



**US Army Corps of
Engineers**
Philadelphia District

PEARCE CREEK ANNUAL REPORT

PEARCE CREEK CONFINED DISPOSAL FACILITY EARLEVILLE, MD 21919

Prepared For:
The Maryland Department of the Environment

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1.0 INTRODUCTION

This Annual Summary Report was prepared at the request of the Maryland Department of the Environment (MDE) in accordance with the MDE's approval of the Groundwater Monitoring Plan (GWMP), as part of renewing placement of dredge material by the U.S. Army Corps of Engineers, Philadelphia District (USACE) at the Pearce Creek Confined Disposal Facility (CDF). The MDE approved the GWMP on February 16, 2017.

The Pearce Creek CDF is located in Earleville, Cecil County, Maryland, immediately south of Pearce Creek and the eastern shore of the Elk River, a major tributary of the Chesapeake Bay. The CDF is bounded by residential properties to the west, by residential, agricultural, and undeveloped properties to the south and east, and by Pearce Creek and the Elk River to the north.

The purpose of the Annual Summary Report is to present groundwater sampling and water level data to monitor potential changes in groundwater quality resulting from the installation of an impermeable liner designed to mitigate the effects of future and past dredge disposal at the Pearce Creek CDF. The initial Annual Summary Report (prepared in 2016) summarized historical groundwater sampling performed at the site from 1996 (when wells were first installed) to 2016. The 2017 Annual Summary Report summarized the installation of monitoring wells agreed to as part of the GWMP, groundwater flow in the 3 primary water-bearing units, and the first 2 rounds of groundwater sampling from the new network of monitoring wells around the CDF. This 2021 Annual Summary Report summarizes the continued groundwater sampling of the network of 36 monitoring wells around the CDF.

Placement of dredge material into the CDF occurred intermittently from mid-December 2017 to mid-February 2018, then again for the final 3 weeks of December 2018, from December 12, 2018 to January 4, 2019. The next dredging cycle began December 23, 2019 and was completed February 7, 2020. The FY21 dredging cycle began in November 2020 and was completed on December 11, 2020. The FY22 dredging cycle began at the end of February 2022 and be completed at the end of March 2022.

2.0 FIELD WORK

In accordance with the GWMP, seventeen groundwater monitoring wells were drilled and installed at eleven locations along the perimeter of the CDF in May and June 2017. One planned monitoring well (CSW-30) was not installed due to a lack of saturated sand in the shallow Magothy formation at that location. Attachment B, Figure 1 presents the locations of the monitoring wells that are part of the GWMP. Well construction details are summarized in Attachment A, Table 1.

Following the well installation in 2017, the groundwater monitoring network is comprised of 36 monitoring wells. This includes 16 wells in the Magothy aquifer, 13 wells in the Upper Patapsco Shallow aquifer, and 7 wells in the Upper Patapsco Deep aquifer. In Attachment B, Figures 2, 3, and 4 show well locations in the Magothy, Upper Patapsco-Shallow, and Upper Patapsco-Deep aquifers, respectively. Geologic cross sections and fence diagrams presented in the 2017 Annual

Summary Report show the vast amount of thick clay and silt units in the subsurface separating generally thinner, inter-fingered, laterally discontinuous water-bearing sands.

2.1 Groundwater Elevation Monitoring

To evaluate potential local seasonal variations in groundwater elevation and flow direction and also to evaluate potential changes in hydraulic head due to the installation of the impermeable liner at the CDF, site-wide groundwater elevation data was manually obtained on April 15, 2021 and September 10, 2021, as part of the semi-annual sampling event. Water levels were measured over a short time span to make the data as synoptic as possible. The data were generally collected within a period of two hours. Local tidal charts were consulted to temporally place the data within the daily tidal periods.

Groundwater elevation data are presented in Attachment C. Groundwater elevation contour maps were generated for the Magothy, the Upper Patapsco-Shallow, and the Upper Patapsco-Deep aquifers for both April and September 2021 measurements. These figures are also included in Attachment C and show that groundwater flow in each aquifer was relatively consistent throughout the year and was similar to previous groundwater flow maps generated in the 2017 – 2020 annual reports. It is also noted that tidal influence is most pronounced in the Upper Patapsco-Shallow aquifer more so than within the Magothy or Upper Patapsco-Deep aquifers. One other note of interest is that Pearce Creek Lake seems to act as a constant-head boundary creating a groundwater mound extending beneath the CDF, especially for the Magothy aquifer, and to a lesser degree the Upper Patapsco-Shallow aquifer.

2.2 Groundwater Sampling

Two rounds of groundwater samples were collected from all wells that are part of the groundwater monitoring program. The first sampling event was completed in April 2021, and the second round of sampling was conducted in September 2021. Groundwater sampling was performed by personnel from USACE Philadelphia. Monitoring well locations are shown in Attachment B, Figures 1 through 4, and construction details (depths, screened intervals, and aquifer) of these wells are specified in Attachment A, Table 1.

Groundwater sampling was conducted using standard U.S. Environmental Protection Agency (EPA) low stress (low flow) guidelines (<https://www.epa.gov/quality/low-stress-low-flow-purging-and-sampling-procedure-collection-groundwater-samples-monitoring>). Samples were collected following stabilization of groundwater quality parameters, and in accordance with the GWMP, analyzed using standard EPA and/or MDE methods for the following parameters:

- Total Metals: Aluminum, Arsenic, Beryllium, Cadmium, Calcium, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Sodium, and Zinc
- General Chemistry Parameters: Alkalinity, Total Dissolved Solids, Total Suspended Solids, Fluoride, Chloride, Bromide, Sulfate, Nitrogen (nitrite and nitrate), Nitrogen (nitrate), and Nitrogen (nitrite)
- Radiologic Parameters: Radium 226, Radium 228, Gross Alpha, and Gross Beta

Samples collected during both events were immediately placed in ice-filled coolers and shipped overnight via FedEx under chain-of-custody protocols. The samples were shipped to the USACE Engineer Research Development Center (ERDC) in Vicksburg, Mississippi for analysis of metals and general chemistry parameters and Pace National in Mt. Juliet, Tennessee for analysis of radiological parameters. Pace National is certified by the State of Maryland.

3.0 LABORATORY ANALYSIS AND GROUNDWATER SAMPLING RESULTS

In Attachment A, Tables 2 and 3 summarize the results for the 2021 spring and fall sampling events, respectively. Attachment A, Table 4 presents historical results from the 2017 – 2021 sampling of the new network of monitoring wells in the groundwater monitoring program.

The sampling results are compared with the Federal USEPA Maximum Contaminant Levels (MCLs) for drinking water quality and Secondary Drinking Water Regulations (non-mandatory standards based on aesthetics – taste, color, odor), as well as Groundwater Quality Standards established by the MDE.

4.0 FUTURE ACTIVITIES

- The current network of wells will continue to be sampled as part of the GWMP (a total of 36 monitor wells and piezometers), pending guidance from MDE. Groundwater sampling could possibly be lessened to once a year, as opposed to two events.
- Water levels and groundwater flow direction will continue to be monitored on a regular basis at the CDF.
- Placement of dredge material into the CDF in 2022 is scheduled to occur from February through the end of March.
- The USACE will develop a database for the project which in the future will allow better evaluation of groundwater chemistry changes over time.
- The seventh annual report will be submitted in February 2023. This report will include 2022 sampling results from the network of wells around the CDF. Groundwater quality trend plots (if applicable), groundwater elevation contour maps, and other pertinent information also will be included in subsequent annual reports.

ATTACHMENT A - TABLES

WELLS INSTALLED 2017 FOR THE GROUNDWATER MONITORING PROGRAM

Well Identifier	Well Total Depth	Borehole Total Depth	PVC Diameter	Screen Interval	Screen Elevation	Sand Pack Interval	Sand Pack Elevation	Northing	Easting	Elevation NAVD88			Aquifer
										Top of Casing	Top of PVC	Ground	
	feet bgs		inches	feet bgs	feet BMSL	feet bgs	feet BMSL	NAD83		feet AMSL			
CSW-27	50.5	56	4	40.5 - 50.5	8.58 - 18.58	34 - 56	2.08 - 24.08	641445.523	1598175.768	35.57	35.26	31.92	Magothy
CSW-28	140	146	4	130 - 140	97.89 - 107.89	124 - 146	91.89 - 113.89	641442.561	1598166.430	35.56	35.23	32.11	Patapsco - Shallow
CSW-29	47	51	4	37 - 47	8.84 - 18.84	31 - 51	2.84 - 22.84	642684.596	1597722.308	31.32	31.20	28.16	Magothy
CSW-30	-----			Well Not Installed - Magothy Aquifer Consisted Entirely of Clay									Magothy
CSW-31	145	156	4	135 - 145	113.88 - 123.88	129 - 156	107.88 - 134.88	644664.678	1600500.662	24.02	23.90	21.12	Patapsco - Shallow
CSW-32	53	56	4	48 - 53	25.22 - 30.22	42 - 56	19.22 - 33.22	643133.172	1601445.241	25.60	25.49	22.78	Magothy
CSW-33	166	167	4	161 - 166	138.23 - 143.23	155 - 167	132.23 - 144.23	643140.598	1601442.797	25.57	25.45	22.77	Patapsco - Shallow
CSW-34	196	216	4	191 - 196	158.44 - 163.44	185 - 203	152.44 - 170.44	641438.833	1598156.188	35.70	35.47	32.56	Patapsco - Deep
CSW-35	265	266	4	255 - 265	230.31 - 240.31	248 - 266	223.31 - 241.31	642576.531	1597167.435	28.02	27.82	24.69	Patapsco - Deep
CSW-36	210	276	4	200 - 210	178.93 - 188.93	191 - 215	169.93 - 193.93	641660.783	1601250.337	24.30	24.13	21.07	Patapsco - Deep
CSW-37	135	206	4	130 - 135	110.84 - 115.84	124 - 143	104.84 - 123.84	644963.200	1599108.262	22.04	21.84	19.16	Patapsco - Shallow
CSW-38	233.5	236	4	228.5 - 233.5	205.86 - 210.86	222.5 - 235	199.86 - 212.36	643929.086	1600999.147	26.64	26.16	22.64	Patapsco - Deep
CSW-39	285	286	4	275 - 285	247.35 - 257.35	264 - 286	236.35 - 258.35	644425.568	1598434.781	31.19	30.89	27.65	Patapsco - Deep
PZ-1	32	36	2	27 - 32	7.65 - 12.65	21 - 36	1.65 - 16.65	644964.826	1599115.090	22.63	22.51	19.35	Magothy
PZ-2	65	66	2	60 - 65	37.44 - 42.44	54 - 66	31.44 - 43.44	643933.022	1601006.901	25.66	25.45	22.56	Magothy
PZ-3	54	76	2	49 - 54	27.89 - 32.89	43 - 76	21.89 - 54.89	642586.996	1602043.597	24.03	23.87	21.11	Magothy
PZ-4	86	86.5	2	76 - 86	54.75 - 64.75	70 - 86.5	48.75 - 65.25	641654.704	1601244.735	24.38	24.20	21.25	Magothy
PZ-5	48.5	90	2	38.5 - 48.5	1.02 - 11.02	32 - 90	7.52 - 50.48	641686.897	1600070.702	42.75	42.62	39.52	Magothy
WELLS INSTALLED PRIOR TO 2017													
CSW-5	90		4	80 - 90	33.18 - 43.18			640418.877	1600881.043	47.03	46.82	46.82	Magothy
CSW-7	91		4	81 - 91	73.26 - 83.26			643973.655	1596467.431	8.05	7.74	7.74	Patapsco - Shallow
CSW-9	125		4	115 - 125	87.47 - 97.47			643685.642	1598170.755	31.22	30.85	27.53	Patapsco - Shallow
CSW-10	115		2	100 - 115	71.05 - 86.05			642664.840	1597714.757	32.21	31.91	28.95	Patapsco - Shallow
CSW-13	53		4	48 - 53	32.75 - 37.75			643662.830	1602744.431	17.81	17.26	15.25	Magothy
7A	16		4	11 - 16	+0.07 - 4.93			643813.575	1596529.126	11.52	11.07	11.07	Magothy
7B	222		4	217 - 222	206.22 - 211.22			643821.173	1596527.150	11.32	10.78	10.78	Patapsco - Deep
8A	89		4	79 - 89	55.48 - 65.48			643003.316	1595973.516	25.61	25.43	23.52	Patapsco - Shallow
8B	44		4	39 - 44	15.45 - 20.45			642997.164	1595969.647	25.79	25.49	23.55	Magothy
11A	198		4	188 - 198	167.22 - 177.22			645346.666	1599775.912	23.75	23.51	20.78	Patapsco - Deep
11C	30		4	20 - 30	+0.74 - 9.26			645349.364	1599787.526	23.88	23.51	20.74	Magothy
11R	128.5		4	118.5 - 128.5	97.80 - 107.80			645348.041	1599781.345	23.76	23.43	20.70	Patapsco - Shallow
12R	40		4	35 - 40	+1.69 - 3.31			640990.466	1599205.972	39.79	39.48	36.69	Magothy
13A	145		4	135 - 145	119.05 - 129.05			643691.094	1602757.833	19.72	19.35	15.95	Patapsco - Shallow
14R	118		4	108 - 118	71.36 - 81.36			640991.624	1599197.731	39.58	39.36	36.64	Patapsco - Shallow
16A	40		4	30 - 40	8.52 - 18.52			642637.393	1597186.522	24.41	24.18	21.48	Magothy
18B	87		4	77 - 87	50.26 - 60.26			644215.947	1598234.884	30.38	30.10	26.74	Patapsco - Shallow
21S	67		4	57 - 67	35.61 - 45.61			642126.368	1602756.547	24.13	23.93	21.39	Magothy
21D	150		4	145 - 150	123.86 - 128.86			642120.688	1602755.418	23.89	23.53	21.14	Patapsco - Shallow

bgs = below ground surface

AMSL = above mean sea level

BMSL = below mean sea level

Table 2
Spring 2021 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	7A	7B	8A	8B	11A	11C
Duplicate of:	SMCL						
Date Sampled:	⁽¹⁾	4/27/2021	4/27/2021	4/27/2021	4/27/2021	4/21/2021	4/21/2021
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	0.0656	0.008 U	1.28	1.02	0.0288 J	6.65
Arsenic	0.01	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	0.004	0.0004 U	0.0004 U	0.0015 J	0.0018 J	0.0004 U	0.0047
Cadmium	0.01	0.0004 U	0.0004 U	0.0009 J	0.0008 J	0.0004 U	0.0014 J
Calcium	NS	5.81	15.3	45.2	33.9	8.55	18.7
Iron	0.30	9.04	16.4	4.67	0.04 U	8.58	7.95
Lead	0.015	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 J
Magnesium	NS	2.17	3.05	24.4	26.1	1.74	9.22
Manganese	0.05	0.176	0.131	11.9	5.2	0.0926	4.54
Nickel ⁽²⁾	0.07	0.002 U	0.002 U	0.0349	0.0274	0.019	0.0956
Potassium	NS	1.19	8.97	4.47	4.17	9.66	2.98
Sodium	NS	9.95	19.9	56	182	19.2	7.75
Zinc	5	0.002 U	0.002 U	0.192	0.13	0.0054	0.161
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	0.1 U	0.134 J	0.244 J	0.222 J	0.1 U	0.1 U
Chloride	250	9.83	32.5	80	309	1 U	5.84
Fluoride	2	0.1 U	0.1 U	0.554	0.231	0.1 U	0.359
Sulfate	250	8.78	18.4	308	223	13.2	180
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	5.81	0.1 U	0.03 U	9.83	0.03 U	3.03
Nitrogen, Nitrite	1	0.03 U	0.0304 J	0.03 U	0.03 U	0.03 U	0.03 U
Nitrogen, Nitrate-Nitrite	10	5.81	0.0782 J	0.06 U	9.83	0.06 U	3.03
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha	15	0.136 U	1.15	6.48	4	1.3 U	3.96
Gross Beta ⁽³⁾	50	-0.0276 U	8.3	15.7	6.78	5.67	4.4
Radium-226 ⁽⁴⁾	5	-0.275 U	-0.1 U	7.16	4.35	0.407	0.149 J
Radium-228 ⁽⁴⁾	5	0.0518 U	0.88	1.63	0.907	-0.0266 U	1.52
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	5 U	40.2	5 U	5 U	58.9	5 U
Total Dissolved Solids	500	155 J	207 J	738 J	932 J	125	320
Total Suspended Solids	NS	15 J	15 J	10 U	10 U	3 J	12

Table 2
Spring 2021 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	11R	DUP-1	12R	13A	14R	16A
Duplicate of:	SMCL		11R				
Date Sampled:	⁽¹⁾	4/21/2021	4/21/2021	4/28/2021	4/20/2021	4/28/2021	4/26/2021
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	0.141	0.125	0.0854	2.31	9.93	0.0101 J
Arsenic	0.01	0.001 U	0.001 U	0.0015 J	0.001 U	0.0091	0.0016 J
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0033	0.0004 U
Cadmium	0.01	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
Calcium	NS	6.92	6.98	742	18.6	206	52.6
Iron	0.30	16.7	16.8	12.1	4.54	343	14.5
Lead	0.015	0.0004 U	0.0004 U	0.0004 U	0.0025	0.0004 U	0.0004 U
Magnesium	NS	1.48	1.49	44.4	2.5	192	34
Manganese	0.05	0.117	0.118	12.4	0.0584	166	19.6
Nickel ⁽²⁾	0.07	0.0033 J	0.0096 J	0.0464	0.0044	0.523	0.0057
Potassium	NS	1.52	1.51	10.9	16	19.3	9.23
Sodium	NS	7	7.02	340	13.9	351	32.6
Zinc	5	0.0032	0.0035	0.0513	0.0157	1.43	0.0078
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	0.1 U	0.1 U	7.41	0.1 U	2.39	0.247 J
Chloride	250	1 U	1 U	1320	2.76 J	527	16
Fluoride	2	0.1 U	0.1 U	0.1 U	0.1	0.1 U	0.1 U
Sulfate	250	13.7	13.7	695	14.3	2880	329
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	0.03 U	0.03 U	0.875 J	0.03 U	0.03 U	0.0372 J
Nitrogen, Nitrite	1	0.03 U	0.03 U	0.249 J	0.03 U	0.03 U	0.03 U
Nitrogen, Nitrate-Nitrite	10	0.06 U	0.06 U	1.12 J	0.06 U	0.06 U	0.06 U
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha	15	1.32 J	1.55 J	-4.18 U	3.14	8.64 J	0.119 U
Gross Beta ⁽³⁾	50	1.42 J	1.45 J	-3.96 U	12.6	71.9	7.8
Radium-226 ⁽⁴⁾	5	1.14	1.05	0.558 J	0.372 J	10.6	0.989
Radium-228 ⁽⁴⁾	5	0.628	0.415 J	0.0204 U	0.336	0.481	0.21
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	46.9	45.8	297	97.3	5 U	75.5
Total Dissolved Solids	500	99	69 J	4190	165	4550	688
Total Suspended Solids	NS	5 J	23 J	44	65	10 U	18

