC	TPVC (in ft) (Top of PVC)	TOC (in ft) (Top of Casing)	BOC (in ft) (Bottom of Casing)	One Well Volume (Gallons)	Three Well Volumes (Gallons)	Groundwater Contour Levels
GM-2D	69.25	4"	PVC	25.59	26.40	86.00	38.92	116.76	42.85
GM-4D	62.43	4"	PVC	17.77	18.40	91.40	47.67	143.01	44.03
GM-5D	62.35	4"	PVC	18.25	18.67	91.80	47.75	143.26	43.68
GM-6D	63.84	4"	PVC	19.90	19.98	92.80	47.55	142.65	43.86
GM-7D	63.23	4"	PVC	18.95	19.63	91.10	46.67	140.01	43.60
GM-15D	50.74	4"	PVC	11.35	11.77	84.50	47.49	142.48	38.97
GM-16D	?	4"	PVC	7.90	8.27	87.00	51.41	154.23	?
GM-17D	52.09	4"	PVC	13.27	13.68	87.70	48.34	145.01	38.41
GM-18D	?	4"	PVC	13.65	14.07	78.00	41.75	125.24	?
GM-19D	53.34	4"	PVC	13.40	13.60	87.40	48.19	144.57	39.74

WELL #	Start Purge	Stop Purge	Well Notes For Sampling
GM-2D	1410	1435	Clear, no odors
GM-4D	900	937	Clear, no odors
GM-5D	910	942	Slightly cloudy, orange tint, no odors
GM-6D	958	1025	Clear, slight yellow tint, no odors
GM-7D	1009	1040	Clear, no odors
GM-15D	1747	1816	Clear, yellow tint, no odors
GM-16D	1708	1735	Cloudy, orange tint, no odors
GM-17D	1700	1719	Clear, no odors
GM-18D	1620	1648	Clear, some small black particles, no odors
GM-19D	1550	1614	Clear, no odors

Water Quality Parameters

WELL #	Sampling Date	Sample Time	pH (SU)	ORP (mv)	Conductivity (umhos/cm2)	Temp. (oC)	Turbidity (NTU)	Dis. Oxygen (DO) mg/L
GM-2D	5/28/2020	1440	7.43	-74.2	228	19.8	18.70	4.85
GM-4D	5/28/2020	940	6.48	-30.7	260	20.4	6.03	5.39
GM-5D	5/28/2020	947	7.06	-58.2	549	18.5	79.50	5.45
GM-6D	5/28/2020	1030	8.04	-107.1	697	21.6	26.40	5.62
GM-7D	5/28/2020	1045	8.32	-122.7	854	20.9	8.84	6.64
GM-15D	5/28/2020	1820	7.33	-70.0	1096	17.7	60.00	4.42
GM-16D	5/28/2020	1740	6.49	-35.4	209	16.7	140.00	4.46
GM-17D	5/28/2020	1720	6.50	-32.1	194	17.3	16.00	5.28
GM-18D	5/28/2020	1650	7.35	-70.5	604	17.4	20.00	4.45
GM-19D	5/28/2020	1615	6.65	-30.9	235	18.6	24.50	4.83

BABYLON LANDFILL - FIELD DATA - MAY 28, 2020

Leachate Sampling Data

WELL #	Date	Start Purge	Stop Purge	Gallons Purged	Well Notes For Sampling
NNU-PLCRS	5/28/2020	1313	1317	~ 40	Black tint, black particles, sample hot, odors
NNU-SLCRS	5/28/2020	1331	1336	~ 40	Clear, small black particles, sample hot, odors
ONU-SLCRS	5/28/2020	1341	1347	~ 60	Clear, yellow tint, no odors
SA-SLCRS	5/28/2020	Direct Sample	Direct Sample	0	Cloudy, yellow tint, no odors
CELL - 7	5/28/2020	Direct Sample	Direct Sample	0	Clear, odors

Leachate Parameters

WELL #	Sampling Time	pH (SU)	ORP (mv)	Conductivity (umhos/cm2)	Temp. (oC)	Turbidity (NTU)	Dissolved Oxygen (DO) mg/L
NNU-PLCRS	1320	6.96	-51.8	>20,000	35.5	43.10	1.34
NNU-SLCRS	1340	6.66	-38.2	>20,000	33.0	21.70	0.83
ONU-SLCRS	1350	7.15	-60.5	>20,000	24.1	27.00	2.63
SA-SLCRS	1120	8.12	-112.9	10,160	20.7	75.90	5.82
CELL - 7	1210	7.36	-73.9	>20,000	23.4	5.89	2.59

Field Notes: **Equipment Blank @ 1130 w/new bailer**
MS/MSD performed on ONU-SLCRS @ 1352

NNU-PLCRS: New Northern U Primary * One Tap Location for Primary/Secondary (Top Road)

NNU-SLCRS: New Northern U Secondary * One Tap Location for Primary/Secondary (Top Road)

ONU-SLCRS: Old Northern U Secondary *One Tap Location for Primary/Secondary (Lower Road)

SA-SLCRS: Southern Ash Secondary *Use Bailer / Square Metal Door

CELL 7: Primary System * Use Bailer / First Round Black Cover (Left Cover)