Table 2
Spring 2021 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/ SMCL	18B	21D	21S	CSW-5	CSW-7	CSW-9
Duplicate of:							
Date Sampled:	⁽¹⁾	4/19/2021	4/20/2021	4/20/2021	4/19/2021	4/27/2021	4/26/2021
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	0.008 U	2.14	43.1	0.304	0.192	0.036 J
Arsenic	0.01	0.001 J	0.001 U	0.0041	0.0045	0.0047	0.0015 J
Beryllium	0.004	0.0004 U	0.0004 U	0.0047	0.0004 U	0.0059	0.0063
Cadmium	0.01	0.0004 U	0.0004 U	0.0037	0.0004 U	0.0004 U	0.0004 U
Calcium	NS	45.7	58.5	176	185	219	259
Iron	0.30	24.4	0.763	247	518	242	599
Lead	0.015	0.0004 U	0.0004 U	0.00055 J	0.0004 U	0.0004 U	0.0004 U
Magnesium	NS	2.63	0.147	177	185	189	206
Manganese	0.05	0.172	0.028 J	141	130	159	169
Nickel ⁽²⁾	0.07	0.0014 J	0.0107	0.252	0.119	0.944	0.369
Potassium	NS	1.88	27	11.3	15.1	10.2	13.8
Sodium	NS	7.31	66.6	315	304	315	374
Zinc	5	0.0013 J	0.0066	0.652	0.134	2.91	0.0239
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	0.0551	0.263 J	2.62	2.36	2.15	2.53
Chloride	250	5.71	53.3	570	480	551	639
Fluoride	2	0.0325	0.247	0.301	0.1 U	0.1 U	0.1 U
Sulfate	250	0.1 U	41.5	2730	2980	2260	1720 J
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	0.003 UJ	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Nitrogen, Nitrite	1	0.00857 J	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Nitrogen, Nitrate-Nitrite	10	0.00857 J	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha	15	0.463 J	2.15 J	17.4 J	-2.37 U	1.23 U	-6 U
Gross Beta ⁽³⁾	50	1.18 J	22.7	29.2	-3.07 U	9.72 J	-0.274 U
Radium-226 ⁽⁴⁾	5	-0.713 U	-0.0938 U	9.91	2.32	5.64	0.782
Radium-228 ⁽⁴⁾	5	0.347	0.0338	0.509	0.557	2.49	0.72
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	145	227	39.8	45.2	33.9	9.85 J
Total Dissolved Solids	500	39	454	4300	4300	4220 J	5980
Total Suspended Solids	NS	23	14	2 U	15	24 J	59

Table 2
Spring 2021 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	DUP-3		CSW-10		CSW-13		CSW-27		CSW-28		CSW-29	
Duplicate of:	SMCL	CSW-9											
Date Sampled:	⁽¹⁾	4/26/2021		4/28/2021		4/20/2021		4/26/2021		4/26/2021		4/28/2021	
Total Inorganics		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Aluminum	0.05	0.0329 J		35.4		2.15		1.64		25.2		0.0215 J	
Arsenic	0.01	0.0013 J		0.0031		0.0014 J		0.005		0.0067		0.0112	
Beryllium	0.004	0.0066		0.009		0.0035		0.0011 J		0.005		0.0004 U	
Cadmium	0.01	0.0004 U		0.0027		0.0004 U		0.0034		0.0004 U		0.0004 U	
Calcium	NS	259		250		19.9		81.9		222		68.7	
Iron	0.30	596		417		62.3		124		385		92.9	
Lead	0.015	0.0004 U		0.0033		0.0004 U		0.0004 U		0.0004 U		0.0004 U	
Magnesium	NS	206		217		14.6		79.8		223		55.4	
Manganese	0.05	169		190		2.37		50.6		172		40.1	
Nickel ⁽²⁾	0.07	0.347		0.419		0.0616		0.239		0.63		0.0164	
Potassium	NS	13.9		18.4		2.16		11.8		19.9		11.8	
Sodium	NS	378		453		42.5		132		442		64.9	
Zinc	5	0.0235		1.15		0.241		0.306		1.38		0.0124 J	
Anions		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Bromide	NS	2.57		3.14		0.291 J		1.42		3		0.684	
Chloride	250	646		697		87.1		214		372 J		37.5	
Fluoride	2	0.1 U		0.1 U		0.1 U		0.26		0.753		0.1 U	
Sulfate	250	2870 J		3840		289		930		1200 J		489	
Nitrogen		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Nitrogen, Nitrate	10	0.03 U		0.03 U		0.03 U		0.03 U		0.03 U		0.03 U	
Nitrogen, Nitrite	1	0.03 U		0.03 U		0.03 U		0.03 U		0.03 U		0.03 U	
Nitrogen, Nitrate-Nitrite	10	0.06 U		0.06 U		0.06 U		0.06 U		0.06 U		0.06 U	
Radiochemistry		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L	
Gross Alpha	15	-3.34 U		19.2		4.78		0.326 U		-9.94 U		-0.772 U	
Gross Beta ⁽³⁾	50	11.4 J		36.6		3.2		5.94		-3.31 U		11	
Radium-226 ⁽⁴⁾	5	1.33		20.2		-0.389 U		2.64		4.86		0.00434 U	
Radium-228 ⁽⁴⁾	5	0.856		1.17		0.732		0.13 J		1.56		0.627	
Miscellaneous		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Total Alkalinity	NS	5.84 J		11.4		6.79 J		33.4		5 U		176	
Total Dissolved Solids	500	5820		5750		640		2010		5620		955	
Total Suspended Solids	NS	62		10 U		2 U		16		42		115	

Table 2
Spring 2021 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/ SMCL	CSW-31	CSW-32	CSW-33	CSW-34	CSW-35	CSW-36
Duplicate of:							
Date Sampled:	⁽¹⁾	4/21/2021	4/22/2021	4/22/2021	4/26/2021	4/26/2021	4/22/2021
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	0.0102 J	0.024 J	0.151	0.561	0.0951	0.0487
Arsenic	0.01	0.001 U	0.0122	0.001 U	0.001 U	0.001 J	0.0018 J
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
Cadmium	0.01	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
Calcium	NS	12.9	145	23.5	42.5	384	262
Iron	0.30	19.2	573	4.99	2.21	0.0295 J	1.01
Lead	0.015	0.0005 J	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
Magnesium	NS	1.91	80.7	2.44	0.508	0.0918	0.898
Manganese	0.05	0.156	11.1	0.0873	0.0678	0.0109 J	0.0262 J
Nickel ⁽²⁾	0.07	0.0019 J	0.0327	0.0146	0.004	0.0289	0.0124
Potassium	NS	1.9	5.81	3.28	14.7	61.8	13.7
Sodium	NS	5.31	144	8.82	21.1	87.3	32
Zinc	5	0.0077	0.0263	0.0079	0.0023	0.0016 J	0.0096
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	0.1 U	1.2	0.1 U	0.233 J	1.05	1.02
Chloride	250	1 U	290	5.52	20	116	98
Fluoride	2	0.1 U	0.1 U	0.1 U	0.121	0.159	0.183
Sulfate	250	3.57	2110	14.5	13.4	31	77.4
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	0.03 U	0.0495 J	0.03 U	0.03 U	0.03 U	0.03 U
Nitrogen, Nitrite	1	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Nitrogen, Nitrate-Nitrite	10	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha	15	1.25 J	-1.25 U	1.22 U	-0.0798 U	1.06 U	2.63 U
Gross Beta ⁽³⁾	50	1.11 J	-5.65 U	4.28	11.2	37.7	9.56
Radium-226 ⁽⁴⁾	5	0.731	0.499	0.899	-0.43 U	0.897	0.971
Radium-228 ⁽⁴⁾	5	0.758	-0.728 U	0.369 J	0.182	1.15	0.619
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	60.8	24.9	79	31.6	1050	563
Total Dissolved Solids	500	120	3160	109	5580	1450	872
Total Suspended Solids	NS	20	91	11	87	2 J	20

Table 2
Spring 2021 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/ SMCL	CSW-37	CSW-38	CSW-39	PZ-1	PZ-2	PZ-3
Duplicate of:							
Date Sampled:	⁽¹⁾	4/21/2021	4/22/2021	4/20/2021	4/21/2021	4/22/2021	4/20/2021
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	0.014 J	0.837	0.0543	0.008 U	0.0917	11.4
Arsenic	0.01	0.001 U	0.0014 J	0.001 U	0.0028	0.0066	0.0041
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0057
Cadmium	0.01	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0014 J
Calcium	NS	9.2	92	149	169	18.8	113
Iron	0.30	21.9	0.156	0.0942	114	60.7	199
Lead	0.015	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0006 J	0.0004 U
Magnesium	NS	2.17	0.134	0.0709	185	9.76	102
Manganese	0.05	0.161	0.008 U	0.008 U	28.3	0.843	85
Nickel ⁽²⁾	0.07	0.0248	0.0109	0.0056	0.0193	0.0093	0.227
Potassium	NS	2.12	5.41	20	24.6	1.45	10.3
Sodium	NS	16.8	33.2	85	370	46	204
Zinc	5	0.0039	0.003	0.0071	0.0035	0.0054	0.425
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	0.21 J	0.46	1.15	3.6	0.32	1.78
Chloride	250	1 U	56.5	186	660	32.6	305
Fluoride	2	0.1 U	0.283	0.123	0.264	0.1 U	0.362
Sulfate	250	1 U	54	9.99	888	88.6	1660
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	0.03 U	0.03 U	0.03 U	0.0407 J	0.03 U	0.03 U
Nitrogen, Nitrite	1	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Nitrogen, Nitrate-Nitrite	10	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha	15	1.05 U	0.0701 U	2.75	1.47 U	2	9.11 J
Gross Beta ⁽³⁾	50	0.0812 U	2.62 J	14.1	12	0.809 J	-0.577 U
Radium-226 ⁽⁴⁾	5	0.883	0.226 J	1.2	0.5	0.791	3.31
Radium-228 ⁽⁴⁾	5	0.814	0.0903 U	0.475	0.712	0.637	0.361
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	62.7	177	496	506	85	5 U
Total Dissolved Solids	500	126	374	652	3040	328	2820
Total Suspended Solids	NS	2 J	2 J	4 J	70	64	8 J

Table 2
Spring 2021 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	PZ-4	DUP-2	PZ-5	RB-042721	RB-042821
Duplicate of:	SMCL		PZ-4			
Date Sampled:	⁽¹⁾	4/22/2021	4/22/2021	5/6/2021	4/27/2021	4/28/2021
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	9.62	9.6	0.872	0.008 U	0.008 U
Arsenic	0.01	0.0033	0.0028	0.0016 J	0.001 U	0.001 U
Beryllium	0.004	0.0122	0.0119	0.0005 J	0.0004 U	0.0004 U
Cadmium	0.01	0.0004 U	0.0004 U	0.0088	0.0004 U	0.0004 U
Calcium	NS	103	102	81.7	0.0671	0.0573
Iron	0.30	129	128	5.9	0.0244 J	0.0095 J
Lead	0.015	0.0004 U	0.0004 U	0.007	0.0004 U	0.0004 U
Magnesium	NS	72.8	72.3	22	0.0191 J	0.0189 J
Manganese	0.05	47.5	46.5	17.3	0.0148 J	0.008 U
Nickel ⁽²⁾	0.07	0.193	0.175	0.15	0.0006 J	0.0004 U
Potassium	NS	6	5.97	7.21	0.0381 J	0.0791
Sodium	NS	108	106	11.3	0.102	0.069
Zinc	5	0.244	0.23	0.886	0.0011 J	0.0016 J
Anions		mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	0.894	0.89	0.246 J	0.1 U	0.1 U
Chloride	250	196	195	10.3	1 U	1 U
Fluoride	2	0.877	0.925	0.143	0.1 U	0.1 U
Sulfate	250	1070	1050	197	1 U	1 U
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	0.03 U	0.03 U	2.87 J	0.03 U	0.0922 J
Nitrogen, Nitrite	1	0.03 U	0.03 U	0.037 J	0.0665 J	0.0582 J
Nitrogen, Nitrate-Nitrite	10	0.06 U	0.06 U	2.91 J	0.0665 J	0.15 J
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha	15	10.9	6.28 J	9.49	-0.212 U	-0.0951 U
Gross Beta ⁽³⁾	50	7.47	5.45 J	13.1	-0.836 U	-0.918 U
Radium-226 ⁽⁴⁾	5	0.764	1.03	3.41	0.605	0.137 U
Radium-228 ⁽⁴⁾	5	3.5 J	1.55 J	1.12	-0.0234 U	0.0443 U
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	5 U	5 U	103	5 U	5 U
Total Dissolved Solids	500	1770 J	915 J	606	60	6 U
Total Suspended Solids	NS	2 U	5 J	41.7	4 J	3 J

Table 2
Spring 2021 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Data Qualifiers:

J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Limit of Quantitation (LOQ).

U -- Value is a non-detected result as reported by the laboratory.

NA -- No result is available/applicable for this parameter in this sample.

NS -- Not Specified

⁽¹⁾ MCL = Maximum Contaminant Level National Primary and Secondary Drinking Water Regulations, August 2009.

⁽²⁾ The Nickel screening level is the Maryland Department of the Environment (MDE) Groundwater Cleanup Standard.

⁽³⁾ The Gross Beta screening value is 4 millirems per year which cannot be applied to the value reported for Gross Beta in pCi/L, therefore guidance purposes, the Gross Beta results will be compared with the 50 pCi/L screening level provided in the Code of Federal Regulations (CFR) and Code of Maryland Regulations (COMAR) sampling and analysis requirements.

⁽⁴⁾ MCL is for Ra-226 and Ra-228 combined.

Bold values exceed the EPA MCL

Italicized values exceed the EPA secondary standard

Bold, italicized values exceed the MDE standard or COMAR standard.

Table 3
Fall 2021 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	7A	7B	8A	8B	11A	11C	11R
Duplicate of:	SMCL							
Date Sampled:	⁽¹⁾	9/20/2021	9/20/2021	9/30/2021	9/20/2021	9/27/2021	9/21/2021	9/27/2021
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	0.04 U	0.008 U	1.23	1.02	0.0636 J	7.57	0.321
Arsenic	0.010	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	0.004	0.002 U	0.002 U	0.002 U	0.0021 J	0.002 U	0.0055 J	0.002 U
Cadmium	0.005	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Calcium	NS	7.1	14.9	42.2	32.4	9.1	54.7	7.18
Iron	0.3	10.1	15.5	2.83	0.04 U	9.04	16.6	16.9
Lead	0.015	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Magnesium	NS	2.47	2.86	21.4	26.6	1.76	17.5	1.5
Manganese	0.05	0.161	0.123	10.9	4.46	0.0905	9.18	0.117
Nickel ⁽²⁾	0.073	0.0038 J	0.002 U	0.0369	0.0275	0.002 U	0.117	0.0024 J
Potassium	NS	1.36	8.07	3.99	4	9.22	3.93	1.57
Sodium	NS	9.71	20.8	50.1	207	19.6	16.8	7.03
Zinc	5	0.0796 J	0.0914	0.169	0.193	0.0139	0.194	0.0093 J
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	0.2 U	0.2 U	2.11	0.218 J	0.5 U	0.274 J	0.5 U
Chloride	250	14	32.5	384	323	14 J	12	5 U
Fluoride	2	0.2 U	0.2 U	0.5 U	0.296	0.5 U	0.687	0.5 U
Sulfate	250	8.98	19	2510	203	11.7 J	260	11.9 J
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	5.5	0.06 U	0.15 U	10.7	0.15 U	0.06 U	0.15 U
Nitrogen, Nitrite	1	0.06 U	0.06 U	0.15 U	0.06 U	0.15 U	0.06 U	0.15 U
Nitrogen, Nitrate-Nitrite	10	5.5	0.12 U	0.3 U	10.7	0.3 U	0.12 U	0.3 U
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha	15	-0.0863 U	2.59	8.62	4.45	1.37	5.19	2.51
Gross Beta ⁽³⁾	50	5.27	10.9	15.6	8.79	10.6	7.17	3.51
Radium-226 ⁽⁴⁾	5	0.19 J	0.495	1.25	1.26	0.415 J	0.64	0.697
Radium-228 ⁽⁴⁾	5	0.534 J	0.705	8.83	4.23	0.82	3.27	0.872 J
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	5	49.6	5 U	7.08	53.3	7.23	40
Total Dissolved Solids	500	111	160	523	938	132	536	199 J
Total Suspended Solids	NS	15	9.5	1 J	0.8	8	40	5.33

Table 3
Fall 2021 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	DUP-3	12R	13A	14R	16A	18B	21D
Duplicate of:	SMCL	11R						
Date Sampled:	⁽¹⁾	9/27/2021	9/29/2021	9/27/2021	9/28/2021	9/21/2021	9/21/2021	9/27/2021
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	0.281	0.0892	J 0.721	9.33	0.0431	J 0.04	U 1.29
Arsenic	0.010	0.001	U 0.001	U 0.001	U 0.0043	0.001	U 0.001	U 0.001
Beryllium	0.004	0.002	U 0.002	U 0.002	U 0.0043	J 0.002	U 0.002	U 0.002
Cadmium	0.005	0.002	U 0.002	U 0.002	U 0.002	U 0.002	U 0.002	U 0.002
Calcium	NS	7.03	657	25.3	197	55	45.9	98.2
Iron	0.3	16.2	27.7	2.35	330	15.2	24.1	1.07
Lead	0.015	0.002	U 0.002	U 0.002	U 0.002	U 0.002	U 0.002	U 0.002
Magnesium	NS	1.47	55.4	1.57	180	35	2.52	0.196
Manganese	0.05	0.112	17	0.0359	151	19.9	0.15	0.0315
Nickel ⁽²⁾	0.073	0.002	U 0.042	0.003	J 0.627	0.0065	J 0.0023	J 0.003
Potassium	NS	1.61	10.4	15.8	17.9	8.69	2.1	47.7
Sodium	NS	7.54	378	17.6	328	31.6	7.76	122
Zinc	5	0.0113	0.0905	0.0159	1.24	0.012	0.0144	0.0825
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	0.5	U 7.34	0.5	U 2.44	0.253	J 0.2	U 0.5
Chloride	250	5	U 1340	5	U 506	15.1	J 4.89	J 39.7
Fluoride	2	0.5	U 0.5	U 0.5	U 0.74	0.2	U 0.2	U 0.5
Sulfate	250	11.5	J 753	12.6	J 2730	328	2	U 37.6
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	0.15	U 0.5	UJ 0.15	U 0.15	U 0.06	U 0.06	U 0.15
Nitrogen, Nitrite	1	0.15	U 0.177	J 0.15	U 0.15	U 0.06	U 0.06	U 0.15
Nitrogen, Nitrate-Nitrite	10	0.3	U 0.656	J 0.3	U 0.3	U 0.12	U 0.12	U 0.3
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha	15	1.49	5.82	J 1.54	4.75	J 1.12	J 0.798	J 1.03
Gross Beta ⁽³⁾	50	4.44	6	J 15.1	23	9.46	1.93	J 18.5
Radium-226 ⁽⁴⁾	5	0.784	0.171	U 0.227	J 1.46	0.752	0.436	0.438
Radium-228 ⁽⁴⁾	5	0.95	-0.0248	U 0.482	J 12.2	0.48	J 4.51	-0.827
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	39.7	407	65.9	5	U 61.8	148	199
Total Dissolved Solids	500	98	J 4100	131	4740	626	202	406
Total Suspended Solids	NS	6	55	47	0.4	U 8	47.7	3.67

Table 3
Fall 2021 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	21S		CSW-5		CSW-7		CSW-9		CSW-10		CSW-13		CSW-27		CSW-28	
Duplicate of:	SMCL																
Date Sampled:	⁽¹⁾	9/27/2021		9/30/2021		9/20/2021		9/30/2021		9/29/2021		9/27/2021		9/22/2021		9/28/2021	
Total Inorganics		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Aluminum	0.05	41.2		0.231		0.338		0.123	J	36.3		1.69		0.764		21.3	
Arsenic	0.010	0.001	J	0.001	U	0.0016	J	0.001	U	0.001	U	0.0011	J	0.0014	J	0.001	U
Beryllium	0.004	0.005	J	0.002	U	0.0098	J	0.0076	J	0.0171		0.003	J	0.002	U	0.0064	J
Cadmium	0.005	0.0036	J	0.002	U	0.002	U	0.002	U	0.0027	J	0.002	U	0.002	U	0.002	U
Calcium	NS	184		179		222		265		259		18		92.4		234	
Iron	0.3	249		489		248		614		435		58.8	U	200		392	
Lead	0.015	0.002	U	0.002	U	0.002	U	0.002	U	0.0029	J	0.002		0.002	U	0.002	U
Magnesium	NS	175		166		186		203		217		12.9		95.8		216	
Manganese	0.05	136		113		152		168		192		2.06		57.6		167	
Nickel ⁽²⁾	0.073	0.376		0.169		1.12		0.532		0.489		0.0648		0.107		0.744	
Potassium	NS	10.3		14		9.59		13.3		17.5		1.99		13.8		19.3	
Sodium	NS	327		286		301		362		447		39.5		221		429	
Zinc	5	0.825		0.121		2.8		0.0215		1.05		0.238		0.282		1.15	
Anions		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Bromide	NS	2.47		0.5	U	2.2		2.61		3.37		0.5	U	2.06		3.21	
Chloride	250	498		69.4		499		641		808		63.9		327		827	
Fluoride	2	0.5	U	0.737		0.335		0.5	U	2.3		0.5	U	0.2	U	1.19	
Sulfate	250	2810		246		2430		3060		3740		195		1170		2920	
Nitrogen		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Nitrogen, Nitrate	10	0.15	U	0.15	U	0.06	U	0.15	U	0.15	UJ	0.15	U	0.06	U	0.15	U
Nitrogen, Nitrite	1	0.15	U	0.15	U	0.06	U	0.15	U	0.15	UJ	0.15	U	0.06	U	0.15	U
Nitrogen, Nitrate-Nitrite	10	0.3	U	0.3	U	0.12	U	0.3	U	0.3	UJ	0.3	U	0.12	U	0.3	U
Radiochemistry		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L	
Gross Alpha	15	28.6		0.75	U	0	U	3.31	U	32.3		4.08		2.65	J	7.48	J
Gross Beta ⁽³⁾	50	46.8		16.6		19.4	J	15.1	J	70.9		7.47		17.5		15.7	J
Radium-226 ⁽⁴⁾	5	1.26		0.29		1.63		0.712		1.89		0.716		0.19	J	1.8	
Radium-228 ⁽⁴⁾	5	11.4		1.52		3.69		2.42		30.5		1.25		4.15		5.34	
Miscellaneous		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Total Alkalinity	NS	5	U	38.3		12.3		27.2		26.4		6.98	J	72.1		13.1	
Total Dissolved Solids	500	4570		4730		3970		5910		6360		528		2460		5570	
Total Suspended Solids	NS	1.5	J	43		14		49		31.4		2	J	8	J	44	

Table 3
Fall 2021 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-29		DUP-1		CSW-31		CSW-32		CSW-33		CSW-34		CSW-35		CSW-36	
Duplicate of:	SMCL			CSW-29													
Date Sampled:	(1)	9/21/2021		9/21/2021		9/28/2021		9/22/2021		9/28/2021		9/28/2021		9/29/2021		10/5/2021	
Total Inorganics		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Aluminum	0.05	0.226		0.22		0.0567	J	0.04	U	0.0466	J	0.184		0.57	J	0.105	J
Arsenic	0.010	0.01		0.0096		0.001	U	0.0022		0.001	U	0.001	U	0.001	U	0.001	U
Beryllium	0.004	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U
Cadmium	0.005	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U
Calcium	NS	63.6		63.6		19		156		30.9		242		258		235	
Iron	0.3	84		84.1		23.2		581		3.93		0.138		0.142	J	0.866	
Lead	0.015	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U
Magnesium	NS	50.3		50.7		1.79		82.6		2.16		0.0971		0.163		0.45	
Manganese	0.05	35.7		35.7		0.192		10.5		0.103		0.0103	J	0.0304		0.0221	
Nickel ⁽²⁾	0.073	0.0181		0.0178		0.0024	J	0.0223		0.0024	J	0.0205		0.0182	J	0.0153	
Potassium	NS	10.9		10.8		1.66		5.79		4.08		25.9		37.2		12.6	
Sodium	NS	63.8		63.2		5.22		152		10.8		52.5		64.1		30.4	
Zinc	5	0.0959	J	0.0205	J	0.0162		0.0779	J	0.0133		0.0254		0.0293	J	0.0144	
Anions		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Bromide	NS	0.63		0.688		0.5	U	1.1		0.5	U	1.64		1.04	J	1.13	J
Chloride	250	35		35.9		5.53	J	252		7.13	J	167		101		76	
Fluoride	2	0.2	U	0.2	U	0.5	U	0.2	U	0.5	U	0.5	U	0.515		0.5	U
Sulfate	250	446		454		5	U	2090		15.6		45.5		29.3		65.6	
Nitrogen		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Nitrogen, Nitrate	10	0.06	U	0.06	U	0.15	U	0.06	U	0.15	U	0.15	U	0.15	UJ	0.15	U
Nitrogen, Nitrite	1	0.06	U	0.06	U	0.15	U	0.06	U	0.15	U	0.15	U	0.15	UJ	0.15	U
Nitrogen, Nitrate-Nitrite	10	0.12	U	0.12	U	0.3	U	0.12	U	0.3	U	0.3	U	0.3	UJ	0.3	U
Radiochemistry		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L		pCi/L	
Gross Alpha	15	0.262	U	2.21	J	1.89		-0.736	U	2.09		1.81	J	3.4	J	1.38	J
Gross Beta ⁽³⁾	50	12.3		13.8		3.2		0.753	U	5.9		20.9		31.4		9.16	
Radium-226 ⁽⁴⁾	5	0.401		0.812		0.347	J	0.404		0.82		0.693		0.789		0.556	J
Radium-228 ⁽⁴⁾	5	0.731		3.28	J	2.28	J	0.931		1.39		1.96		1.62		0.429	J
Miscellaneous		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
Total Alkalinity	NS	151		150		66.4		5	U	93.1		75.6		909		556	
Total Dissolved Solids	500	969		946		120		3280		154		1050		979		806	
Total Suspended Solids	NS	27		58		26		140		11.5		0.4	J	27		6.32	

Table 3
Fall 2021 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-37	CSW-38	CSW-39	PZ-1	PZ-2	DUP-2	PZ-3
Duplicate of:	SMCL						PZ-2	
Date Sampled:	⁽¹⁾	10/5/2021	9/28/2021	9/29/2021	9/21/2021	9/22/2021	9/22/2021	9/23/2021
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	0.051 J	0.659	4.38	0.049 J	0.04 U	0.04 U	11
Arsenic	0.010	0.001 U	0.001 U	0.0016 J	0.001 U	0.0044	0.0048	0.001 U
Beryllium	0.004	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.0051 J
Cadmium	0.005	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Calcium	NS	9.79	78.5	63.4	204	17.1	16.8	106
Iron	0.3	22.6	0.173	12	136	54.3	56.7	185
Lead	0.015	0.002 U	0.002 U	0.0063 J	0.002 U	0.002 U	0.002 U	0.002 U
Magnesium	NS	2.2	0.217	3.92	228	8.26	8.4	94.9
Manganese	0.05	0.165	0.008 U	0.172	28.6	0.802	0.834	77.8
Nickel ⁽²⁾	0.073	0.002 U	0.0056 J	0.0176 J	0.0062 J	0.005 J	0.0034 J	0.247
Potassium	NS	2.05	5.1	13.7	28.8	1.39	1.37	9.27
Sodium	NS	16.6	34.1	51.3	448	50.9	46.4	186
Zinc	5	0.0091 J	0.0137	0.0482	0.0146	0.0819	0.0827	0.475 J
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	0.5 U	0.5 U	0.5 U	4.19	0.249 J	0.292 J	1.65
Chloride	250	23.6	44.8	64.4	665	25.6	26.2	248
Fluoride	2	0.5 U	0.5 U	0.5 U	0.301	0.2 U	0.2 U	0.559
Sulfate	250	5 U	53.2	9.97 J	1120	74.1	78.6	1460
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	0.15 U	0.15 U	0.15 UJ	0.0779 J	0.06 U	0.06 U	0.06 U
Nitrogen, Nitrite	1	0.15 U	0.15 U	0.15 UJ	0.06 U	0.06 U	0.06 U	0.06 U
Nitrogen, Nitrate-Nitrite	10	0.3 U	0.3 U	0.3 UJ	0.12 U	0.12 U	0.12 U	0.12 U
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha	15	2.45	0.0761 U	20.5	2.43 U	2.33	3.02	1.16 U
Gross Beta ⁽³⁾	50	4.32	5.99	28.6	31.8	3.38	2.67	9.6 U
Radium-226 ⁽⁴⁾	5	0.593 J	0.278 J	0.994	0.645	0.916	0.869	0.807
Radium-228 ⁽⁴⁾	5	2.56	0.23 U	1.71 J	1.83	2.18	0.778	0 U
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	52.6	135	44.1	269	77.3	75.4	5 U
Total Dissolved Solids	500	133	332	286	3690	295	265	2330 J
Total Suspended Solids	NS	6.67	15.5	420	111	81	83	2 R

Table 3
Fall 2021 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	PZ-4	PZ-5	RB-092321	RB-092921
Duplicate of:	SMCL				
Date Sampled:	⁽¹⁾	9/22/2021	10/5/2021	9/23/2021	9/29/2021
Total Inorganics		mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	9.04	0.249	0.0161 J	0.008 U
Arsenic	0.010	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	0.004	0.0096 J	0.002 U	0.002 U	0.002 U
Cadmium	0.005	0.002 U	0.0055 J	0.002 U	0.002 U
Calcium	NS	92.4	51.3	0.0735	0.0505
Iron	0.3	111	0.899	0.0278 J	0.0154 J
Lead	0.015	0.002 U	0.002 U	0.002 U	0.002 U
Magnesium	NS	61.7	26.1	0.0222 J	0.0122 J
Manganese	0.05	39.8	21.7	0.008 U	0.008 U
Nickel ⁽²⁾	0.073	0.197	0.226	0.002 U	0.0021 J
Potassium	NS	6.02	8.26	0.05 U	0.05 U
Sodium	NS	99.7	13.5	0.163	0.123
Zinc	5	0.307	0.674	0.0751	0.0048 J
Anions		mg/L	mg/L	mg/L	mg/L
Bromide	NS	0.839	0.5 U	0.2 U	0.5 U
Chloride	250	158	11.1 J	2 U	9.16 J
Fluoride	2	1.08	0.5 U	0.2 U	0.5 U
Sulfate	250	983	236	2 U	5 U
Nitrogen		mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	0.06 U	0.343 J	0.06 U	0.302 J
Nitrogen, Nitrite	1	0.06 U	0.15 U	0.06 U	0.15 U
Nitrogen, Nitrate-Nitrite	10	0.12 U	0.343 J	0.12 U	0.302 J
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha	15	6.12	3.38	0.244 U	0.0205 U
Gross Beta ⁽³⁾	50	9.39	13.1	3.08	-0.722 U
Radium-226 ⁽⁴⁾	5	1.84	0.557 J	-0.094 U	0.0227 U
Radium-228 ⁽⁴⁾	5	2.9	1.86	0.681	-1.1 U
Miscellaneous		mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	5 U	40.8	5 U	5 U
Total Dissolved Solids	500	1660	560	6 U	6 U
Total Suspended Solids	NS	3 J	22	2 U	2 U

Table 3
Fall 2021 Groundwater Sampling Results
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Data Qualifiers:

J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Limit of Quantitation (LOQ).

U -- Value is a non-detected result as reported by the laboratory.

NA -- No result is available/applicable for this parameter in this sample.

NS -- Not Specified

⁽¹⁾ MCL = Maximum Contaminant Level National Primary and Secondary Drinking Water Regulations, August 2009.

⁽²⁾ The Nickel screening level is the Maryland Department of the Environment (MDE) Groundwater Cleanup Standard.

⁽³⁾ The Gross Beta screening value is 4 millirems per year which cannot be applied to the value reported for Gross Beta in pCi/L, therefore guidance purposes, the Gross Beta results will be compared with the 50 pCi/L screening level provided in the Code of Federal Regulations (CFR) and Code of Maryland Regulations (COMAR) sampling and analysis requirements.

⁽⁴⁾ MCL is for Ra-226 and Ra-228 combined.

Bold values exceed the EPA MCL

Italicized values exceed the EPA secondary standard

Bold, italicized values exceed the MDE standard or COMAR standard.

Table 4
Data Summary of Analytical Results
Comparison July 2017 through October 2021
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	7A										7B											
Sample Number:	SMCL	7A-20170711	7A-20171012	7A-20180508	7A-20181024	7A	7A	7A_052020	7A	7A	7A	7B-20170711	7B-20171012	7B-20180508	7B-20181024	7B	DUP-2	7B	DUP-11219	7B_052020	7B	7B	7B
Date Sampled:	⁽¹⁾	7/11/2017	10/12/2017	5/8/2018	10/24/2018	7/8/2019	11/21/2019	5/20/2020	09/22/2020	4/27/2021	9/20/2021	7/11/2017	10/12/2017	5/8/2018	10/24/2018	7/10/2019	7/10/2019	11/21/2019	11/21/2019	5/20/2020	09/22/2020	4/27/2021	9/20/2021
Duplicate of:																	7B		7B				
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	0.82	0.046 J	0.08 J	0.066 J	0.0596	0.455	0.121	0.0732	0.0656	0.0400 U	0.28	0.019 J	0.031 J	0.05 U	0.0255	0.0212	0.05 U	0.0132 J	0.018 J	0.0080 U	0.0080 U	0.0080 U
Arsenic	0.01	0.003 U	0.003 U	0.003 U	0.003 U	0.0019 J	0.0019 J	0.0007 J	0.0010 U	0.0010 U	0.0010 U	0.003 U	0.003 U	0.003 U	0.003 U	0.001 U	0.001 U	0.002 U	0.002 U	0.001 U	0.0010 U	0.0010 U	0.0010 U
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.000069 J	0.0005 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.002 U	0.002 U	0.001 U	0.0005 U	0.0004 U	0.0004 U	0.0020 U
Cadmium	0.005	0.0004 U	0.00047 J	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.003 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.003 U	0.003 U	0.002 U	0.0004 U	0.0004 U	0.0020 U
Calcium	NS	5.2	5	5.1	5.5	6.38	5.87	6.04	5.57	5.81	7.10	25	21	19	19	17.6	17.4	16.1	16.6	19.1	16.4	15.3	14.9
Iron	0.3	15	12	13	13	21.1	15.3	16.4	13.1	9.04	10.1	22	21	18	19	18.3	18.3	15.5	16.1	19.1	18.2	16.4	15.5
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0005 J	0.00038 J	0.0018 U	0.0004 U	0.0004 U	0.0020 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0004 U	0.002 U	0.002 U	0.0028 U	0.0004 U	0.0004 U	0.0020 U
Magnesium	NS	2.2	1.9	2.2	2.2	2.77	2.34	2.18	2.26	2.17	2.47	3.7	3.3	3.2	3.4	3.36	3.45	2.97	3.06	3.22	3.29	3.05	2.86
Manganese	0.05	0.2	0.2	0.52	0.2 J	0.221	0.209	0.238	0.201	0.176	0.161	0.2	0.17	0.16	0.16 J	0.141	0.148	0.129	0.134	0.271	0.155	0.131	0.123
Nickel ⁽²⁾	0.073	0.0024 J	0.0031 J	0.0049 J	0.005 UJ	0.002 U	0.0019 J	0.003 U	0.0004 U	0.0020 U	0.0038 J	0.005 U	0.005 U	0.005 U	0.005 UJ	0.002 U	0.002 U	0.004 U	0.004 U	0.0022 U	0.0006 J	0.0020 U	0.0020 U
Potassium	NS	1.2	1.1	0.98 J	1.3 J	1.16	1.15	1.08	1.29	1.19	1.36	8.7	8.4	11	12 J	11.9	11.9	11.1	11.3	15.6	9.62	8.97	8.07
Sodium	NS	10	6.3	6.4	6.8	8.28	6.69	10.1	10.4	9.95	9.71	21	20	20	21	24.1	24	21	22.4	26.7	22.0	19.9	20.8
Zinc	5	0.02 U	0.02 U	0.02 U	0.0097 J	0.0031 J	0.02 U	0.015 U	0.0023 U	0.0020 U	0.0796 J	0.02	0.02 U	0.02 U	0.01 J	0.0101	0.0038 J	0.0038 J	0.02 U	0.005 U	0.0046 U	0.0020 U	0.0914
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	0.5 U	0.1 U	0.37 J	0.2 J	0.0301	0.50 U	0.2 U	0.200 U	0.100 U	0.200 U	0.24 J	0.14 J	0.44 J	0.32 J	0.0698	0.0693	0.50 U	0.50 U	0.23 J	0.200 U	0.134 J	0.200 U
Chloride	250	13	7.9	8.9	7.8	14.8	10.1	11.5	10.1 U	9.83	14.0	37	37	38	37	19.6	19.5	36.4	37.3	35.8	37.3 U	32.5	32.5
Fluoride	2	0.085 J	0.058 J	0.1	0.068 J	0.0497	0.083 J	0.085 J	0.200 U	0.100 U	0.200 U	0.07 J	0.04 J	0.093 J	0.043 J	0.0173	0.0167	0.065 J	0.19 J	0.08 J	0.200 U	0.100 U	0.200 U
Sulfate	250	2.3	0.59	1.6	1 UJ	4.85	1.9 J	14.5	9.18 U	8.78	8.98	22	22	24	19 J	11.3	11.2	22.1	21.7	21.2	23.8 U	18.4	19.0
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	0.4	0.05	0.93	0.03 J	3.99	1.3	3.5	6.35	5.81	5.50	ND	0.027	0.05 U	0.05 U	0.003 U	0.003 U	0.11 U	0.11 U	0.1 U	0.0600 U	0.100 U	0.0600 U
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 R	0.00474 J	0.010 U	0.005 U	0.0600 U	0.0300 U	0.0600 U	ND	ND	0.05 U	0.05 R	0.003 U	0.003 U	0.010 U	0.012	0.0032 J	0.0600 U	0.0304 J	0.0600 U
Nitrogen, Nitrate-Nitrite	10	1.5	0.31	0.45	0.014 J	3.99	1.3	3.5	6.35	5.81	5.50	0.025 U	0.025 U	0.025 U	0.06 J	0.006 U	0.006 U	0.10 U	0.10 U	0.095 U	0.120 U	0.0782 J	0.120 U
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha ⁽³⁾	15	0.856 U	1.45 U	0.288 U	-0.454 U	1.1 U	0.127 U	-0.364 U	1.3	0.136 U	-0.0863 U	2.54 J	1.28 U	1.94 J	2.31 J	3.1	1.4	0.38 U	5.64	3.19 U	2.3	1.15	2.59
Gross Beta ⁽⁴⁾	50	0.915 U	1.5 U	1.67 J	1.26 J	3.2	1.22 U	3.53 U	2.7	-0.0276 U	5.27	7.62	7.5	11.4	9.54	16	12.2	12.6	10.3	20.9	14.4	8.3	10.9
Radium-226 ⁽⁵⁾	5	0.188 U	0.0293 U	0.155 J	0.188 U	0.4	0.489 U	0.135 U	0.8 U	-0.275 U	0.19 J	0.894 U	0.826 J	0.754 J	0.868 U	1.4	0.7	1.15	0.669	1.29	1.0 U	-0.1 U	0.5
Radium-228 ⁽⁵⁾	5	0.28 U	0.549 J	0.171 U	0.333 U	0.8 U	1.14 U	-0.167 U	0.9 U	0.0518 U	0.534 J	0.95 J	0.924 J	1.02	0.723 U	0.9	0.9	1.82 U	1.56 U	0.191 U	1.2	0.88	0.705
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	51 U	45	21	30	8.2 J	28	33	21.3	5.00 U	5.00	710	45	44	45	54	56.5	50.5	49	60	61.9	40.2	49.6
Total Dissolved Solids	500	140	93	83	76	104	74	112	73.0	155 J	111	180	180	160	150	164	168	155	137	163	127	207 J	160
Total Suspended Solids	NS	34	27	53	30 J	50	47.3	12.6	23.0	15.0 J	15.0	40	22	27	22 J	15.5	16	16.8	14.4	21.7	11.0	15.0 J	9.50
Field Parameters																							
pH (S.U.)	6.5-8.5	6.29	5.49	6.14	6.26	NA	NA	5.94	6.05	5.29	5.3	2.17	6.02	6.15	6.74	NA	NA	NA	NA	6.92	6.48	6.04	6.22
Specific Conductivity (mS/cm)	NS	0.166	0.131	0.118	0.122	NA	NA	0.116	0.105	0.132	0.154	0.129	0.348	0.356	0.345	NA	NA	NA	NA	0.311	0.201	0.259	0.27
Temperature (°C)	NS	20.84	20.01	24.04	18.01	NA	NA	14.86	18.09	12.83	17.96	17.73	15.12	15.47	15.05	NA	NA	NA	NA	14.73	14.85	15.05	14.49
Turbidity (NTU)	NS	19.1	13.9	7.62	16.3	NA	NA	21.9	8.2	8.4	-4.2	9.18	2.58	2.04	4.52	NA	NA	NA	NA	0.0	0.5	0.0	0.0
Dissolved Oxygen (mg/L)	NS	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	7.70	0.06	0.7	1.97	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00
Oxidation-Reduction Potential (mV)	NS	-42	-15	-26	-8	NA	NA	-28	-28	99	-1	107	-75	-140	-65	NA	NA	NA	NA	-106	-78	-8	-116