BABYLON LANDFILL - FIELD DATA - MAY 29, 2020

Wells GM-26 to GM-28 / Groundwater Sampling Data

WELL #	Well Survey Elevation	Well Size	Metal or PVC	TPVC (in ft) (Top of PVC)	TOC (in ft) (Top of Casing)	BOC (in ft) (Bottom of Casing)	One Well Volume (Gallons)	Three Well Volumes (Gallons)	Groundwater Contour Levels
GM-26		4"	*PVC	18.66	*	32.50	9.04	27.11	
GM-26I		4"	*PVC	18.30	*	42.50	15.80	47.41	
GM-27		4"	PVC	24.75	25.07	36.70	7.59	22.78	
GM-27I		4"	PVC	25.02	25.23	47.50	14.54	43.63	
GM-28		4"	PVC	24.35	24.57	37.50	8.44	25.33	
GM-28I		4"	PVC	24.65	24.78	46.91	14.50	43.35	

WELL #	Start Purge	Stop Purge	Well Notes For Sampling
GM-26	900	928	Turbid, slight orange tint, no odors
GM-26I	908	934	Cloudy, slightly turbid, no odors
GM-27	948	1018	Clear, yellow tint, sample foamy, no odors
GM-27I	953	1025	Clear, yellow tint, sample foamy, no odors
GM-28	1045	1117	Clear, yellow tint, sample foamy, no odors
GM-28I	1048	1120	Clear, sample foamy, no odors

Water Quality Parameters

WELL #	Sampling Date	Sample Time	pH (SU)	ORP (mv)	Conductivity (umhos/cm2)	Temp. (oC)	Turbidity (NTU)	Dis. Oxygen (DO) mg/L
GM-26	5/29/2020	930	7.42	-62.8	612	17.8	400.0	5.21
GM-26I	5/29/2020	935	6.98	-53.0	406	17.2	170.0	5.29
GM-27	5/29/2020	1020	8.18	-115.8	1482	17.1	38.0	4.59
GM-27I	5/29/2020	1028	8.08	-106.0	1487	17.0	34.0	4.24
GM-28	5/29/2020	1120	7.51	-80.9	1924	19.5	20.0	4.61
GM-28I	5/29/2020	1123	8.29	-120.6	560	18.7	17.0	3.53

Field Notes: **Duplicate performed on GM-27I @ 1030**

GM-28I did not have a cover to the flush mount well

Notes: **N/F** : Not found due to high grass or deep snow.

N/S : No sample due to dry well or frozen well from extreme cold temps.

*PVC ABOVE TOC

PFCs Sampling Checklist

Date: 5/28/2020

Weather (*temp./precipitation*): Cloudy 73 Site Name: Babylon Landfill

Field Clothing and PPE:

- [x] No clothing or boots containing Gore-Tex™
- [x] All safety boots made from polyurethane and PVC
- [x] No materials containing Tyvek®
- [x] Field crew has not used fabric softener on clothing
- [x] Field crew has not used cosmetics, moisturizers, hand cream, or other related products this morning
- [x] Field crew has not applied unauthorized sunscreen or insect repellant

Field Equipment:

- [x] No Teflon® or LDPE containing materials on-site
- [x] All sample materials made from stainless steel, HDPE, acetate, silicon, or polypropylene
- [x] No waterproof field books on-site
- [x] No plastic clipboards, binders, or spiral hard cover notebooks on-site
- [x] No adhesives (Post-It Notes) on-site
- [x] Coolers filled with regular ice only. No chemical (blue) ice packs in possession

Sample Containers:

- [x] All sample containers made of HDPE or polypropylene
- [x] Caps are unlined and made of HDPE or polypropylene

Wet Weather (as applicable):

- [x] Wet weather gear made of polyurethane and PVC only

Equipment Decontamination:

- [x] "PFC-free" water on-site for decontamination of sample equipment. No other water sources to be used.
- [x] Alconox and Liquinox to be used as decontamination materials

Food Considerations:

- [x] No food or drink on-site with exception of bottled water and/or hydration drinks (i.e., Gatorade and Powerade) that is available for consumption only in the staging area

If any applicable boxes cannot be checked, the Field Lead shall describe the noncompliance issues below and work with field personnel to address noncompliance issues prior to commencement of that day's work. Corrective action shall include removal of noncompliance items from the site or removal of worker offsite until in compliance.

Describe the noncompliance issues (include personnel not in compliance) and action/outcome of noncompliance:

Field Lead Name: Brian Nichols

Field Lead Signature: [signature] Time: 800 AM

PFCs Sampling Checklist

Date: 5/29/2020

Weather (*temp./precipitation*): Cloudy 68 Site Name: Babylon Landfill

Field Clothing and PPE:

- [x] No clothing or boots containing Gore-Tex™
- [x] All safety boots made from polyurethane and PVC
- [x] No materials containing Tyvek®
- [x] Field crew has not used fabric softener on clothing
- [x] Field crew has not used cosmetics, moisturizers, hand cream, or other related products this morning
- [x] Field crew has not applied unauthorized sunscreen or insect repellant

Field Equipment:

- [x] No Teflon® or LDPE containing materials on-site
- [x] All sample materials made from stainless steel, HDPE, acetate, silicon, or polypropylene
- [x] No waterproof field books on-site
- [x] No plastic clipboards, binders, or spiral hard cover notebooks on-site
- [x] No adhesives (Post-It Notes) on-site
- [x] Coolers filled with regular ice only. No chemical (blue) ice packs in possession