Table 4
Data Summary of Analytical Results
Comparison July 2017 through October 2021
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	8A											8B																											
Sample Number:	SMCL	8A-20170713	8A-20171012	8A-20180508	8A-20181018	8A	8A	8A_052020	DUP_052020	8A	8A	8A	8B-20170713	8B-20171012	8B-20180508	8B-20181018	8B	8B	8B_052020	8B	DUP-2	8B	8B																	
Date Sampled:	⁽¹⁾	7/13/2017	10/12/2017	5/8/2018	10/18/2018	7/8/2019	11/21/2019	5/20/2020	5/20/2020	09/22/2020	4/27/2021	9/30/2021	7/13/2017	10/12/2017	5/8/2018	10/18/2018	7/8/2019	11/21/2019	5/20/2020	09/22/2020	9/22/2020	4/27/2021	9/20/2021																	
Duplicate of:									8A											8B																				
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L																	
Aluminum	0.05	2.7	2.5	2.3	1.8	1.9	1.6	1.74	1.75	1.51	1.28	1.23	1.6	1.6	1.5	1.5	1.38	1.09	1.15	1.33	1.36	1.02	1.02																	
Arsenic	0.01	0.0054	0.01	0.004	0.0042	0.0013	J	0.0068	0.0034	0.0035	0.0010	U	0.0010	U	0.0010	U	0.0021	J	0.0033	0.0015	J	0.002	J	0.001	U	0.0019	J	0.0011	J	0.0010	U	0.0010	U	0.0010	U	0.0010	U			
Beryllium	0.004	0.0026		0.0029	0.0024	0.0017	0.002	U	0.0018	0.0023	0.0023	0.0020	0.0015	J	0.0020	U	0.0029	0.003	0.0025	0.0026	0.002	J	0.0023		0.0023		0.0026	J	0.0025	0.0025	0.0018	J	0.0021	J						
Cadmium	0.005	0.0023		0.0009	0.00056	0.00087	0.0009	J	0.00064	J	0.00062	J	0.0009	J	0.0009	J	0.0020	U	0.0015	0.001	0.00078	0.0011	0.0011	J	0.00070	J	0.00079	J	0.0010	J	0.0010	J	0.0008	J	0.0020	U				
Calcium	NS	74	J	75	63	57	53.7	51.5	53.2	57.9	50.4	45.2	42.2	56	J	53	50	47	45.2	36.8	43.2	41.2	42.4	33.9	32.4															
Iron	0.3	16		15	13	11	9.47	8.99	8.41	9.45	6.63	4.67	2.83	0.076	U	0.23	0.055	J	0.41	0.0619	0.164	0.0955	0.0400	U	0.0400	U	0.04	U	0.0400	U										
Lead	0.015	0.0025	U	0.0025	U	0.0025	U	0.0004	J	0.0011	J	0.0014	U	0.0023	U	0.0020	U	0.0004	U	0.0025	U	0.0025	U	0.0004	U	0.0044	U	0.0015	U	0.0004	U	0.0004	U	0.0004	U	0.0020	U			
Magnesium	NS	38		37	33	29	30	25.7	27.3	30.8	27.9	24.4	21.4	36		35	34	32	32.5	30.7	38.5	31.9	32.4	26.1	26.6															
Manganese	0.05	19	J	21	19	15	14.7	13.8	13	13	14.2	11.9	10.9	8.8	J	8.8	7.8	7.6	7.31	4.95	5.18	6.68	6.81	5.20	4.46															
Nickel ⁽²⁾	0.073	0.058		0.057	0.052	0.049	0.0469	0.0377	0.0354	0.0354	0.0418	0.0349	0.0369	0.043	0.044	0.041	0.039	0.0364	0.0267	0.0282	0.0324	0.0327	0.0274	0.0275																
Potassium	NS	5.7		6.1	5.5	5.1	5.27	4.56	4.79	4.82	4.83	4.47	3.99	4.4	4.7	4.8	4.5	4.77	4.15	4.26	4.52	4.62	4.17	4.00																
Sodium	NS	90	J	86	74	66	67.7	62	62.2	69.3	64.5	56.0	50.1	170	J	190	190	208	224	205	205	203	182	207																
Zinc	5	0.4		0.36	0.33	0.29	0.2985	0.237	0.263	U	0.239	0.192	0.169	0.21	0.19	0.2	0.18	0.183	0.146	0.151	U	0.153	0.158	0.193																
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L																
Bromide	NS	0.42	J	0.41	0.76	0.4	J	0.282	0.50	U	0.2	U	0.32	J	0.26	0.63	0.35	J	0.212	0.50	U	0.24	J	0.200	U	0.600	U	0.222	J	0.218	J									
Chloride	250	120	J	110	98	100	78.9	79.7	74.7	75.1	94.2	U	80.0	384	300	310	300	340	268	334	310	367	372	309	323															
Fluoride	2	0.94		0.96	1	0.89	J	0.643	1	0.86	0.86	0.676	0.554	0.500	U	0.39	0.33	0.47	0.4	J	0.29	0.38	0.37	J	0.370	0.361	0.231	0.296												
Sulfate	250	560	J	430	430	390	290	375	344	341	361	U	308	2510	290	J	250	270	250	179	254	227	J	268	U	272	U	223	203											
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L																
Nitrogen, Nitrate	10	ND		0.0029	J	0.05	U	0.05	U	0.11	0.11	U	0.16	0.05	U	0.0600	U	0.0300	U	0.150	U	1.8	2.0	9	1	9.57		13.2	11.4	10.3	10.4	9.83	10.7							
Nitrogen, Nitrite	1	ND		ND	0.05	U	0.05	U	0.003	0.010	U	0.16	0.005	U	0.120	U	0.0300	U	0.150	U	ND	ND	0.05	U	0.05	U	0.003	U	0.010	U	0.0032	J	0.0600	U	0.0600	U	0.0300	U	0.0600	U
Nitrogen, Nitrate-Nitrite	10	0.025	U	0.025	U	0.025	U	0.012	J	0.11	0.10	U	0.005	U	0.095	U	0.0600	U	0.0600	U	0.300	U	6.3	10	7.8	9.4	9.57		13.2	11.4	10.3	10.4	9.83	10.7						
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L																
Gross Alpha ⁽³⁾	15	10.9		10	13.4	14	24.8	14.5	12.2	5.59	U	19.0	6.5	8.62	2.91	U	5.1	7.27	1.06	U	19.2	4.8	-0.234	U	11.7	9.1	4	4.45												
Gross Beta ⁽⁴⁾	50	21.1		15.6	16.1	14.7	34.9	14	13.1	13.1	31.0	15.7	15.6	11.1	7.72	9.68	8.8	16.3	7.1	13.7	14.7	17.3	6.78	8.79																
Radium-226 ⁽⁵⁾	5	1.94		1.76	1.69	1.85	8.2	1.5	2.22	2.63	5.7	7.16	1.25	2.22	0.801	U	1.28	1.2	1.36	3.7	0.7	1.87	4.2	3.8	4.35	1.26														
Radium-228 ⁽⁵⁾	5	9.59		9.57	9.15	8.07	6.1	8.9	4.97	6.84	6.8	1.63	8.83	3.42	4.06	4.39	3.6	4.2	4.1	2.92	J	3.9	4.0	0.9	4.2															
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L																
Total Alkalinity	NS	5	U	5	U	5	U	5.0	U	4	U	4	U	5.00	U	5.00	U	5.00	U	5	U	5	U	5.0	U	4	U	5.00	U	5.00	U	5.00	U	5.00	U	7.08				
Total Dissolved Solids	500	920		880	850	720	694	577	550	587	584	738	J	523	890	990	1000	1000	1020	874	877	888	914	932	J	938														
Total Suspended Solids	NS	8.2		1.8	1	U	2.4	4.0	U	2	U	2.00	U	10.0	U	1.00	J	1	U	1	U	1.6	J	4.0	U	2	U	2.00	U	2.00	U	10.0	U	0.800						
Field Parameters																																								
pH (S.U.)	6.5-8.5	4		3.9	3.86	4.24	NA	NA	3.90	NA	4.19	3.55	3.85	4.09	3.97	4.19	4.25	NA	NA	4.28	4.1	NA	3.76	3.76																
Specific Conductivity (mS/cm)	NS	0.561		1.26	1.19	1.12	NA	NA	0.848	NA	0.583	0.705	0.673	1.57	1.69	1.56	1.72	NA	NA	1.470	1.18	NA	1.16	1.54																
Temperature (°c)	NS	18.14		15.44	16.18	15.04	NA	NA	15.21	NA	15.53	14.97	15.1	19.84	17.55	19.21	16.25	NA	NA	16.17	15.31	NA	15.43	15.02																
Turbidity (NTU)	NS	3.43		0.87	1.2	1.81	NA	NA	0.0	NA	1.7	1.9	0.0	1.4	NA	3.54	1.85	4.37	NA	NA	2.4	0.4	NA	0.6	0.0															
Dissolved Oxygen (mg/L)	NS	1.35		0.96	0.3	0.00	NA	NA	0.00	NA	0.00	0.00	0.00	0.15	0.54	1.68	2.15	NA	NA	3.22	1.33	NA	2.69	35.5																
Oxidation-Reduction Potential (mV)	NS	217		288	244	277	NA	NA	273	NA	234	334	244	396	220	380	380	NA	NA	363	227	NA	364	435																

Table 4
Data Summary of Analytical Results
Comparison July 2017 through October 2021
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	11A													
Sample Number:	SMCL	11A-20170706	DUP-02-20170706	11A-20171010	DUP-03-20171010	11A-20180430	11A-20181017		11A	DUP-1		11A	11A_051920	11A	11A
Date Sampled:	⁽¹⁾	7/6/2017	7/6/2017	10/10/2017	10/10/2017	4/30/2018	10/17/2018		7/9/2019	7/9/2019		11/22/2019	5/19/2020	9/21/2020	4/21/2021
Duplicate of:			11A-20170706		11A-20171010					11A					
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	0.26	0.26	0.036 UJ	0.024 UJ	0.019 J	0.055 J	0.132	0.104	0.050 U	0.155	0.0389 J	0.0288 J	0.0636 J	
Arsenic	0.01	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.001 U	0.001 U	0.0020 U	0.001 U	0.0010 U	0.0010 U	0.0010 U	
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.002 U	0.0010 U	0.0005 U	0.0004 U	0.0004 U	0.0020 U	
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	
Calcium	NS	15	16	17 J	16 J	16	15	14.1	14	16.5	13.5	9.97	8.55	9.10	
Iron	0.3	8.9	8.8	5.9 J	5.8 J	6	8.3	9.05	8.88	8.08	12.1	8.73	8.58	9.04	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0004 U	0.0020 U	0.00036 J	0.0004 U	0.0004 U	0.0020 U	
Magnesium	NS	2.5	2.6	2.6 J	2.5 J	2.2	2.4	2.26	2.3	2.09	1.97	1.93	1.74	1.76	
Manganese	0.05	0.15	0.16	0.19 J	0.17 J	0.11	0.4	0.121	0.125	0.154	0.14	0.112	0.0926	0.0905	
Nickel ⁽²⁾	0.073	0.005 U	0.005 U	0.005 UJ	0.005 UJ	0.005 U	0.005 U	0.002 U	0.002 U	0.0019 J	0.003 U	0.00054 J	0.0190	0.0020 U	
Potassium	NS	28	29 J	30	30	29	26	19.5	19.3	26.6	22.2	12.1	9.66	9.22	
Sodium	NS	34	34 J	33 J	33 J	33	30	28.9	28.6	34.8	31.1	22.9	19.2	19.6	
Zinc	5	0.045	0.041	0.02 UJ	0.02 UJ	0.02 U	0.02	0.0321	0.0318	0.0107 J	0.0475	0.0080	0.0054	0.0139	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	0.5 U	0.5 U	0.066 J	0.064 J	0.22 J	0.38 J	0.075	0.0651	0.50 U	0.2 U	0.200 U	0.100 U	0.500 U	
Chloride	250	17	17	17	17	17	17	18	18.1	16.5	18.7	16.3	1.00 U	14.0 J	
Fluoride	2	0.086 J	0.083 J	0.063 J	0.058 J	0.085 J	0.046 J	0.0519	0.0551	0.089 J	0.092 J	0.200 U	0.100 U	0.500 U	
Sulfate	250	12	12	14	14	14	14	14.2	14.3	14.7	12.9	14.9	13.2	11.7 J	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	ND	ND	ND	ND	0.05 U	0.05 U	0.006 U	0.006 U	0.11 U	0.1	0.0600 U	0.0300 U	0.150 U	
Nitrogen, Nitrite	1	ND	ND	ND	ND	0.05 U	0.05 UJ	0.006 U	0.006 U	0.013	0.005 U	0.0600 U	0.0300 U	0.150 U	
Nitrogen, Nitrate-Nitrite	10	0.14 J	0.025 U	0.025 U	0.025 U	0.025 U	0.11	0.012 U	0.012 U	0.10 U	0.095 U	0.120 U	0.0600 U	0.300 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha ⁽³⁾	15	0.47 U	1.55 U	2.22 J	2.7 J	0.333 U	0.522 U	1.3	3.2	2.06 U	3.42 U	2.7	1.3 U	1.37	
Gross Beta ⁽⁴⁾	50	19.7	21.1	26.1	25.9	25.9	21.2	23.7	25.3	24.5	16.1	7.5	5.67	10.6	
Radium-226 ⁽⁵⁾	5	0.653 J	0.699 J	0.96 J	0.862 J	0.769 J	0.872 U	0.8	0.9	1.04	1.39	0.7	0.407	0.415 J	
Radium-228 ⁽⁵⁾	5	0.488 J	0.288 U	0.576 J	0.807 J	0.503 J	1.1 U	0.7 U	0.7 U	-0.516 U	-0.849 U	1.4	-0.0266 U	0.820	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	100	120	110	110	120	110	89.2	93.9	113	98.5	62.9	58.9	53.3	
Total Dissolved Solids	500	130	130	200	240	190	190	160	170	181	152	132	125	132	
Total Suspended Solids	NS	26	24	12	13	11	15	18	20	14.2	24	12.0	3.00 J	8.00	
Field Parameters															
pH (S.U.)	6.5-8.5	7.08	NA	7.1	NA	7.14	7.18	NA	NA	NA	7.24	6.17	6.14	6.32	
Specific Conductivity (mS/cm)	NS	0.31	NA	0.392	NA	0.404	0.358	NA	NA	NA	0.292	0.158	0.186	0.194	
Temperature (°C)	NS	15.51	NA	16.65	NA	14.56	14.44	NA	NA	NA	15.36	14.28	14.2	13.69	
Turbidity (NTU)	NS	30	NA	5.99	NA	9.83	20.1	NA	NA	NA	37.9	5.7	0.0	11.4	
Dissolved Oxygen (mg/L)	NS	0.00	NA	0.00	NA	0.00	0.00	NA	NA	NA	0.00	0.00	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	-69	NA	-175	NA	-125	-115	NA	NA	NA	-123	-50	80	-47	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through October 2021
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	11C											11R											
Sample Number:	SMCL	11C-20170706	11C-20171009	11C-20180501	11C-20181016	11C	11C	11C_051920	11C	11C	11C	11C	11R-20170706	11R-20171009	11R-20180430	11R-20181017	11R	11R	11R_051920	11R	11R	DUP-1-11R	11R	DUP-3-11R
Date Sampled:	⁽¹⁾	7/6/2017	10/9/2017	5/1/2018	10/16/2018	7/9/2019	11/22/2019	5/19/2020	09/21/2020	4/21/2021	9/21/2021		7/6/2017	10/9/2017	4/30/2018	10/17/2018	7/9/2019	11/22/2019	5/19/2020	9/21/2020	4/21/2021	4/21/2021	9/27/2021	9/27/2021
Duplicate of:																								
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	5.7	4	6	17 J	5.69	4.06	5.22	6.22	6.65	7.57		0.044 J	0.044 J	0.039 J		0.18	0.191	0.505	0.419	0.176	0.141	0.125	0.321
Arsenic	0.01	0.003 U	0.0024 J	0.003 U	0.0036	0.0028	0.0041	0.0013 J	0.0019 J	0.0010 U	0.0010 U		0.003 U	0.003 U	0.003 U	0.003 U	0.001 U	0.00028 J	0.001 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Beryllium	0.004	0.0027	0.0014	0.0022	0.0092	0.0047 J	0.0052	0.0033	0.0038	0.0047	0.0055 J		0.00027 J	0.00035 J	0.0004 U	0.00023 J	0.002 U	0.00025 J	0.00026 J	0.0004 U	0.0004 U	0.0004 U	0.0020 U	0.0020 U
Cadmium	0.005	0.0002 J	0.00017 J	0.0032	0.0021	0.0016 J	0.00050 J	0.0012 J	0.0017 J	0.0014 J	0.0020 U		0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0004 U	0.0020 U	0.0020 U
Calcium	NS	31	37	21	56	45.2	52.2	28.5	26.9	18.7	54.7		9	8.5	8.8	7.7	7.43	7.7	8.13	7.07	6.92	6.98	7.18	7.03
Iron	0.3	32	39	19	30	26.6	24.7	11.5	14.6	7.95	16.6		19	19	18	15	22.6	17.7	17.6	17.3	16.7	16.8	16.9	16.2
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0006 J	0.00042 J	0.00047 J	0.0020 U	0.0004 J	0.0020 U		0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.00038 J	0.00023 J	0.0004 U	0.0004 U	0.0004 U	0.0020 U	0.0020 U
Magnesium	NS	22	27	17	27	18	17.9	16.3	14.7	9.22	17.5		1.7	1.6	1.7	1.5	1.76	1.57	1.57	1.59	1.48	1.49	1.50	1.47
Manganese	0.05	12	16	8.6	17	10.8	10	6.4	7.53	4.54	9.18		0.14	0.13	0.13	0.15	0.124	0.12	0.127	0.131	0.117	0.118	0.117	0.112
Nickel ⁽²⁾	0.073	0.062	0.044	0.057	0.17	0.174	0.076	0.084	0.127	0.0956	0.117		0.005 U	0.005 U	0.005 U	0.005 U	0.002 U	0.0040 U	0.003 U	0.0005 J	0.0033 J	0.0096 J	0.0024 J	0.0020 U
Potassium	NS	4.4	4.8	3.4	4.7	4.35	3.8	3.51	3.83	2.98	3.93		1.9	2	2.3	2.3	1.9	2.11	1.95	1.68	1.52	1.51	1.57	1.61
Sodium	NS	27	34	21	27	14.5	17.9	16.4	16.4	7.75	16.8		9.6	9	9.7	8.2	8.59	8.03	8.51	8.40	7.00	7.02	7.03	7.54
Zinc	5	0.16	0.11	0.26	0.54	0.563	0.308	0.217	0.267	0.161	0.194		0.01 J	0.02 U	0.02 U	0.02 U	0.0036 J	0.0077 J	0.0075 J	0.0029	0.0032	0.0035	0.0093 J	0.0113
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	0.26 J	0.24 J	0.27 J	5 U	0.129	0.50 U	0.12 J	0.200 U	0.100 U	0.274 J		0.5 U	0.1 U	0.5 U	0.5 U	0.0219 J	0.50 U	0.2 U	0.200 U	0.100 U	0.100 U	0.500 U	0.500 U
Chloride	250	20	31	18 J	19	12.7	16.3	15.2	11.7	5.84	12.0		4.1	5	4.4	4.4	4.06	4.1	5.2	3.96 J	1.00 U	1.00 U	5.00 U	5.00 U
Fluoride	2	0.29	0.44	0.27 J	0.9 J	0.406	0.79	0.29	0.354	0.359	0.687		0.079 J	0.052 J	0.082 J	0.04 J	0.0432	0.088 J	0.086 J	0.200 U	0.100 U	0.100 U	0.500 U	0.500 U
Sulfate	250	120	110	110	350	207	243	145	155	180	260		12	13	27	13	13.8	14.2	14.6	14.6	13.7	13.7	11.9 J	11.5 J
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	0.0081 J	0.0061	1.5	0.088	0.718	0.11 U	1.2	0.762	3.03	0.0600 U		ND	ND	0.05 U	0.05 U	0.006 U	0.11 U	0.35	0.0600 U	0.0300 U	0.0300 U	0.150 U	0.150 U
Nitrogen, Nitrite	1	0.0073 J	ND	0.05 U	0.05 U	0.0097 J	0.010 U	0.023	0.0600 U	0.0300 U	0.0600 U		ND	ND	0.05 U	0.05 UJ	0.006 U	0.0052	0.005 U	0.0600 U	0.0300 U	0.0300 U	0.150 U	0.150 U
Nitrogen, Nitrate-Nitrite	10	0.051 UJ	0.044 J	1.2	0.094	0.728	0.10 U	1.2	0.762	3.03	0.120 U		0.014 UJ	0.025 U	0.025 U	0.025 U	0.012 U	0.10 U	0.35	0.120 U	0.0600 U	0.0600 U	0.300 U	0.300 U
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha ⁽³⁾	15	5.47	0.427 U	2.79	7.58	3.3	5.85	4.55 U	5.4	3.96	5.19		1.14 U	1.43 J	2.97 J	0.908 U	1.4	5.87	2.19 U	2.3	1.32 J	1.55 J	2.51	1.49
Gross Beta ⁽⁴⁾	50	5.75 U	2.51 J	4.66	4.03	8.9	5.93	4.59 J	13.0	4.4	7.2		2.66 U	2.14 J	4.22	2.55 J	4.3	5.34	4.15 U	4.4	1.42 J	1.45 J	3.51	4.44
Radium-226 ⁽⁵⁾	5	0.115 U	0.123 J	0.082 U	0.395 U	0.5	0.431 U	0.208 U	1.2	0.149 J	0.64		0.775 J	0.812 J	0.912 J	0.862 U	0.6	1.45	0.84 J	1.4	1.14	1.05	0.697	0.784
Radium-228 ⁽⁵⁾	5	0.936 J	0.961 J	0.589	1.42	0.8	1.79 U	-0.254 U	1.5	1.52	3.27		0.489 J	1.08	0.3 U	0.46 U	1.2	0.373 U	0.518 U	0.9 U	0.628	0.415 J	0.872 J	0.950
Miscellaneous		mg/L	mg/L	mg/L J	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	69	200	83	44	5 U	13.5	32	34.7	5.00 U	7.23		29	36	58	5 U	24.5	26.5	52.5	38.5	46.9	45.8	40.0	39.7
Total Dissolved Solids	500	360	450	350	530	455	457	302	388	320	536		59	83	92 U	85	67	186	78	77.0	99.0	69.0 J	199 J	98.0 J
Total Suspended Solids	NS	71	62	13	75	65	30.5	34.8	54.0	12.0	40.0		26	33	4.9	29	41	14.2	18.3	27.0	5.00 J	23.0 J	5.33	6.00
Field Parameters																								
pH (S.U.)	6.5-8.5	5.87	6.22	5.73	5.5	NA	NA	5.65	5.64	4.56	5.23		6.16	5.85	6.09	6.22	NA	NA	6.31	6.08	5.94	NA	6.08	NA
Specific Conductivity (mS/cm)	NS	0.225	0.782	0.426	0.78	NA	NA	0.378	0.281	0.286	0.512		0.151	0.152	0.189	0.156	NA	NA	0.143	0.097	0.129	NA	0.131	NA
Temperature (°C)	NS	17.56	23.37	17.04	16.96	NA	NA	14.48	15.06	12.78	14.27		18.38	16.42	15.33	13.97	NA	NA	14.27	15.21	14.13	NA	13.82	NA
Turbidity (NTU)	NS	24.8	19.8	19.8	63.4	NA	NA	38.1	6.6	88.8	57.7		10.8	26	1.14	19.7	NA	NA	17.6	6	2.9	NA	8.6	NA
Dissolved Oxygen (mg/L)	NS	0.00	0.00	1.42	0.00	NA	NA	0.00	0.00	0.00	0.00		0.00	0.88	0.00	0.00	NA	NA	0.00	0.00	0.00	NA	0.00	NA
Oxidation-Reduction Potential (mV)	NS	-53	-91	4	104	NA	NA	102	39	234	118		1	-19	-22	-3	NA	NA	-36	-43	69	NA	-32	NA

Table 4
Data Summary of Analytical Results
Comparison July 2017 through October 2021
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	12R												13A											
Sample Number:	SMCL	12R-20170711	12R-20171016	12R-20180509	12R-20181025	12R	12R	12R	12R_051820	12R	12R	12R	12R	13A-20170630	13A-20171003	13A-20180502	13A-20181019	13A	13A	13A_051420	13A	13A	13A	13A	
Date Sampled:	⁽¹⁾	7/11/2017	10/16/2017	5/9/2018	10/25/2018	7/16/2019	11/20/2019	11/19/2019	5/18/2020	09/29/2020	4/28/2021	9/29/2021	9/29/2021	6/30/2017	10/3/2017	5/2/2018	10/19/2018	7/15/2019	11/22/2019	5/14/2020	09/17/2020	4/20/2021	9/27/2021	9/27/2021	
Duplicate of:																									
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Aluminum	0.05	0.17	0.12	0.14	0.09 J	0.336	NA	0.0592	0.103	2.24	0.0854	0.0892 J	0.0892 J	7.3	0.37	1.5	0.23 J	1.3	2.66	0.398	1.37	2.31	0.721	0.721	
Arsenic	0.01	0.0017 J	0.0021 J	0.0022 J	0.0017 J	0.0017 J	NA	0.0011 J	0.0013 J	0.0029	0.0015 J	0.0010 U	0.0018 J	0.0018 J	0.003 U	0.003 U	0.003 U	0.003 U	0.0032	0.0012 J	0.0011 J	0.0010 U	0.0010 U	0.0010 U	
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	NA	0.0010 U	0.0005 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.00066	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.00016 J	0.0005 U	0.0004 U	0.0004 U	0.0020 U	
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	NA	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.003 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	
Calcium	NS	1000	1500	1500	1300	779	NA	768	779	857	742	657	657	23	23	26	31	21.3	26.8	33.5	20.7	18.6	25.3	25.3	
Iron	0.3	0.96	0.66	0.99	0.69	2.86	NA	2.79	5.89	31.3	12.1	27.7	3.8	1.5	1.2	0.9	4.76	1.18	0.686	2.06	4.54	2.35	2.35	2.35	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	NA	0.00095 J	0.00017 J	0.00090 J	0.0004 U	0.0020 U	0.0083	0.0022 J	0.0013 J	0.0025 U	0.0071	0.0015 J	0.00028 J	0.0007 U	0.0025	0.0020 U	0.0020 U		
Magnesium	NS	0.58	0.36	1.6	1.4	11.2	NA	12	25.9	46.1	44.4	55.4	2.1	1.2	1	0.99	2.66	0.736	0.582	1.56	2.50	1.57	1.57	1.57	
Manganese	0.05	0.14	0.11	0.39	0.32	1.84	NA	1.82	4.88	16.8	12.4	17.0	0.039	0.026	0.022 U	0.023	0.0618	0.0173	0.0134	0.0364 J	0.0584	0.0359	0.0359	0.0359	
Nickel ⁽²⁾	0.073	0.045	0.057	0.05	0.05	0.0418	NA	0.0144	0.0165	0.0553	0.0464	0.0420	0.022	0.0027 J	0.0028 J	0.005 UJ	0.0086 J	0.0052	0.0026 J	0.0028	0.0044	0.0030 J	0.0030 J	0.0030 J	
Potassium	NS	13	12	11	12	12.1	NA	10.6	10.3	10.7	10.9	10.4	33	29	27	27 J	19.2	22.7	21	20.9	16.0	15.8	15.8	15.8	
Sodium	NS	410	290	240	260	346	NA	301	287	334	340	378	32	29	28	28	18.5	28	25.1	21.1	13.9	17.6	17.6	17.6	
Zinc	5	0.022	0.011 J	0.013 J	0.02	0.0285	NA	0.10 U	0.0133 J	0.144	0.0513	0.0905	0.035	0.02 U	0.02 U	0.02 U	0.0392	0.0055 J	0.015 U	0.0081	0.0157	0.0159	0.0159	0.0159	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Bromide	NS	12	12	11	8.5 J	8.45	8.8	NA	7	7.93	7.41	7.34	0.5 U	0.1 U	0.5 U	0.5 U	0.0294 J	0.50 U	0.19 J	0.200 U	0.100 U	0.500 U	0.500 U		
Chloride	250	2600	2300	2200	1800 J	1540	NA	1530	1710	1530	1320	1340	3	3.6	3.8	4.4	2.68	4.9	5.6	3.55 J	2.76 J	5.00 U	5.00 U		
Fluoride	2	1 U	0.06 UJ	1 U	1 UJ	0.02	0.24	NA	0.18 J	0.259	0.100 U	0.500 U	0.16	0.15	0.14	0.12	0.0919	0.18 J	0.21	0.220	0.100	0.500 U	0.500 U		
Sulfate	250	190	250	260	440 J	393	NA	491	594	811	695	753	13	13	50	13	13.7	13.5	13	15.2	14.3	12.6 J	12.6 J		
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	0.010 J	0.0021 J	0.037 J	0.036 J	0.0704	0.11 U	NA	0.58	0.329	0.875 J	0.500 UJ	ND	0.0016 J	0.05 U	0.05 U	0.006 U	0.11 U	0.1 U	0.0600 U	0.0300 U	0.150 U	0.150 U		
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.35	0.006 U	0.033	NA	0.088	0.348	0.249 J	0.177 J	ND	ND	0.05 U	0.05 UJ	0.006 U	0.012	0.005 U	0.0600 U	0.0300 U	0.150 U	0.150 U		
Nitrogen, Nitrate-Nitrite	10	0.095	0.013 J	0.1	0.24 U	0.0704	0.10 U	NA	0.67	0.677	1.12 J	0.656 J	0.025 U	0.025 U	0.025 U	0.025 U	0.012 U	0.10 U	0.095 U	0.120 U	0.0600 U	0.300 U	0.300 U		
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha ⁽³⁾	15	15.5 U	12.4 U	1.98 U	19.6 U	6.9 U	NA	0.133 U	3.9 U	5.3 U	-4.18 U	5.82 J	4.6	3.93	0.918 U	0.793 U	4.3	1.87 U	5.08 J	3.9	3.14	1.54	1.54		
Gross Beta ⁽⁴⁾	50	2.01 U	7.7 U	21.6 U	17.8 U	15.6	NA	5.18 U	3.95 U	18.9	-3.96 U	6.00 J	27.1	27.3	22.8	17.9	22	19.1	18	26.7	12.6	15.1	15.1		
Radium-226 ⁽⁵⁾	5	2.25	0.913 J	0.48 J	0.742 J	0.7	0.412 U	NA	0.263 U	0.4	0.558 J	0.171 U	0.578 J	0.427 J	0.394 J	0.591 U	1.5	0.89	0.214 U	0.6	0.372 J	0.227 J	0.227 J		
Radium-228 ⁽⁵⁾	5	1.53	1.58 U	0.799 J	0.988 J	0.8	0.616 U	NA	0.0554 U	0.8 U	0.0204 U	-0.0248 U	0.663 J	1.15	0.132 U	0.315 U	0.9	0.857 U	-0.614 U	0.9 U	0.336	0.482 J	0.482 J		
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	5 U	580	820	760	5 U	50.5	NA	69.5	291	297	407	110	90	74	85	102	74.5	92.5	78.8	97.3	65.9	65.9		
Total Dissolved Solids	500	11000	11000	10000	8300	4220	NA	3760	4500	4300	4190	4100	260	230	250	160	202	132	181	126 J	165	131	131		
Total Suspended Solids	NS	32	19	45	200	92.9	NA	38.3	22.5	82.0	44.0	55.0	86	69	25	60	176	57.3	16.8	44.0	65.0	47.0	47.0		
Field Parameters																									
pH (S.U.)	6.5-8.5	13.18	12.87	11.66	9.68	NA	NA	NA	7.23	NA	NA	NA	10.41	10.26	10.42	10.53	NA	NA	11.70	9.99	7.48	10.07	10.07		
Specific Conductivity (mS/cm)	NS	7.17	10.7	6.12	5.37	NA	NA	NA	5.59	NA	NA	NA	0.103	0.325	0.367	0.36	NA	NA	0.550	0.174	0.211	0.224	0.224		
Temperature (°c)	NS	24.84	17.26	19.52	17.65	NA	NA	NA	17.12	NA	NA	NA	21.26	14.51	16.98	13.64	NA	NA	13.89	14.1	14.19	15	15		
Turbidity (NTU)	NS	6.51	6.93	5.58	6.85	NA	NA	NA	6.1	NA	NA	NA	135	63.7	17.8	8.21	NA	NA	7.4	20	129	30.4	30.4		
Dissolved Oxygen (mg/L)	NS	0.00	1.94	0.00	1.69	NA	NA	NA	0.00	NA	NA	NA	0.00	0.67	0.38	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00		
Oxidation-Reduction Potential (mV)	NS	-80	23	-195	-53	NA	NA	NA	-130	NA	NA	NA	-109	-84	-211	-119	NA	NA	-84	-220	-88	-242	-242		