Sample Containers:

- [x] All sample containers made of HDPE or polypropylene
- [x] Caps are unlined and made of HDPE or polypropylene

Wet Weather (as applicable):

- [x] Wet weather gear made of polyurethane and PVC only

Equipment Decontamination:

- [x] "PFC-free" water on-site for decontamination of sample equipment. No other water sources to be used.
- [x] Alconox and Liquinox to be used as decontamination materials

Food Considerations:

- [x] No food or drink on-site with exception of bottled water and/or hydration drinks (i.e., Gatorade and Powerade) that is available for consumption only in the staging area

If any applicable boxes cannot be checked, the Field Lead shall describe the noncompliance issues below and work with field personnel to address noncompliance issues prior to commencement of that day's work. Corrective action shall include removal of noncompliance items from the site or removal of worker offsite until in compliance.

Describe the noncompliance issues (include personnel not in compliance) and action/outcome of noncompliance:

Field Lead Name: Brian Nichols

Field Lead Signature: BNichols Time: 830 AM

Appendix 2

Baseline and Expanded Parameters List (6NYCRR Part 363-4.6(h))

(5) Data quality assessment. At the conclusion of each sampling event and analysis of the samples collected, data quality assessment must occur. A data quality assessment report must be submitted with the results from each sampling event. Data quality assessment must occur in two phases – data validation and data usability analysis.

(i) Data validation.

(a) For those sampling events for which only routine parameters are analyzed, the required data validation may be performed by the laboratory that performed the sample analyses.

(b) For those sampling events in which groundwater samples are analyzed for baseline or expanded parameters, the data validation must be performed by a person with experience with similar validation projects and who is not affiliated with the laboratory that performed the analyses and who is acceptable to the department.

(c) The data validation must be performed on all analytical data for the facility at a rate acceptable to the department, but not less than five percent of the data generated, and must consist, at a minimum, of the following:

(1) field records and analytical data are reviewed to determine whether the data are accurate and defensible. All AQA/AQC information must be reviewed along with any corrective actions taken during that sampling event; and

(2) all data summaries must be clearly marked to identify any data that are not representative of environmental conditions at the site, or that were not generated in accordance with the site analytical plan.

(ii) Data usability analysis.

(a) The data usability analysis must be performed on all analytical data generated by the requirements for this Part for the facility and must consist of the following:

(1) an assessment to determine if the data quality objectives were met;

(2) for consistency, comparison of the analytical data with the results from previous sampling events;

(3) evaluation of field duplicate results to indicate the samples are representative;

(4) comparison of the results of all field blanks, trip blanks, equipment rinstate blanks, and method blanks with full data sets to provide information concerning contaminants that may have been introduced during sampling, shipping, or analysis;

(5) evaluation of matrix effects to assess the performance of the analytical method with respect to the sample matrix, and determine whether the data have been biased high or low due to matrix effects;

(6) integration of the field and laboratory data with geological, hydrogeological, and meteorological data to provide information about the extent of contamination, if it occurs; and

(7) comparison of precision, accuracy, representativeness, comparability, completeness, and defensibility of the data generated with that required to meet the data quality objectives established in the site analytical plan.

(h) Water quality analysis tables.

The water quality analysis tables in this section list the routine, baseline, and expanded parameters for analysis of all monitoring samples. The department may modify the parameters for analysis based on the location of the landfill or site-specific characteristics of waste disposed at the landfill.

TABLE 1: ROUTINE PARAMETERS [1]

Common Name (and CAS number, as appropriate) [2]		
Field Parameters:	Leachate Indicators:	Inorganic Parameters (total):
Static water level (in wells and sumps)	Total Kjeldahl Nitrogen	Arsenic
Specific Conductance	Ammonia (7664-41-7)	Cadmium
Temperature	Nitrate	Calcium
Floaters or Sinkers [3]	Chemical Oxygen Demand	Iron
Temperature	Biochemical Oxygen Demand (BOD_5)	Lead
pH	Total Organic Carbon	Magnesium
Eh	Total Dissolved Solids	Manganese
Dissolved Oxygen [4]	Sulfate	Potassium
Field Observations [5]	Alkalinity	Sodium
Turbidity	Phenols (108-95-2)	
	Chloride	
	Bromide (24959-67-9)	
	Total hardness as $CaCO_3$	

TABLE 2A: BASELINE PARAMETERS: Field Parameters, Leachate Indicators, and Inorganic Parameters [6]

Common Name (and CAS number, as appropriate)[7]		
Field Parameters:	Leachate Indicators:	Inorganic Parameters (total unless otherwise noted):
Static water level (in wells and sumps)	Total Kjeldahl Nitrogen	Aluminum
Specific Conductance	Ammonia (7664-41-7)	Antimony
Temperature	Nitrate	Arsenic
Floaters or Sinkers[8]	Chemical Oxygen Demand	Barium
Temperature	Biochemical Oxygen Demand (BOD_5)	Beryllium
pH	Total Organic Carbon	Cadmium
Eh	Total Dissolved Solids	Calcium
Dissolved Oxygen[9]	Sulfate	Chromium
Field Observations[10]	Alkalinity	Chromium (Hexavalent)[11]
Turbidity	Phenols (108-95-2)	Cobalt
	Chloride	Copper
	Bromide (24959-67-9)	Cyanide
	Total hardness as $CaCO_3$	Iron
	Color	Lead
	Boron (7440-42-8)	Magnesium
		Manganese
		Mercury
		Nickel
		Potassium
		Selenium
		Silver
		Sodium
		Thallium
		Vanadium
		Zinc