Table 4
Data Summary of Analytical Results
Comparison July 2017 through October 2021
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	14R													16A												
Sample Number:	SMCL	14R-20170630	14R-20171010	14R-20180504	14R-20181018	DUP-02-20181018	14R	14R	14R_051820	DUP_051820	14R	14R	14R	16A-20170713	16A-20171013	16A-20180507	16A-20181025	DUP-04-20181025	16A	DUP-3	16A	16A_051420	16A	16A	16A		
Date Sampled:	⁽¹⁾	6/30/2017	10/10/2017	5/4/2018	10/18/2018	10/18/2018	7/16/2019	11/19/2019	5/18/2020	5/18/2020	09/29/2020	4/28/2021	9/28/2021	7/13/2017	10/13/2017	5/7/2018	10/25/2018	10/25/2018	7/11/2019	7/11/2019	11/19/2019	5/14/2020	9/24/2020	4/26/2021	9/21/2021		
Duplicate of:						14R-20181018				14R								16A-20181025		16A							
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L		
Aluminum	0.05	18	15	15 J	13	13	15.2	11.6	14.8	12.5	12.6	9.93	9.33	0.031 J	0.05 U	0.026 J	0.024 J	0.038 J	0.0293	0.0289	0.0242 J	0.0429 J	0.0214 J	0.0101 J	0.0431 J		
Arsenic	0.01	0.013	0.012	0.015	0.011	0.011	0.0065	0.0157	0.0161	0.0169	0.0095	0.0091	0.0043	0.003 U	0.0019 J	0.003 U	0.003 U	0.0016 J	0.0017 J	0.0016 J	0.0022	0.0016 J	0.0010 U	0.0016 J	0.0010 U		
Beryllium	0.004	0.0078	0.0069	0.0075	0.006	0.0062	0.0056 J	0.0064	0.0064	0.0067	0.0051	0.0033	0.0043 J	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.002 U	0.000076 J	0.000082 J	0.0004 U	0.0004 U	0.0020 U		
Cadmium	0.005	0.02 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.002 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0004 U	0.00022 J	0.0004 U	0.00016 J	0.0004 U	0.0004 U	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0020 U		
Calcium	NS	270	220 J	240	220	210	221	215	200	220	207	206	197	86 J	82 J	64	67	68	61.2	61.4	65.6	75.6	59.9	52.6	55.0		
Iron	0.3	420	360 J	390	350	350	354	357	310	339	352	343	330	31	27 J	20	22	22	23.5	24.2	21.3	22.7	19.1	14.5	15.2		
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0029	0.0021	0.0022	0.00050 U	0.0004 U	0.0020 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0004 U	0.0017 J	0.00043 J	0.0004 U	0.0004 U	0.0020 U		
Magnesium	NS	230	210 J	210	180	180	211	191	177	193	198	192	180	54	49 J	42	42	42	38.4	38.4	39.4	47.4	37.6	34.0	35.0		
Manganese	0.05	230	190 J	200	180	170	200	170	161	198	172	166	151	29 J	32 J	26	25	24	25.1	23.7	21.4	20.8	23.8	19.6	19.9		
Nickel ⁽²⁾	0.073	0.9	0.7 J	0.77	0.64	0.63	0.727	0.622	0.843	0.709	0.675	0.523	0.627	0.0065	0.0061	0.0066	0.0057	0.0065	0.0087 J	0.0083 J	0.0072	0.0057	0.0068	0.0057	0.0065 J		
Potassium	NS	24	22	22	19	19	21.1	19	23	19.9	19.0	19.3	17.9	11	12	10	11	11	10.1	10.1	10.5	11.9	9.65	9.23	8.69		
Sodium	NS	440	390 J	400	330	330	390	339	326	355	360	351	328	52 J	49 J	38	40	41	36	36.2	38.2	46	37.8	32.6	31.6		
Zinc	5	2.2	1.8 J	1.9	1.7	1.7	1.63	1.76	2.2	2.24	1.57	1.43	1.24	0.011 J	0.02 U	0.0099 J	0.011 J	0.055 J	0.0153	0.606	0.10 U	0.0092 J	0.0086	0.0078	0.0120		
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L		
Bromide	NS	4.6 J	2.6	4.4 J	2.5	2.5	2.21	1.5	3.6	3.5	2.46	2.39	2.44	0.44 J	0.48	0.5 U	5 UJ	5 UJ	0.29	0.287	0.24 J	0.4 J	0.295 J	0.247 J	0.253 J		
Chloride	250	680	620	650	610	610	528	484	576	615 J	598	527	506	31	31	25	28 J	28 J	25.4	25.5	24.2	24.3	21.0	16.0	15.1		
Fluoride	2	1.3 J	0.17	1.1 J	0.74	0.68	0.262	0.83	0.84	0.79	0.687	0.100 U	0.740	0.1 U	0.066 J	0.1 U	1 UJ	1 UJ	0.02	0.02	0.11 J	0.056 J	0.200 U	0.100 U	0.200 U		
Sulfate	250	3600	2600	3000	2800	2800	2370	2730	2730	3620 J	2380	2880	2730	510 J	460	440	420 J	420 J	282	283	387	365	360	329	328		
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L		
Nitrogen, Nitrate	10	ND	ND	0.05 U	0.05 U	0.05 U	0.006 U	0.11 U	0.19	0.1 U	0.0600 U	0.0300 U	0.150 U	ND	0.018	0.072	0.05 U	0.05 U	0.006 U	0.006 U	0.11 U	0.18	0.0600 U	0.0372 J	0.0600 U		
Nitrogen, Nitrite	1	ND	ND	0.05 UJ	0.05 U	0.05 U	0.006 U	0.010 U	0.005 U	0.005 U	0.0600 U	0.0300 U	0.150 U	ND	ND	0.05 U	0.05 U	0.05 U	0.006 U	0.006 U	0.010 U	0.005 U	0.0600 U	0.0300 U	0.0600 U		
Nitrogen, Nitrate-Nitrite	10	0.067 U	0.025 U	0.025 UJ	0.043 J	0.039 J	0.012 U	0.10 U	0.19	0.095 U	0.120 U	0.0600 U	0.300 U	0.057	0.025 U	0.032 J	0.025 U	0.025 U	0.012 U	0.012 U	0.10 U	0.18	0.120 U	0.0600 U	0.120 U		
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L		
Gross Alpha ⁽³⁾	15	44.4	23.4 U	31.4 U	26.4 U	5.18 U	20.1	11 U	10.5 U		16.4	8.64 J	4.75 J	-1.35 U	0.878 U	6.03	3.56 U	3.65 U	5.9	2.8 U	3.36 U	1.27 U	1.4 U	0.119 U	1.12 J		
Gross Beta ⁽⁴⁾	50	34.6	30.5	32.7	26.1 J	16.1 J	68.7	30.7	27.5 J		56.1	71.9	23.0	9.31	10.8	6.5	9.12	7.72	18.6	15	12.2	9.25	14.8	7.8	9.46		
Radium-226 ⁽⁵⁾	5	1.3	1.69	1.74	1.58	1.4	10.7	1.41	1.3		1.8	10.6	1.46	0.227 U	0.343 J	0.345 U	0.564 U	0.391 U	1.4	1.4	0.354 U	0.241 U	0.8 U	0.989	0.752		
Radium-228 ⁽⁵⁾	5	10.4	9.61	12	10.5	10.8	11.6	11.3	11 J		8.8	0.481	12.2	1.14 U	1.33	0.622 J	1.23	0.978 J	1.1	0.8	0.675 U	0.818 U	1.1	0.21	0.48 J		
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L		
Total Alkalinity	NS	5 U	5 U	5 U	5 U	5 U	5 U	5.0 U	4 U	4 U	5.00 U	5.00 U	5.00 U	110	120	64	110 UJ	5 U	103	106	73	77.5	71.7	75.5	61.8		
Total Dissolved Solids	500	5500	5300	5100	4900	5000	5170	4310	4760	4720	4530	4550	4740	890	830	770	730	720	640	668	645	634	631	688	626		
Total Suspended Solids	NS	9.1	10	6.7	3.8		4.4	0.364 U	7	8.2	18.0	10.0 U	0.400 U	49	5.2	12	41	38	20	16.3	4.9	10.5	9.00 J	18.0	8.00		
Field Parameters																											
pH (S.U.)	6.5-8.5	4.42	4.37	4.03	4.42	NA	NA	NA	4.54	NA	4.4	4.04	4.31	6	5.82	5.93	5.95	NA	NA	NA	NA	5.75	5.96	5.65	5.78		
Specific Conductivity (mS/cm)	NS	5.57	5.19	5.18	5.17	NA	NA	NA	5.00	NA	4.34	4.85	4.85	1.14	1.24	1.04	1.13	NA	NA	NA	NA	0.879	0.574	0.674	0.687		
Temperature (°C)	NS	18.87	16.54	17.36	15.14	NA	NA	NA	14.80	NA	14.29	14.27	14.98	21.74	18.2	21.53	17.96	NA	NA	NA	NA	16.69	15.97	16.47	17.43		
Turbidity (NTU)	NS	1.58	1.4	3.13	0.85	NA	NA	NA	2.3	NA	7.8	0.0	0.0	7.83	5.43	9.95	19.2	NA	NA	NA	NA	22.4	5.5	5.3	22.7		
Dissolved Oxygen (mg/L)	NS	0.00	0.73	0.21	0.00	NA	NA	NA	0.00	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00		
Oxidation-Reduction Potential (mV)	NS	150	202	134	207	NA	NA	NA	174	NA	190	221	191	37	-6	47	35	NA	NA	NA	NA	39	8	72	52		

Table 4
Data Summary of Analytical Results
Comparison July 2017 through October 2021
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	18B												21D											
Sample Number:	SMCL	18B-20170712	18B-20171017	18B-20180507	DUP-03-20180507	18B-20181022	18B	18B	18B_051520	18B	18B	18B	18B	21D-20170710	21D-20171004	21D-20180502	21D-20181024	21D	21D	21D_051420	21D	21D	21D	21D	
Date Sampled:	⁽¹⁾	7/12/2017	10/17/2017	5/7/2018	5/7/2018	10/22/2018	7/9/2019	11/22/2019	5/15/2020	09/23/2020	4/19/2021	9/21/2021	7/10/2017	10/4/2017	5/2/2018	10/24/2018	7/15/2019	11/26/2019	5/14/2020	9/16/2020	4/20/2021	9/27/2021			
Duplicate of:					18B-20180507																				
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Aluminum	0.05	0.036 J	0.05 U	0.05 U	0.018 J	0.018 J	0.004 U	0.0469 J	0.013 J	0.0080 U	0.0080 U	0.0400 U	18	0.29 J	0.55	1.2	1.48	0.95	0.811	4.53	2.14	1.29			
Arsenic	0.01	0.003 U	0.002 J	0.0015 J	0.0015 J	0.003 U	0.001 U	0.0014 J	0.0014 J	0.0010 U	0.0010 J	0.0010 U	0.0016 J	0.003 U	0.003 U	0.003 U	0.003 U	0.0034	0.010 U	0.00053 J	0.0028	0.0010 U	0.0010 U		
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.0010 U	0.0005 U	0.0004 U	0.0004 U	0.0020 U	0.0094	0.0012	0.00074	0.00032 J	0.002 U	0.005 U	0.0005 U	0.0009 J	0.0004 U	0.0020 U			
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.002 U	0.0004 U	0.0020 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.015 U	0.002 U	0.0004 U	0.0004 U	0.0020 U			
Calcium	NS	51	46	44	45	41	46.4	52	48.9	47.9	45.7	45.9	26	19 J	52	66	49.7	82.5	127	65.5	58.5	98.2			
Iron	0.3	24	19	19	20	18	22.1	25.9	25.5	25.3	24.4	24.1	12	3.7 J	1.7	1.4	1.73	0.306	0.126	3.27	0.763	1.07			
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0020 U	0.001 U	0.0004 U	0.0004 U	0.0020 U	0.016	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0006 J	0.010 U	0.00041 J	0.0050	0.0004 U	0.0020 U		
Magnesium	NS	2.7	2.2	2.4	2.4	2	2.53	2.49	2.36	2.73	2.63	2.52	1.3	0.51 J	0.24 J	0.14 J	0.26	2.5 U	0.25 U	0.481	0.147	0.196			
Manganese	0.05	0.17	0.16	0.15	0.15	0.13	0.136	0.159	0.16	0.171	0.172	0.150	0.12	0.093 J	0.047	0.019 J	0.0443	0.0065 J	0.004	0.0648	0.0280 J	0.0315			
Nickel ⁽²⁾	0.073	0.004 J	0.005 U	0.005 U	0.005 U	0.005 U	0.002 U	0.004 U	0.003 U	0.0016 J	0.0014 J	0.0023 J	0.02	0.0027 J	0.005 U	0.0032 J	0.0043 J	0.020 U	0.0013 J	0.0116	0.0107	0.0030 J			
Potassium	NS	4.9	5.1	2.9	3	4.5	3.89	2.22	2.42	2.04	1.88	2.10	37	26	40	40 J	33.6	38.8	39.1	29.3	27.0	47.7			
Sodium	NS	14	13	8.2	8.3	11	11	7.81	7.41	7.99	7.31	7.76	60	47 J	80	82	76.1	82.3	92.3	68.3	66.6	122			
Zinc	5	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.002 U	0.002 U	0.015 U	0.0035	0.0013 J	0.0144	0.024	0.02 U	0.02 U	0.02 U	0.0087 J	0.10 U	0.015 U	0.0062	0.0066	0.0825			
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Bromide	NS	0.22 J	0.11 J	0.22 J	0.17 J	0.23 J	0.0968	0.50 U	0.17 J	0.200 U	0.0551	0.200 U	0.5 U	0.1 U	0.5 U	0.52	0.207	0.24 J	0.58	0.267 J	0.263 J	0.500 U			
Chloride	250	15	15	8.5	8.4	16	10.8	7.2	7	4.51 J	5.71	4.89 J	11	8	27	38	44	54.6	67.7	53.6	53.3	39.7			
Fluoride	2	0.089 J	0.04 J	0.07 J	0.071 J	0.067 J	0.0309	0.074 J	0.088 J	0.200 U	0.0325	0.200 U	0.22	0.18 J	0.2	0.26 J	0.228	0.34	0.31	0.278	0.247	0.500 U			
Sulfate	250	0.53 J	0.88 U	0.97 J	0.99 J	1	0.394 J	2.1	7.4	2.00 U	0.100 U	2.00 U	15	14	28	28 J	28.5	37.1	40.5	38.5	41.5	37.6			
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	0.0027 J	0.03 J	0.031 J	0.041 J	0.0196 J	0.11 U	0.1 U	0.0600 U	0.00300 UJ	0.0600 U	ND	0.0021 J	0.05 U	0.05 U	0.006 U	0.11 U	0.1 U	0.0600 UJ	0.0300 U	0.150 U			
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 U	0.05 U	0.015 J	0.036	0.0081 J	0.120 U	0.00857 J	0.0600 U	ND	ND	0.05 U	0.05 R	0.006 U	0.010 U	0.005 U	0.120 U	0.0300 U	0.150 U			
Nitrogen, Nitrate-Nitrite	10	0.025 U	0.025 UJ	0.025 U	0.025 U	0.071	0.0346 J	0.10 U	0.095 U	0.0600 U	0.00857 J	0.120 U	0.025 UJ	0.025 U	0.025 U	0.025 UJ	0.012 U	0.10 U	0.095 U	0.0600 UJ	0.0600 U	0.300 U			
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha ⁽³⁾	15	0.363 U	0.106 U	0.827 U	2.64 J	1.16 U	1.7	3.39 U	3.45 J	1.5 U	0.463 J	0.798 J	61.1	4.08	5.01	4.31	4.2	2.26 U	1.04 U	12.7	2.15 J	1.03 J			
Gross Beta ⁽⁴⁾	50	8.61	2.76 J	2.2 J	2.06 J	3.3 J	4.8	2.65 U	2.4 U	3.2	1.18 J	1.93 J	93.1	28.4	32.3	35.7	43.8	35	29	45.7	22.7	18.5			
Radium-226 ⁽⁵⁾	5	0.62 J	0.316 J	0.42 J	0.534 J	0.525 U	0.7	1.18	0.592 J	0.8	-0.7 U	0.4	1.44 U	0.591 J	0.546 J	0.815 U	1	0.87	1.11	0.6	-0.0938 U	0.438 J			
Radium-228 ⁽⁵⁾	5	1.19	0.472 U	0.374 J	0.567 J	0.316 U	0.6 U	0.126 U	1.24 U	0.9	0.347	4.51	1.4	0.225 U	0.213 U	0.54 U	0.8 U	1.14 U	-0.366 U	0.9	0.0338	-0.827 U			
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	150	140	160 J	89 J	140	144	143	137	162	145	148	180	150	110	240	212	350	427	192	227	199			
Total Dissolved Solids	500	190 U	200 J	190	250	210	130	203	191	164	39.0	202	1100 J	450	420	450	502	523	569	337	454	406			
Total Suspended Solids	NS	55	41	47	47	43	46	49.7	44	52.0	23.0	47.7	200	230	80	77 J	104	17.7	5.4	103	14.0	3.67			
Field Parameters																									
pH (S.U.)	6.5-8.5	7.24	6.98	6.78	NA	6.98	NA	NA	6.82	7.06	6.87	6.82	10.68	10.68	11.26	11.91	NA	NA	12.75	11.57	12.85	11.89			
Specific Conductivity (mS/cm)	NS	0.335	0.415	0.406	NA	0.372	NA	NA	0.342	0.238	0.305	0.311	0.17	0.415	1.07	1.34	NA	NA	2.42	0.762	1.01	0.821			
Temperature (°c)	NS	24.21	13.6	17.97	NA	17.07	NA	NA	15.95	16.77	15.43	15.17	18.99	13.93	14.84	13.76	NA	NA	13.69	14.4	13.56	14.14			
Turbidity (NTU)	NS	29.9	14.3	3.03	NA	9.15	NA	NA	0.0	3.3	0.0	0.1	NA	>1000	535	121	111	NA	NA	8.0	42.3	20.9	4.3		
Dissolved Oxygen (mg/L)	NS	0.00	0.00	0.00	NA	1.9	NA	NA	0.00	0.00	0.00	0.00	0.00	0.44	0.65	0.00	NA	NA	0.00	0.00	0.00	0.00			
Oxidation-Reduction Potential (mV)	NS	-111	-162	-133	NA	-144	NA	NA	-159	-181	-109	-177	-53	-159	-300	-220	NA	NA	-205	-65	-238	-187			