TABLE 2B: BASELINE PARAMETERS: Organic Parameters[12]

Common Name (and CAS number, as appropriate)[13]		
Organic Parameters:		
Acetone (67-64-1)	1,1-Dichloroethane; Ethylidene chloride (75-34-3)	Styrene (100-42-5)
Acrylonitrile (107-13-1)	1,2-Dichloroethane; Ethylene dichloride (107-06-02)	1,1,1,2-Tetrachloroethane (630-20-6)
Benzene (71-43-2)	1,1-Dichloroethylene, 1,1-Dichloroethene; Vinylidene chloride (75-35-4)	1,1,2,2-Tetrachloroethane (79-34-5)
Bromochloromethane (74-97-5)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene (156-59-2)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene (127-18-4)
Bromodichloromethane (75-27-4)	trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene (156-60-2)	Toluene (108-88-3)
Bromoform; Tribromomethane (75-25-2)	1,2-Dichloropropane; Propylene dichloride (78-87-5)	1,1,1-Trichloroethane, Methylchloroform (71-55-6)
Carbon disulfide (75-15-0)	cis-1,3-Dichloropropene (10061-01-5)	1,1,2-Trichloroethane (79-00-5)
Carbon tetrachloride (56-23-5)	trans-1,3-Dichloropropene (10061-02-6)	Trichloroethylene, Trichloroethene (79-01-6)
Chlorobenzene (108-90-7)	Ethylbenzene (100-41-4)	Trichlorofluoromethane, CFC-11 (75-69-4)
Chloroethane; Ethyl chloride (75-00-3)	2-Hexanone; Methyl butyl ketone (591-78-6)	1,2,3-Trichloropropane (96-18-4)
Chloroform; Trichloromethane (67-66-3)	Methyl bromide; Bromomethane (74-83-9)	Vinyl acetate (108-05-4)
Dibromochloromethane; Chlorodibromomethane (124-48-1)	Methyl chloride; Chloromethane (74-87-3)	Vinyl chloride; Chloroethene (75-01-4)
1,2-Dibromo-3-chloropropane; DBCP (96-12-8)	Methylene bromide; Dibro- momethane (74-95-3)	Xylenes (1330-20-7)
1,2-Dibromoethane; Ethylene dibromide; EDB (106-93-4)	Methylene chloride; Dichloromethane (75-09-2)	
o-Dichlorobenzene; 1,2-Dichlorobenzene (95-50-1)	Methyl ethyl ketone; MEK; 2-Butanone (78-93-3)	
p-Dichlorobenzene; 1,4-Dichlorobenzene (106-46-7)	Methyl Iodide; Iodomethane (74-88-4)	
trans-1,4-Dichloro-2-butene (110-57-6)	4-Methyl-2-pentanone; Methyl isobutyl ketone (108-10-1)	

TABLE 3A: EXPANDED PARAMETERS: Field Parameters, Leachate Indicators, Radionuclides, and Inorganic Parameters[14]

Common Name (and CAS number, as appropriate)[15]			

Field Parameters:	Leachate Indicators:	Inorganic Parameters: (total unless otherwise noted)	Radionuclides [16]
Static water level (in wells and sumps)	Total Kjeldahl Nitrogen	Aluminum	Radium-226 per EPA 903.1
Specific Conductance	Ammonia (7664-41-7)	Antimony	Radium-228 per EPA 904.0
Temperature	Nitrate	Arsenic	Total Uranium per EPA 908.0
Floaters or Sinkers [17]	Chemical Oxygen Demand	Barium	
Temperature	Biochemical Oxygen Demand (BOD_5)	Beryllium	
pH	Total Organic Carbon	Cadmium	
Eh	Total Dissolved Solids	Calcium	
Dissolved Oxygen [18]	Sulfate	Chromium	
Field Observations [19]	Alkalinity	Chromium (Hexavalent) [20]	
Turbidity	Phenols (108-95-2)	Cobalt	
	Chloride	Copper	
	Bromide (24959-67-9)	Cyanide	
	Total hardness as $CaCO_3$	Iron	
	Color	Lead	
	Boron (7440-42-8)	Magnesium	
		Manganese	
		Mercury	
		Nickel	
		Potassium	
		Selenium	
		Silver	
		Sodium	
		Thallium	
		Tin	
		Vanadium	
		Zinc	

TABLE 3B: EXPANDED PARAMETERS: Organic Parameters [21]

Common Name (and CAS number, as appropriate) [22]		
Organic Parameters:		
Acenaphthene (83-32-9)	2,4-Dichlorophenol (120-83-2)	Naphthalene (91-20-3)
Acenaphthylene (208-96-8)	2,6-Dichlorophenol (87-65-0)	1,4-Naphthoquinone (130-15-4)
Acetone (67-64-1)	1,2-Dichloropropane; Propylene dichloride (78-87-5)	1-Naphthylamine (134-32-7)
Acetonitrile; Methyl cyanide (75-05-8)	1,3-Dichloropropane, Trimethylene dichloride (142-28-9)	2-Naphthylamine (91-59-8)
Acetophenone (98-86-2)	2,2-Dichloropropane, Isopropylidene chloride (594-20-7)	o-Nitroaniline; 2-Nitroaniline (88-74-4)
2-Acetylaminofluorene; 2-AAF (53-96-3)	1,1-Dichloropropene (563-58-6)	m-Nitroaniline; 3-Nitroaniline (99-09-2)
Acrolein (107-02-8)	cis-1,3-Dichloropropene (10061-01-5)	p-Nitroaniline; 4-Nitroaniline (100-01-6)
Acrylonitrile (107-13-1)	trans-1,3-Dichloropropene (10061-02-6)	Nitrobenzene (98-95-3)
Aldrin (309-00-2)	Dieldrin (60-57-1)	o-Nitrophenol 2-Nitrophenol (88-75-5)
Allyl chloride (107-05-1)	Diethyl phthalate (84-66-2)	p-Nitrophenol; 4-Nitrophenol (100-02-7)
4- aminobiphenyl (92-67-1)	0,0-Diethyl 0-2-pyrazinyl	N-Nitrosodi-n-butylamine (924-16-3)
Anthracene (120-12-7)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene (156-59-2)	
N-Nitrosodiethylamine (55-18-5)		
Benzene (71-43-2)	trans-1,2-Dichloroethylene (156-60-2)	N-Nitrosodimethylamine (62-75-9)
Benzo[a]anthracene; Benzanthracene (56-55-3)	Phosphorothioate; Thionazin (297-97-2)	N-Nitrosodiphenylamine (86-30-6)
Benzo[b]fluoranthene (205-99-2)	Dimethoate (60-51-5)	N-Nitrosodipropylamine; N-Nitroso-N-dipropyl-amine; Di-n-propylni-trosamine (621-64-7)
Benzo[k]fluoranthene (207-08-9)	p-(Dimethylamino)azobenzene (60-11-7)	N-Nitrosomethylethalamine (10595-95-6)
Benzo[ghi]perylene (191-24-2)	7,12-Dimethylbenz[a]anthracene (57-97-6)	N-Nitrosopiperidine (100-75-4)
Benzo[a]pyrene (50-32-8)	3,3 [21]-Dimethylbenzidine (119-93-7)	N-Nitrosopyrrolidine (930-55-2)
Benzyl alcohol (100-51-6)	2,4-Dimethylphenol, m-Xylenol (105-67-9)	5-Nitro-o-toluidine (99-55-8)
alpha-BHC (319-84-6)	Dimethyl phthalate (131-11-3)	Parathion (56-38-2)
beta-BHC (319-85-7)	m-Dinitrobenzene (99-65-0)	Pentachlorobenzene (608-93-5)
delta-BHC (319-86-8)	4,6-Dinitro-o-cresol 4,6- Dinitro-2-methylphenol (534-52-1)	Pentachloronitrobenzene (82-68-8)