Table 4
Data Summary of Analytical Results
Comparison July 2017 through October 2021
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	21S												CSW-5											
Sample Number:	SMCL	21S-20170710	21S-20171004	21S-20180502	21S-20181024	21S	21S	DUP-112619	21S_051420	21S	21S	21S	CSW-5-20170712	DUP-03-20170712	CSW-5-20171017	CSW-5-20180509	DUP-04-20180509	CSW-5-20181025	CSW-5	CSW-5	CSW-5_052220	CSW-5	CSW-5	CSW-5	
Date Sampled:	⁽¹⁾	7/10/2017	10/4/2017	5/2/2018	10/24/2018	7/15/2019	11/26/2019	11/26/2019	5/14/2020	09/16/2020	4/20/2021	9/27/2021	7/12/2017	7/12/2017	10/17/2017	5/9/2018	5/9/2018	10/25/2018	7/16/2019	11/21/2019	5/22/2020	09/22/2020	4/19/2021	9/30/2021	
Duplicate of:							21S							CSW-5-20170712			CSW-5-20180509								
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Aluminum	0.05	55	40 J	50	52	51.2	53.5	52.6	54.8	48.0	43.1	41.2	0.19	0.23	0.028 J	0.022 J	0.025 J	0.05 J	0.171	0.253	0.42 J	0.0866	0.304	0.231	
Arsenic	0.01	0.0063	0.0065	0.017	0.0052	0.005	0.031	0.0305	0.0201	0.0010 U	0.0041	0.0010 J	0.0032	0.0035	0.0033	0.0027 J	0.0027 J	0.0026 J	0.001 J	0.0036	0.0038 J	0.0031	0.0045	0.0010 U	
Beryllium	0.004	0.0068	0.0073	0.0068	0.0075	0.0055 J	0.0071	0.007	0.0069	0.0027	0.0047	0.0050 J	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.000082 J	0.005 U	0.0004 U	0.0004 U	0.0020 U	
Cadmium	0.005	0.0079	0.0038	0.004	0.0057	0.0042	0.0046 J	0.0049 J	0.0038	0.0039	0.0037	0.0036 J	0.0005	0.00049 J	0.00036 J	0.0004 J	0.00042 J	0.00017 J	0.0004 U	0.00098 J	0.0014 J	0.0004 U	0.0004 U	0.0020 U	
Calcium	NS	210	170 J	210	210	196	227	227	270	183	176	184	260	260	230	200	190	200	195	210	183	188	185	179	
Iron	0.3	290	290 J	270	260	269	294	291	375	261	247	249	630	590	620	590	610	560	513	618	504	540	518	489	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 J	0.0033 J	0.0031 J	0.0013 J	0.0039	0.00055 J	0.0020 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0025	0.0025 J	0.0020 U	0.0004 U	0.0020 U	
Magnesium	NS	190	160 J	200	200	202	211	207	254	184	177	175	260	270	200	180	170	180	196	195	167	185	185	166	
Manganese	0.05	170	170 J	170	170 J	165	183	184	159	151	141	136	170	160	180	150	160	150	160	150	128	138	130	113	
Nickel ⁽²⁾	0.073	0.37	0.39 J	0.4	0.39 J	0.388	0.515	0.514	0.493	0.346	0.252	0.376	0.24	0.25	0.2	0.18	0.18	0.18	0.193	0.183	0.21	0.172	0.119	0.169	
Potassium	NS	11	9.3	12	12 J	12.1	10.3	10.2	12.3	11.2	11.3	10.3	19	20	17	14	14	15	15.8	14.8	17	15.6	15.1	14.0	
Sodium	NS	360	290 J	360	360	374	401	398	477	360	315	327	440	450	350	300	290	310	348	343	281	332	304	286	
Zinc	5	1.1	1 J	1.1	1.1	1	1.66	1.59	1.75	0.578	0.652	0.825	0.22	0.23	0.18	0.17 J	0.17 J	0.18	0.178	0.185	0.518 U	0.144	0.134	0.121	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Bromide	NS	2.6	2.6	2.8	5 U	2.19	1.2	1.2	2.6	2.75	2.62	2.47	2.9 J	2.9 J	2.4	4.5 J	3.3 J	2.2 J	1.86	0.98	2.1	2.45	2.36	0.500 U	
Chloride	250	610	610	500	560	443	609	552	528	543	570	498	480	490	500	450	430	440 J	376	422	389	454	480	69.4	
Fluoride	2	2.5 U	0.084 J	0.24	0.61 J	0.0424	0.31	0.29	0.31	0.430	0.301	0.500 U	1 U	1 U	0.06 U	1 U	1 U	0.1 U	0.02	0.28	0.34	0.200 U	0.100 U	0.737	
Sulfate	250	1 U	2500	3400	2900 J	2890	2530	2960	6580	1770	2730	2810	3200	3200	2800	3000	3200	3200 J	2400	3730	2970	1810	2980	246	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	ND	0.05 U	0.05 U	0.377	0.11 U	ND	0.11 U	0.0600 U	0.0300 U	0.150 U	ND	ND	ND	0.05 U	0.05 U	0.05 U	0.0662	0.11 U	0.12	0.0600 U	0.0300 U	0.150 U	
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 R	0.006 U	0.010 U	0.010 U	0.0049 J	0.0600 U	0.0300 U	0.150 U	ND	ND	ND	0.05 U	0.05 U	0.05 U	0.006 U	0.013	0.0038 J	0.0600 U	0.0300 U	0.150 U	
Nitrogen, Nitrate-Nitrite	10	0.025 U	0.025 U	0.025 U	0.086 J	0.377	0.10 U	0.10 U	0.095 U	0.120 U	0.0600 U	0.300 U	0.25 U	0.025 U	0.025 U	0.025 U	0.025 U	0.081 U	0.0662	0.10 U	0.12	0.120 U	0.0600 U	0.300 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha ⁽³⁾	15	1.46 U	10 U	2.14 U	15.1 U	35.6	16.8	20	22.9	21.0	17.4 J	28.6	1.23 U	12.2 U	5.73 U	29.9 U	14.4 U	-2.08 U	8.2 U	-2.62 U	4.84 U	6.2 U	-2.37 U	0.750 U	
Gross Beta ⁽⁴⁾	50	1.42 U	41.4	14.3 U	20.4	48.3	28.5	28.3	21.3	53.6	29.2	46.8	17.5 J	9.7 U	1.02 U	11.8 U	19 J	9.4 U	26.1	18.2	16.3	26.3	-3.07 U	16.6	
Radium-226 ⁽⁵⁾	5	0.208 U	1.44	1.58	1.77	8.5	1.1	1.51	1.36	6.0	9.91	1.26	0.497 J	0.763 J	0.399 J	0.289 J	0.254 J	0.605 J	2	0.469 U	0.551 J	1.7 U	2.32	0.290	
Radium-228 ⁽⁵⁾	5	-0.486 U	10.2	9.55	10.1	7.4	14.9	15.4	7.48	8.4	0.509	11.4	1.92	1.56	1.28 U	1.97	1.19	1.84	1.5	0.65 U	2.07 J	1.4	0.557	1.52	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	5 U	5 U	5 U	5 U	5 U	5.0 U	5.0 U	4 U	64.3	39.8	5.00 U	78	82	120	15 J	5 U	94 U	79.5	16	102	115	45.2	38.3	
Total Dissolved Solids	500	4700 J	5700	4600	4600	5000	2220	7.0 J	4480	4520	4300	4570	4600	6400	5300 J	4900	4900	4900	5050	4180	4620	4490	4300	4730	
Total Suspended Solids	NS	5.6	2.5	1.1	1 U	2.6	2.6 J	2.1 J	3 J	2.00 U	2.00 U	1.50 J	130	140	10 U	33	31	72	43	87.7	61	71.0	15.0	43.0	
Field Parameters																									
pH (S.U.)	6.5-8.5	3.34	3.49	3.86	3.67	NA	NA	NA	3.46	3.6	3.52	3.51	5.55	NA	5.31	5.29	NA	5.48	NA	NA	5.39	5.41	5.46	5.35	
Specific Conductivity (mS/cm)	NS	4.6	4.93	4.59	5.03	NA	NA	NA	5.96	4.53	4.76	4.69	3.83	NA	5.34	4.98	NA	4.84	NA	NA	4.84	4.35	4.58	4.67	
Temperature (°c)	NS	19.87	17.98	20.22	13.15	NA	NA	NA	14.35	13.87	13.30	13.29	27.88	NA	14.47	16.9	NA	14.56	NA	NA	15.98	15.98	15.02	14.75	
Turbidity (NTU)	NS	2.98	2.85	1	0.81	NA	NA	NA	9.5	0.00	0.0	1.50	9.28	NA	1.67	3	NA	5.51	NA	NA	39.2	0.00	9.9	13.90	
Dissolved Oxygen (mg/L)	NS	0.00	0.00	0.00	0.00	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	NA	0.93	0.00	NA	0.00	NA	NA	0.00	0.00	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	299	236	277	265	NA	NA	NA	251	255	294	315	62	NA	36	25	NA	67	NA	NA	41	33	56	43	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through October 2021
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-7												CSW-9													
Sample Number:	SMCL	CSW-7-20170711	CSW-7-20171017	DUP-04-20171017	CSW-7-20180508	CSW-7-20181024	CSW-7	CSW-7	CSW-7_052020	CSW-7	CSW-7	CSW-7	CSW-9-20170712	CSW-9-20171006	CSW-9-20180501	CSW-9-20181023	CSW-9	CSW-9	CSW-9_051320	CSW-9	CSW-9	DUP-3-CSW-9	CSW-9				
Date Sampled:	⁽¹⁾	7/11/2017	10/17/2017	10/17/2017	5/8/2018	10/24/2018	7/10/2019	11/21/2019	5/20/2020	09/22/2020	4/27/2021	9/20/2021	7/12/2017	10/6/2017	5/1/2018	10/23/2018	7/10/2019	11/18/2019	5/13/2020	09/29/2020	4/26/2021	4/26/2021	9/30/2021				
Duplicate of:				CSW-7-20171017																							
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L		
Aluminum	0.05	0.24	0.14	0.14	0.12	0.11	0.282	0.202	0.22 J	0.220	0.192	0.338	0.18	0.036 J	0.045 J	0.064 J	0.115	0.0709	0.0469 J	0.0791	0.0360 J	0.0329 J	0.123 J				
Arsenic	0.01	0.0042	0.0053	0.0041	0.0044	0.0038	0.0033	0.0071	0.0046 J	0.0039	0.0047	0.0016 J	0.003 U	0.0023 J	0.003 U	0.0022 J	0.001 U	0.0012 J	0.00054 J	0.0010 J	0.0015 J	0.0013 J	0.0010 U				
Beryllium	0.004	0.0041	0.004	0.0042	0.0035	0.0027	0.0042 J	0.0058	0.0069 J	0.0056	0.0059	0.0098 J	0.0088	0.0088 J	0.0086	0.0081	0.0069 J	0.0113	0.0095	0.0018 J	0.0063	0.0066	0.0076 J				
Cadmium	0.005	0.00049 J	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.02 U	0.0004 U	0.0004 U	0.0020 U	0.00057	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0004 U	0.0020 U				
Calcium	NS	300	310	290	240	180	242	300	318	227	219	222	320	270 J	290	270	254	303	274	235	259	259	265				
Iron	0.3	320	320	300	280	220	269	321	323	254	242	248	620	620 J	610	660	572	611	630	648	599	596	614				
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.00090 J	0.0014 U	0.0004 U	0.0004 U	0.0020 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0116	0.00032 U	0.00050 U	0.0004 U	0.0004 U	0.0020 U				
Magnesium	NS	250	250	230	210	140	215	255	272	195	189	186	260	200 J	210	210	206	221	185	190	206	206	203				
Manganese	0.05	230	260	260	190	660 J	213	222	181	176	159	152	180	190 J	180	190	206	204	172	143	169	169	168				
Nickel ⁽²⁾	0.073	1.4	1.6	1.5	1.3	0.85 J	1.35	1.57	2.03	1.19	0.944	1.12	0.59	0.53 J	0.53	0.48	0.531	0.6	0.468	0.305	0.369	0.347	0.532				
Potassium	NS	13	13	13	11	8.2 J	12	11.8	12.1	10.6	10.2	9.59	16	13 J	14	14	14.3	14.3	14	12.4	13.8	13.9	13.3				
Sodium	NS	410	420	390	340	240	365	439	456	344	315	301	350	350 J	370	360	367	415	332	335	374	378	362				
Zinc	5	4	4.3	4	3.6	2.4	3.32	4.95	6.88 U	3.14	2.91	2.80	0.02	0.01 J	0.017 J	0.016 U	0.0315	0.123	0.0119 J	0.0024	0.0239	0.0235	0.0215				
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			
Bromide	NS	25 U	2.7	2.7	2.6	4.4 J	1.21	1.3	2.5	2.49	2.15	2.20	3.1 J	2.6	2.4	50 U	1.03	2.2	2.8	0.115	2.53	2.57	2.61				
Chloride	250	730	720	790	550	500	490	657	642	569	551	499	650	680	590	630	500	660	562	31.7	639	646	641				
Fluoride	2	5 U	0.06 U	0.06 U	0.077 J	1 U	0.01	0.093 J	0.12 J	0.200 U	0.100 U	0.335	1 U	0.06 U	0.1 UJ	10 U	0.01	0.19 J	0.1 J	0.0100 U	0.100 U	0.100 U	0.500 U				
Sulfate	250	3000	2500	2500	1 U	1800 J	2810	3200	2860	1560	2260	2430	3400	2900	2800	2900	3190	3280	7040	128	1720 J	2870 J	3060				
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			
Nitrogen, Nitrate	10	ND	ND	0.0018 J	0.05 U	0.05 U	0.0554	0.11 U	0.1 U	0.0600 U	0.0300 U	0.0600 U	ND	ND	0.05 U	0.05 U	0.151	0.11 U	0.1 U	0.00300 U	0.0300 U	0.0300 U	0.150 U				
Nitrogen, Nitrite	1	ND	ND	ND	0.05 U	0.05 R	0.003 U	0.0032 J	0.005 U	0.0600 U	0.0300 U	0.0600 U	ND	ND	0.05 U	0.05 U	0.003 U	0.010 U	0.019	0.00300 U	0.0300 U	0.0300 U	0.150 U				
Nitrogen, Nitrate-Nitrite	10	0.25 U	0.025 UJ	0.025 UJ	0.025 U	0.077 J	0.0554	0.10 U	0.095 U	0.120 U	0.0600 U	0.120 U	0.025 U	0.025 U	0.025 U	0.08 UJ	0.151	0.10 U	0.095 U	0.00600 U	0.0600 U	0.0600 U	0.300 U				
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L			
Gross Alpha ⁽³⁾	15	4.6 U	11.5 U	-6.61 U	7.76 U	3.3 U	15.1	11.8	2.6 U	14.7	1.23 U	0 U	13 U	-1.42 U	-3.05 U	6.01 U	10.4	8.12 U	4.08 U	6.3 U	-6 U	-3.34 U	3.31 U				
Gross Beta ⁽⁴⁾	50	14	10.6 U	1.54 U	15.4	11.7	27.2	17.1	23.4	33.3	9.72 J	19.4 J	4.02 U	13.6 U	7.08 U	10.7 U	17.8	12.6	9.01 U	17.7	-0.274 U	11.4 J	15.1 J				
Radium-226 ⁽⁵⁾	5	2.14	1.78	1.59	1.89	1.87	3.8	0.946	2.56	4.7	5.64	1.63	0.854 J	0.728 J	0.662 J	0.973 U	1.8	1.92	0.768 J	0.8	0.782	1.33	0.712				
Radium-228 ⁽⁵⁾	5	4.81	4.13	3.37	4.31	3.31	4.1	4.67	4.67	4.4	2.49	3.69	1.32	2.11 U	1.27	0.861 J	2	1.49	1.01 U	1.1	0.72	0.856	2.42				
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			
Total Alkalinity	NS	21 U	58	57	5 U	5 U	50.6	37	47.5	65.0	33.9	12.3	43	22	83	5 U	38.5	30	54	9.31 J	9.85 J	5.84 J	27.2				
Total Dissolved Solids	500	4700	5400 J	5400 J	4200	3500	4660	4570	4750	4020	4220 J	3970	5300	5600	5100	5400	5740	5420	5050	4290	5980	5820	5910				
Total Suspended Solids	NS	30	4.6 U	1 U	13	94 J	41	15.9	10.7	2.00 U	24.0 J	14.0	86	54	6.1	54	48	12.8	24	162	59.0	62.0	49.0				
Field Parameters																											
pH (S.U.)	6.5-8.5	5.43	5.39	NA	5.38	5.3	NA	NA	4.91	5.31	5.24	5.05	5.62	5.09	5.55	5.54	NA	NA	5.42	5.7	5.36		5.28				
Specific Conductivity (mS/cm)	NS	4.9	5.32	NA	4.81	5.04	NA	NA	5.56	3.98	4.52	4.7	4.04	5.21	5.75	5.38	NA	NA	5.84	4.21	5.64		6.07				
Temperature (°C)	NS	22.72	17.57	NA	21.06	16.68	NA	NA	15.62	17.28	14.89	14.73	27.22	19.55	15.24	16.18	NA	NA	14.80	14.52	14.82		13.88				
Turbidity (NTU)	NS	11.4	2.22	NA	6.2	16.5	NA	NA	1.5	8.5	14.1	0.7	3.92	1.44	2.01	1.6	NA	NA	3.4	6.9	0.0		0.0				
Dissolved Oxygen (mg/L)	NS	0.00	0.00	NA	0.00	0.00	NA	NA	0.00	0.00	0.00	17.10	0.00	0.6	0.00	0.00	NA	NA	0.00	0.00	0.00		0.00				
Oxidation-Reduction Potential (mV)	NS	78	24	NA	74	97	NA	NA	91	52	69	44	54	40	26	43	NA	NA	7	-13	65		28				