gamma-BHC, Lindane (58-89-9)	2,4-Dinitrophenol (51-28-5)	Pentachlorophenol (87-86-5)
Bis(2-chloroethoxy)methane (111-91-1)	2,4-Dinitrotoluene (121-14-2)	Phenacetin (62-44-2)
Bis(2-chloroethyl) ether; Dichloroethyl ether (111-44-4)	2,6-Dinitrotoluene (606-20-2)	Phenanthrene (85-01-8)
Bis-(2-chloro-1-methyl-ethyl)ether; 2,2[21]-Dichlorodiisopropyl ether; DCIP[23]	Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol (88-85-7)	Phenol (108-95-2)
Bis(2-ethylhexyl)phthalate (117-81-7)	Di-n-octyl phthalate (117-84-0)	p-Phenylenediamine (106-50-9)
Bromochloromethane (74-97-5)	Diphenylamine (122-39-4)	Phorate (298-02-2)
Bromodichloromethane (75-27-4)	Disulfoton (298-04-4)	Polychlorinated biphenyls; PCBs; Aroclors[24]
Bromoform (75-25-2)	Endosulfan I (959-98-8)	Polychlorinated dibenzo-p- dioxins; PCDDs[25]
4-Bromophenyl phenyl ether (101-55-3)	Endosulfan II (33213-65-9)	Polychlorinated dibenzo- furans; PCDFs[26]
Butyl benzyl phthalate; Benzyl butyl phthalate (117-81-7)	Endosulfan sulfate (1031-07-8)	Pronamide (23950-58-5)
Carbon disulfide (75-15-0)	Endrin (72-20-8)	Propionitrile; Ethyl cyanide (107-12-0)
Carbon tetrachloride (56-23-5)	Endrin aldehyde (7421-93-4)	Pyrene (129-00-0)
Chlordane[27]	Ethylbenzene (100-41-4)	Safrole (94-59-7)
p-Chloroaniline (106-47-8)	Ethyl methacrylate (97-63-2)	Silvex, 2,4,5-TP (93-72-1)
Chlorobenzene (108-90-7)	Ethyl methanesulfonate (62-50-0)	Styrene (100-42-5)
Chlorobenzilate (510-15-6)	Famphur (52-85-7)	2,4,5-T, 2,4,5-trichloro- phenoxyacetic acid (93-76-5)
p-Chloro-m-cresol; 4-Chloro-3-methylphenol (59-50-7)	Fluoranthene (206-44-0)	1,2,4,5-Tetrachlorobenzene (95-94-3)
Chloroethane; Ethyl chloride (75-00-3)	Fluorene (86-73-7)	2,3,7,8-Tetrachlorodi- benzo-p-dioxin, 2,3,7,8-TCDD (1746-01-6)
Chloroform; Trichloromethane (67-66-3)	Heptachlor (76-44-8)	1,1,1,2-Tetrachloroethane (630-20-6)
2-Chloronaphthalene (91-58-7)	Heptachlor epoxide (1024-57-3)	1,1,2,2-Tetrachloroethane (79-34-5)
2-Chlorophenol (95-57-8)	Hexachlorobenzene (118-74-1)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene (127-18-4)
4-Chlorophenyl phenyl ether (7005-72-3)	Hexachlorobutadiene (87-68-3)	2,3,4,6-Tetrachlorophenol (58-90-2)
Chloroprene (126-99-8)	Hexachlorocyclopentadiene (77-47-4)	Toluene (108-88-3)
Chrysene (218-01-9)	Hexachloroethane (67-72-1)	o-Toluidine (95-53-4)
m-Cresol, 3-methylphenol (108-39-4)	Hexachloropropene (1888-71-7)	Toxaphene[28]
o-Cresol, 2-methylphenol (95-48-7)	2-Hexanone, Methyl butyl ketone (591-78-6)	1,2,4-Trichlorobenzene (120-82-1)
p-Cresol; 4-methylphenol (106-44-5)	Indeno(1,2,3-cd)pyrene (193-39-5)	1,1,1-Trichloroethane, Methylchloroform (71-55-6)
2,4-D; 2,4-Dichlorophen- oxyacetic acid (94-75-7)	Isobutyl alcohol (78-83-1)	1,1,2-Trichloroethane (79-00-5)
4,4[21]-DDD (72-54-8)	Isodrin (465-73-6)	Trichloroethylene, Trichloroethene (79-01-6)
4,4[21]-DDE (72-55-9)	Isophorone (78-59-1)	Trichlorofluoromethane, R-11 (75-69-4)
4,4[21]-DDT (50-29-3)	Isosafrole (120-58-1)	2,4,5-Trichlorophenol (95-95-4)
Diallate (2303-16-4)	Kepone (143-50-0)	2,4,6-Trichlorophenol (88-06-2)
Dibenz[a,h]anthracene (53-70-3)	Methacrylonitrile (126-98-7)	1,2,3-Trichloropropane (96-18-4)
Dibenzofuran (132-64-9)	Methapyrilene (91-80-5)	0,0,0-Triethyl phosphorothioate (126-68-1)
Dibromochloromethane; Chlorodibromomethane (124-48-1)	Methoxychlor (72-43-5)	sym-Trinitrobenzene (99-35-4)
1,2-Dibromo-3-chloro- propane; DBCP (96-12-8)	Methyl bromide; Bromomethane (74-83-9)	Vinyl acetate (108-05-4)
1,2-Dibromoethane; Ethylene dibromide; EDB (106-93-4)	Methyl chloride; Chloromethane (74-87-3)	Vinyl chloride; Chloroethene (75-01-4)
Di-n-butyl phthalate (84-74-2)	3-Methylcholanthrene (56-49-5)	Xylene (total)
o-Dichlorobenzene; 1,2-Dichlorobenzene (95-50-1)	Methyl ethyl ketone; MEK; 2-Butanone (78-93-3)	Per- and polyfluoroalkyl substances[29]
m-Dichlorobenzene; 1,3-Dichlorobenzene (541-73-1)	Methyl iodide; Iodomethane (74-88-4)	1,4-Dioxane (123-91-1)
p-Dichlorobenzene; 1,4-dichlorobenzene (106-46-7)	Methyl methacrylate (80-62-6)	
3,3[21]-Dichlorobenzidine (91-94-1)	Methyl methanesulfonate (66-27-3)	
trans-1,4-Dichloro- 2-butene (110-57-6)	2-Methylnaphthalene (91-57-6)	

Dichlorodifluoromethane, CFC 12 (75-71-8)	Methyl parathion; Parathion methyl (298-00-0)	
1,1-Dichloroethane; Ethyldidene chloride (75-34-3)	4-Methyl-2-pentanone; Methyl isobutyl ketone (108-10-1)	
1,2-Dichloroethane; Ethylene dichloride (107-06-2)	Methylene bromide; Dibromomethane (74-95-3)	
1,1-Dichloroethylene, 1,1-Dichloroethene; Vinylidene chloride (75-35-4)	Methylene chloride; Dichloromethane (75-09-2)	

(i) Leachate management plan.

The leachate management plan must include:

(1) a description of how the landfill will be constructed, operated, and closed in a manner that minimizes the generation of leachate, except in those cases where the department has approved the recirculation of leachate for waste mass stabilization enhancement, and how the migration of leachate into surface water or groundwater will be prevented;

(2) a description of operational methods to minimize the occurrence of perched leachate trapped above the leachate collection and removal system and surface seeps of leachate from above-grade landfill operations;

(3) a schedule for biennial video inspection and annual maintenance of the primary and secondary leachate collection and removal system;

(4) a schedule for the monitoring and recording of the secondary leachate collection and removal system flow data to determine the presence, quantity, nature and significance of any liquid detected;

(5) a discussion of the specific design and operational features related to the system, including leachate monitoring and sampling, locations of all leachate sampling points, alarm systems and maintenance, and any required back up equipment; and

(6) if leachate recirculation is proposed, the leachate management plan must include

(i) a supporting geotechnical analysis evaluating the effect of leachate recirculation on the structural integrity and stability of the landfill's liner system, leachate collection and removal system, and waste mass;

(ii) a description of how increased landfill gas emissions and associated odors will be controlled;

(iii) a description of the methods and rate of leachate recirculation and addition;

(iv) procedures for recording the date and volume of recirculated leachate;

(v) a description of the operation, which addresses:

(a) the use of permeable operating cover or alternative operating cover to facilitate leachate distribution throughout the waste mass; and

(b) operational controls such as monitoring of surface seeps, liner system performance and excessive leachate head buildup, prevention of subsurface fires, odor control, and instruction for cessation of leachate recirculation and remediation of these conditions.

(j) Odor control plan.

The odor control plan must include:

(1) identification of all potential sources for odors and a description of the operational procedures and strategies to be followed to effectively control odors at the facility;

(2) procedures to be taken in the event of proposed waste volume increases or changes in waste characterization that may increase landfill gas emissions or odors;

(3) identification of the landfill personnel who would be responsible for implementation of the odor control plan; and

(4) operational and design-related recommendations that can be implemented upon detection of odor control problems, including impervious membranes and interim covers in conjunction with other landfill gas control methods. The odor control plan may include but not be limited to, gas control systems that are appropriately connected to the landfill liner system's primary leachate collection and removal system (including the drainage area on the landfill's side slopes), use of a horizontal gas collection lines, which may include rejection or mitigation of odiferous wastes that are determined to be contributing to off-site odors.

(k) Gas monitoring and emission control plan.

The gas monitoring and emission control plan must include:

(1) a description of the day-to-day operation of the landfill gas management system with respect to operation of odor and emission controls;

(2) a description of any air quality monitoring, including monitoring for fugitive landfill odor and air emissions; and

(3) for a landfill with an appurtenant landfill gas-to-energy facility or other landfill gas recovery facility, a discussion of how the landfill's odor and air emission controls are integrated with a recovery facility.

(l) Winter and inclement weather operation plan.

A description of how winter and inclement weather operations will be conducted, including identification of the specific actions to be taken to prevent frost action on the liner system in places where waste will not be placed within one year of construction certification approval.

(m) Residential drop-off operation plan.

A description of the operation of a residential drop-off area, if applicable, for non-commercial vehicles to unload waste and recyclables at an area other than the landfill working face.

(n) A radioactive waste detection plan.

The radioactive waste detection plan must include procedures for detecting radioactive material; operation and maintenance documents for radiation detectors which address proper equipment placement for effective operation and include setting of investigation alarm setpoint settings and calibration methods; and response procedures to be implemented if radioactive waste is detected.

(o) Emergency response plan.

An emergency response plan must include a description of, at a minimum, the actions to be taken in response to:

(1) uncontrolled explosive landfill gases detected on-site or beyond the property boundary;

(2) unexpected events during the construction and operation of the landfill gas management system, including the equipment to be utilized to maintain proper landfill gas venting and control when normal operations cease; and

(3) unexpected events during the subsequent construction and/or daily operation of the landfill's leachate collection and removal system.

(p) Conceptual closure, post-closure care, custodial care, and end use plan.

The conceptual closure, post-closure care, custodial care, and end use plan must include:

(1) a site plan that shows proposed final contours, property lines, storm water drainage system, streams and water courses, roads, structures and, if applicable, the groundwater and leachate treatment system, air pollution control system and any active landfill gas collection system;

(2) typical details of final cover system components and facility structures;

(3) a description of how the sequential closure of areas of the landfill is expected to progress in concert with the fill progression schedule, including effects of landfill reclamation activities if proposed;

(4) an estimate of the greatest number of landfill cells which, at any given point during the lifetime of the facility, will have received waste but not undergone final closure;

(5) an estimate of the maximum volume of waste and alternative operating cover that will be contained within the landfill;

(6) sufficient information upon which to estimate closure costs and post-closure and custodial care monitoring and maintenance costs. This information must be based upon the requirements of Subpart 363-9 of this Part, including a rolling 30-year post-closure care period, and must include estimates of:

(i) quantities and costs for each component of the final cover system, including related construction costs;

(ii) the anticipated length of the post-closure care period based on the types of wastes disposed and the criteria provided in section 363-9.6(a) of this Part;

(iii) post-closure operational, monitoring and maintenance costs including costs to replace system components based on predicted service life; and

(iv) custodial care monitoring and maintenance costs including costs to replace system components based on predicted service life; and

(7) a conceptual end use for the site, if proposed.

Footnotes

1 This list contains parameters for which possible analytical procedures are provided in: *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, EPA Publication SW-846 (Third Edition, (November 1986), as amended by Updates I

(July 1992), II (September 1994), IIA (August 1993), IIB (January 1995), III (December 1996), IIIA (April 1998), document number 955-001-00000-1), incorporated by reference in section 360.3 of this Title. *Methods for Chemical Analysis of Water and Wastes*, USEPA-600/4-79-020, March, 1983, incorporated by reference in section 360.3 of this Title.

2 Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals. "Total" indicates all species in the groundwater that contain this element.

3 Any floaters or sinkers found must be analyzed separately for baseline parameters.

4 Surface water only.

5 Any unusual conditions (colors, odors, surface sheens, etc.) noticed during well development, purging, or sampling must be reported.

6 This list contains parameters for which possible analytical procedures are provided in: *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, EPA Publication SW-846 (Third Edition, (November 1986), as amended by Updates I (July 1992), II (September 1994), IIA (August 1993), IIB (January 1995), III (December 1996), IIIA (April 1998), document number 955-001-00000-1), incorporated by reference in section 360.3 of this Title. *Methods for Chemical Analysis of Water and Wastes*, USEPA-600/4-79-020, March, 1983, incorporated by reference in section 360.3 of this Title.

7 Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals. "Total" indicates all species in the groundwater that contain this element.

8 Any floaters or sinkers found must be analyzed separately for baseline parameters.

9 Surface water only.

10 Any unusual conditions (colors, odors, surface sheens, etc.) noticed during well development, purging, or sampling must be reported.

11 The department may waive the requirement to analyze hexavalent chromium provided that total and hexavalent and trivalent chromium values do not exceed 0.05 mg/l.

12 This list contains parameters for which possible analytical procedures are provided in: *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, EPA Publication SW-846 (Third Edition, (November 1986), as amended by Updates I (July 1992), II (September 1994), IIA (August 1993), IIB (January 1995), III (December 1996), and IIIA (April 1998) document number 955-001-00000-1), incorporated by reference in section 360.3 of this Title. *Methods for Chemical Analysis of Water and Wastes*, USEPA-600/4-79-020, March, 1983, incorporated by reference in 360.3 of this Title.

13 Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

14 This list contains parameters for which possible analytical procedures are provided in: *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, EPA Publication SW-846 (Third Edition, (November 1986), as amended by Updates I (July 1992), II (September 1994), IIA (August 1993), IIB (January 1995), III (December 1996), and IIIA (April 1998) document number 955-001-00000-1), incorporated by reference in section 360.3 of this Title. *Methods for Chemical Analysis of Water and Wastes*, USEPA-600/4-79-020, March 1983, incorporated by reference in 360.3 of this Title. *Prescribed Procedures for Measurement of Radioactivity in Drinking Water*, USEPA-600/4-80-032, August 1980, incorporated by reference in section 360.3 of this Title.

15 Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals. "Total" indicates all species in the groundwater that contain this element.

16 Two sets of samples must be collected: one filtered and one unfiltered. Filtered samples must be filtered using a 0.45 micron filter via standard techniques.

17 Any floaters or sinkers found must be analyzed separately for baseline parameters.

18 Surface water only.

19 Any unusual conditions (colors, odors, surface sheens, etc.) noticed during well development, purging, or sampling must be reported.

20 The department may waive the requirement to analyze hexavalent chromium provided that total and hexavalent and trivalent chromium values do not exceed 0.05 mg/l.

21 This list contains parameters for which possible analytical procedures are provided in: *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, EPA Publication SW-846 (Third Edition, (November 1986), as amended by Updates I (July 1992), II (September 1994), IIA (August 1993), IIB (January 1995), III (December 1996), and IIIA (April 1998) document number 955-001-00000-1), incorporated by reference in section 360.3 of this Title. *Methods for Chemical Analysis of Water and Wastes*, USEPA-600/4-79-020, March 1983, incorporated by reference in section 360.3 of this Title.

22

Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

23 This substance is often called Bis(2-chloroisopropyl) ether, the name Chemical Abstracts Service applies to its noncommercial isomer, Propane, 2,2"-oxybis[2]-chloro- (CAS RN 39638-32-9).

24 Polychlorinated biphenyls (1336-36-3): This category contains congener chemicals, including constituents of Aroclor 1016 (12674-11-2), Aroclor 1221 (11104-28-2), Aroclor 1232 (11097-69-1), and Aroclor 1260 (11096-82-5).

25 Polychlorinated dibenzo-p-dioxins: This category contains congener chemicals, including tetrachlorodibenzo-p-dioxins, pentachlorodibenzo-p-dioxins, and hexachlorodibenzo-p-dioxins.

26 Polychlorinated dibenzofurans: This category includes congener chemicals, including tetrachlorodibenzofurans, pentachlorodibenzofurans, and hexachlorodibenzofurans.

27 Chlordane: This entry includes alpha-chlordane (5103-71-9), beta-chlordane (5103-74-2), gamma-chlordane (5566-34-7), and constituents of chlordane (57-74-9; 12789-03-6).

28 Toxaphene: This entry includes congener chemicals contained in technical toxaphene (CAS RN 8001-35-2), *i.e.*, chlorinated camphene.

29 Per- and polyfluoroalkyl substances (PFAS): This category contains congener chemicals, including but not limited to perfluorooctanoic acid, perfluorooctanesulfonic acid, perfluorononanoic acid, perfluorohexanesulfonic acid, perfluoroheptanoic acid, perfluorobutanesulfonic acid.

6 CRR-NY 363-4.6
Current through September 30, 2018

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