Table 4
Data Summary of Analytical Results
Comparison July 2017 through October 2021
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-10											CSW-13											
Sample Number:	SMCL	CSW-10-20170628	CSW-10-20171003	CSW-10-20180426	CSW-10-20181017	CSW-10	CSW-10	CSW-10_051320	CSW-10	CSW-10	CSW-10	CSW-10	CSW-13-20170630	CSW-13-20171003	CSW-13-20180502	CSW-13-20181019	CSW-13	DUP-4	CSW-13	DUP-112219	CSW-13_051420	CSW-13	CSW-13	CSW-13
Date Sampled:	⁽¹⁾	6/28/2017	10/3/2017	4/26/2018	10/17/2018	7/10/2019	11/18/2019	5/13/2020	9/24/2020	4/28/2021	9/29/2021		6/30/2017	10/3/2017	5/2/2018	10/19/2018	7/15/2019	7/15/2019	11/22/2019	11/22/2019	5/14/2020	9/17/2020	4/20/2021	9/27/2021
Duplicate of:																		CSW-13		CSW-13				
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	37	31	34	35	35.7	32.7	36.3	36.1	35.4	36.3	1.3	0.17	0.2	0.64	3.07	3.06	0.652	0.876	0.755	0.530	2.15	1.69	
Arsenic	0.01	0.0058	0.0093	0.011	0.011	0.0042	0.0150 J	0.0125	0.0055	0.0031	0.0010 U	0.0031	0.0022 J	0.0024 J	0.0029 J	0.0016 J	0.0015 J	0.0029	0.0023	0.0025	0.0010 U	0.0014 J	0.0011 J	
Beryllium	0.004	0.023	0.02	0.02	0.023	0.0154	0.0211	0.0202	0.0204	0.0090	0.0171	0.003	0.0004 U	0.00069	0.0018	0.0037 J	0.0039 J	0.0018	0.0023	0.0018	0.0018 J	0.0035	0.0030 J	
Cadmium	0.005	0.007	0.0032	0.0024	0.0027	0.0027	0.0022 J	0.002 J	0.0026	0.0027	0.0022 J	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.003 U	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	
Calcium	NS	300	270	280	290	265	275	280	260	250	259	25	19	20	17	24.4	24.7	21.3	19.9	25.2	13.4	19.9	18.0	
Iron	0.3	460	510	520	500	423	483	366	438	417	435	57	39	47	43	74.8	75.7	58.1	57.5	72	41.1	62.3	58.8 U	
Lead	0.015	0.0054	0.0051	0.0044	0.0046	0.0041	0.0064	0.0109	0.003	0.0033	0.0029 J	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0004 U	0.00017 J	0.00017 J	0.00059 J	0.0004 U	0.0004 U	0.0020	
Magnesium	NS	270	220	230	240	233	224	163	224	217	217	14	8.8	10	9.3	19.1	18.9	12.3	12.3	13.3	9.21	14.6	12.9	
Manganese	0.05	210	240	230	240	204	206	181	202	190	192	2.6	1.7	1.9	1.7	3.25	3.18	2.28	2.26	3.23	1.58	2.37	2.06	
Nickel ⁽²⁾	0.073	0.63	0.53	0.52	0.51	0.472	0.502	0.555	0.483	0.419	0.489	0.053	0.019	0.026	0.033	0.0787	0.0771	0.0337	0.0392	0.0401	0.0317	0.0616	0.0648	
Potassium	NS	20	17	19	20	19.8	18	14.5	19.6	18.4	17.5	3.2	2.6	2.9	2.4	2.55	2.52	2.62	2.4	2.78	2.27	2.16	1.99	
Sodium	NS	440	420	510	480	485	468	330	473	453	447	39	27	32	30	51.3	52.1	36.1	37.9	36.2	35.2	42.5	39.5	
Zinc	5	1.6	1.4	1.3	1.3	1.22	1.54	1.68	1.16	1.15	1.05	0.16	0.034	0.074	0.11	0.323	0.319	0.134	0.166	0.139	0.124	0.241	0.238	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	5.9 J	2.9	2.8	47 J	1.32	2.3	3.2 J	3.03	3.14	3.37	0.26 J	0.16 J	0.5 U	0.38 J	0.262	0.256	0.50 U	0.50 U	0.28 J	0.232 J	0.291 J	0.500 U	
Chloride	250	770	790	660	690	828	649	651	804	697	808	81	53	54	61	70.1	70	62.1	64.5	59.1	69.2	87.1	63.9	
Fluoride	2	1.6 J	0.25	1.4	10 U	0.467	1.5	1.3 J	1.28	0.100 U	2.30	0.14	0.083 J	0.14	0.083 J	0.067	0.0727	0.2	0.21	0.16 J	0.200 U	0.100 U	0.500 U	
Sulfate	250	3300	3200	3700	3300	3470	3240	6440 J	2760	3840	3740	45	81	180	190	239	238	194	195	158	119	289	195	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	ND	ND	NA	0.05 U	0.137	0.11 U	0.1 U	0.0600 U	0.0300 U	0.150 UJ	ND	0.0017 J	0.05 U	0.05 U	0.006 U	0.006 U	0.11 U	0.11 U	0.1 U	0.0600 U	0.0300 U	0.150 U	
Nitrogen, Nitrite	1	ND	ND	NA	0.05 UJ	0.003 U	0.010 U	0.005 U	0.0600 U	0.0300 U	0.150 UJ	ND	ND	0.05 U	0.05 UJ	0.006 U	0.006 U	0.010 U	0.010 U	0.005 U	0.0600 U	0.0300 U	0.150 U	
Nitrogen, Nitrate-Nitrite	10	0.25 U	0.025 U	0.025 U	0.042 U	0.137	0.10 U	0.095 U	0.120 U	0.0600 U	0.300 UJ	0.025 U	0.025 U	0.025 U	0.01 J	0.012 U	0.012 U	0.10 U	0.100 U	0.095 U	0.120 U	0.0600 U	0.300 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha ⁽³⁾	15	50.7	6.49 U	21.9 U	35.8	60	33.6	22 U	38.4	19.2	32.3	1.29 U	0.87 U	1.41 U	2.69 U	7.7	4.6	1.55 U	3.63 U	2.25 U	2.5	4.78	4.08	
Gross Beta ⁽⁴⁾	50	28	57.4	39.9	34.1	96.7	37.7	51.8	89.2	36.6	70.9	4.5 U	2.38 J	3.07 J	2.03 J	3.1	3.4	1.55 U	1.43 U	4.78 J	4.8	3.2	7.47	
Radium-226 ⁽⁵⁾	5	1.23	1.21	1.3	1.8	9.5	1.79	0.918 J	7.3	20.2	1.89	0.564 J	0.33 J	0.296 J	0.647 U	0.2	1.8	1.56	1.1	0.773 J	0.9	-0.389 U	0.716	
Radium-228 ⁽⁵⁾	5	10.8	0.676 J	14.1	17.2	15.3	21.8	23.2	16.0	1.17	30.5	0.204 U	0.38 U	-0.00193 U	0.254 U	0.7 U	0.7 U	1.65	1.22 U	0.68 U	0.8 U	0.732	1.25	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	5 U	5 U	5 U	5 U	5 U	5.0 U	4 U	24.6	11.4	26.4	33	5 U	5 U	33	5 U	5 U	40	23	52.5	5.00 U	6.79 J	6.98 J	
Total Dissolved Solids	500	6000	6600	6200	6100	6280	4860	5290	6080	5750	6360	470	320	340	340	739	704	372	373	416	334 J	640	528	
Total Suspended Solids	NS	23	15	11	23	6	121	30.8	12.0 J	10.0 U	31.4	38	29	7	8.1	3.2	4	7.8	6.1	11.8	2.00 U	2.00 U	2.00 J	
Field Parameters																								
pH (S.U.)	6.5-8.5	3.92	3.72	4.08	3.98	NA	NA	3.92	3.96	3.72	3.91	5.8	5.67	6.14	5.4	NA	NA	NA	NA	5.88	5.35	4.80	4.94	
Specific Conductivity (mS/cm)	NS	6.13	6.3	5.78	6.4	NA	NA	6.12	5.6	6.01	6.01	0.577	0.55	0.562	0.531	NA	NA	NA	NA	0.672	0.316	0.613	0.576	
Temperature (°c)	NS	14.83	15.99	17.99	14.84	NA	NA	15.02	17.12	17.13	18.09	17.85	16.3	16.35	15.66	NA	NA	NA	NA	14.50	14.24	13.82	13.53	
Turbidity (NTU)	NS	5.3	9.92	11.7	17.9	NA	NA	15	55.5	0.0	91	3.61	1.53	7.31	1.15	NA	NA	NA	NA	24.2	0.00	0.1	0.00	
Dissolved Oxygen (mg/L)	NS	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	NA	NA	NA	NA	0.00	0.00	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	219	175	183	226	NA	NA	196	218	263	248	46	-54	-30	54	NA	NA	NA	NA	-101	29	144	101	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through October 2021
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-27													CSW-28												
Sample Number:	SMCL	CSW-27-20170714	DUP-04-20170714	CSW-27-20171011	CSW-27-20180427	CSW-27-20181029	CSW-27	CSW-27	CSW-27_051520	CSW-27	DUP-1	CSW-27	CSW-27	CSW-28-20170714	CSW-28-20171011	CSW-28-20180427	CSW-28-20181026	CWS-28	CSW-28	CSW-28_051520	CWS-28	CSW-28	CSW-28	CSW-28			
Date Sampled:	⁽¹⁾	7/14/2017	7/14/2017	10/11/2017	4/27/2018	10/29/2018	7/11/2019	11/20/2019	5/15/2020	09/21/2020	9/21/2020	4/26/2021	9/22/2021	7/14/2017	10/11/2017	4/27/2018	10/26/2018	7/16/2019	11/20/2019	5/15/2020	09/21/2020	4/26/2021	9/28/2021				
Duplicate of:			CSW-27-20170714								CSW-27																
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			
Aluminum	0.05	0.21	0.23	0.16	0.34	0.32	1.78	1.27	1.54	0.590	0.608	1.64	0.764	3.5	13	15	13	16.7	7.87	14.6	16.8	25.2	21.3				
Arsenic	0.01	0.0017 J	0.003 U	0.004	0.0045	0.0046	0.0026	0.0042	0.0045	0.0010 J	0.0010 U	0.0050	0.0014 J	0.0081	0.016	0.012	0.0019 J	0.0204	0.0154 J	0.0010 U	0.0067	0.0010 U					
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.00017 J	0.0004 U	0.002 U	0.00018 J	0.00054 J	0.0004 J	0.0004 J	0.0011 J	0.0020 U	0.0031	0.0094	0.0062	0.007	0.0046 J	0.0047	0.0064	0.0063	0.0050	0.0064 J				
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.00026 J	0.0012 J	0.00075 J	0.00045 J	0.0004 U	0.0004 U	0.0034	0.0020 U	0.0023	0.04	0.0004 U	0.0021	0.0004 U	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0020 U				
Calcium	NS	150 J	150 J	160 J	140	130	114	104	101	90.4	89.6	81.9	92.4	230 J	260 J	190	210	224	236	236	230	222	234				
Iron	0.3	330 J	360 J	380	320	290	247	230	219	186	181	124	200	470 J	540	390	400	398	418	376	406	385	392				
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0005 J	0.0017 J	0.0011 J	0.0004 U	0.0004 U	0.0004 U	0.0020 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.00087 J	0.00046 J	0.0004 U	0.0004 U	0.0020 U				
Magnesium	NS	140 J	150 J	150	140	130	117	102	92.5	91.2	90.3	79.8	95.8	220 J	270	200	230	234	222	216	227	223	216				
Manganese	0.05	88 J	91 J	92 J	86	82 J	75.7	65.8	62.8	60.0	58.3	50.6	57.6	150 J	200 J	150	150	192	173	166	183	172	167				
Nickel ⁽²⁾	0.073	0.055 J	0.06 J	0.059	0.058 J	0.069	0.0862	0.0509	0.0824	0.0858	0.0859	0.239	0.107	0.55 J	0.84	0.69 J	0.69	0.755	0.632	0.717	0.783	0.630	0.744				
Potassium	NS	19	21	21	19 J	19 J	16.5	15.4	15.2	13.8	13.8	11.8	13.8	27	26	18 J	24	25.5	25.6	26.8	22.6	19.9	19.3				
Sodium	NS	260 J	290 J	300	280	250	240	221	184	183	177	132	221	360 J	420	330	380	443	427	411	461	442	429				
Zinc	5	0.033 J	0.037 J	0.036	0.064 J	0.11	0.212	0.079	0.233	0.142	0.142	0.306	0.282	0.96 J	1.5	1.2 J	1	1.32	0.692	1.78	1.09	1.38	1.15				
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			
Bromide	NS	10 U	10 U	2.7	2.6	2 J	1.9	2	2.2	2.06	2.01	1.42	2.06	5 U	2.5	2.6	4.6 J	2.44	1.9	2.9	114	3.00	3.21				
Chloride	250	490	500	450	420	380 J	325	336	320	304	305	214	327	720	680	590	700 J	660	702	639	112	372 J	827				
Fluoride	2	2 U	2 U	0.06 UJ	0.2 U	0.2 UJ	0.0577	0.37	0.18 J	0.200 U	0.200 U	0.260	0.200 U	0.88 J	0.51 J	1	1.2 J	0.306	1.1	0.79	114	0.753	1.19				
Sulfate	250	1700	1700	1400	1700	1600 J	1420	1530	1860	943	950	930	1170	2900	2600	2800	2700 J	2410	3300	4650	113	1200 J	2920				
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			
Nitrogen, Nitrate	10	ND	ND	0.0032 J	NA	0.05 U	0.281	0.11 U	0.1 U	0.0600 U	0.0986 J	0.0300 U	0.0600 U	ND	0.0025 J	NA	0.1 U	0.144	0.11 U	0.1 U	25.3	0.0300 U	0.150 U				
Nitrogen, Nitrite	1	ND	ND	ND	NA	0.05 U	0.006 U	0.0099 J	0.005 U	0.0600 U	0.0600 U	0.0300 U	0.0600 U	ND	ND	NA	0.1 U	0.006 U	0.0096 J	0.005 U	3.67	0.0300 U	0.150 U				
Nitrogen, Nitrate-Nitrite	10	0.25 U	0.25 U	0.025 U	0.025 UJ	0.066	0.281	0.10 U	0.095 U	0.120 U	0.120 U	0.0600 U	0.120 U	0.25 U	0.025 U	1.8 J	0.023 J	0.144	0.1 U	0.095 U	29.0	0.0600 U	0.300 U				
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L			
Gross Alpha ⁽³⁾	15	17.8 U	11.7 U	10.4 U	6.63 U	4.51 U	4.3 U	2.59 U	2.08 U	6.5	5.6	0.326 U	2.65 J	14.4 U	7.93 U	22.2 U	3.09 U	13.7	5.17 U	13.4 U	20.1	-9.94 U	7.48 J				
Gross Beta ⁽⁴⁾	50	22.5 J	14.9 J	17.2	17.1	7.8 U	24.4	18.7	12.4	29.4	22.5	5.94	17.5	24.1	18.6	18.8	571	34	26.1	18.7	51.6	-3.31 U	15.7 J				
Radium-226 ⁽⁵⁾	5	0.359 J	0.352 J	0.27 U	0.22	0.133 U	1.1	0.605	0.799 J	1.4	1.5	2.64	0.19 J	0.798 J	0.814 J	1.4	2	4.4	0.635	1.06	4.0	4.86	1.80				
Radium-228 ⁽⁵⁾	5	1.16	1.34	2.15	1.15	0.484 U	2.9	2.55	1.65 J	1.7	2.1	0.13 J	4.15	1.53	2.36	3.57	4.19	4.6	3.73	4.74	4.0	1.56	5.34				
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L			
Total Alkalinity	NS	91	93	67	59	47	109	101	80.5	80.8	84.3	33.4	72.1	28	9.1	5 U	10	5 U	36	21	12.8	5.00 U	13.1				
Total Dissolved Solids	500	3500	3600	3300	2900	2600	2790	2130	2460	2100	2160	2010	2460	5000	5500	5100	5400	5470	4750	4000	5460	5620	5570				
Total Suspended Solids	NS	82	140	100	46	51	34	31.2	28.5	18.0	18.0	16.0	8.00 J	130	200	36	66	11.6	78	50	42.0	42.0	44.0				
Field Parameters																											
pH (S.U.)	6.5-8.5	6.05	NA	5.64	5.35	5.47	NA	NA	4.85	5.26	NA	4.88	5.15	6.08	5.59	4.98	5.2	NA	NA	5.10	4.9	4.61	4.83				
Specific Conductivity (mS/cm)	NS	3.67	NA	4	3.46	3.45	NA	NA	3.21	2.26	NA	2.11	2.76	4.8	5.6	5.33	5.76	NA	NA	5.70	5.43	5.74	6.16				
Temperature (°c)	NS	23.62	NA	18.24	15.79	16.84	NA	NA	18.45	14.86	NA	14.91	16.19	23.99	18.59	13.37	13.57	NA	NA	15.15	15.1	14.40	14.83				
Turbidity (NTU)	NS	18	NA	10.2	9.12	19	NA	NA	39.1	0.00	NA	4.40	2.4	59.6	75.6	8.83	44.5	NA	NA	22.1	40.4	46.1	30.1				
Dissolved Oxygen (mg/L)	NS	0.00	NA	0.00	0.94	0.00	NA	NA	0.00	0.00	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00				
Oxidation-Reduction Potential (mV)	NS	10	NA	-30	-19	68	NA	NA	80	53	NA	117	118	-62	-30	45	44	NA	NA	66	83	149	119				

Table 4
Data Summary of Analytical Results
Comparison July 2017 through October 2021
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-29														
Sample Number:	SMCL	CSW-29-20170627	CSW-29-20171003	DUP-01-20171003	CSW-29-20180426	DUP-01-20180426	CSW-29-20181017		CSW-29	CSW-29	CSW-29_051320	CSW-29	CSW-29	CSW-29	DUP-1-CSW-29	
Date Sampled:	⁽¹⁾	6/27/2017	10/3/2017	10/3/2017	4/26/2018	4/26/2018	10/17/2018		7/10/2019	11/18/2019	5/13/2020	09/24/2020	4/28/2021	9/21/2021	9/21/2021	
Duplicate of:				CSW-29-20171003		CSW-29-20180426										
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Aluminum	0.05	0.05 U	0.043 J	0.042 J	0.05 U	0.02 J	0.022 J	0.0192 J	0.0848	0.0446 J	0.112	0.0215 J	0.226	0.220		
Arsenic	0.01	0.0038	0.0034	0.0035	0.0079	0.0081	0.0081	0.0111	0.0107	0.0092	0.0090	0.0112	0.0100	0.0096		
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.010 U	0.0005 U	0.0004 U	0.0004 U	0.0020 U	0.0020 U	
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	0.0020 U	
Calcium	NS	53 J	54	54	55	56	59	68.3	61.7	76.1	73.2	68.7	63.6	63.6		
Iron	0.3	47 J	51	54	61	62	68	91.4	80.8	88.7	92.0	92.9	84.0	84.1		
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.00067 J	0.00022 U	0.0004 U	0.0004 U	0.0020 U	0.0020 U		
Magnesium	NS	34 J	35	33	36	37	41	52.2	46.2	48.9	56.2	55.4	50.3	50.7		
Manganese	0.05	31 J	33	33	33	32	37	45.3	33.4	32.5	46.3	40.1	35.7	35.7		
Nickel ⁽²⁾	0.073	0.018	0.016	0.016	0.02	0.021	0.022	0.0244	0.0185	0.0166	0.0193	0.0164	0.0181	0.0178		
Potassium	NS	11	10	9.8	11	11	11	12.5	11.5	12.6	13.3	11.8	10.9	10.8		
Sodium	NS	25 J	28	28	31	32	37	64.6	55.4	55.9	66.3	64.9	63.8	63.2		
Zinc	5	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.0156	0.10 U	0.017 J	0.0144	0.0124 J	0.0959 J	0.0205 J		
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Bromide	NS	0.41 J	0.4	0.39	0.51	0.75 J	2.3 J	0.31	0.42 J	0.62	0.599 J	0.684	0.630	0.688		
Chloride	250	13	15	15	16	17	21	19.1	32.2	28.9	27.7	37.5	35.0	35.9		
Fluoride	2	0.049 J	0.059 J	0.058 J	0.081 J	0.32 J	1 U	0.01	0.23	0.34	0.200 U	0.100 U	0.200 U	0.200 U		
Sulfate	250	220	250	250	250	250	300	363	359	357	421	489	446	454		
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	0.0016 J	0.0019 J	NA	NA	0.05 UJ	0.0747	0.12	0.39	0.0600 U	0.0300 U	0.0600 U	0.0600 U		
Nitrogen, Nitrite	1	ND	ND	ND	NA	NA	0.12	0.003 U	0.010 U	0.005 U	0.0600 U	0.0300 U	0.0600 U	0.0600 U		
Nitrogen, Nitrate-Nitrite	10	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.092	0.0747	0.12	0.39	0.120 U	0.0600 U	0.120 U	0.120 U		
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha ⁽³⁾	15	-0.0549 U	-1.3 U	1.4 U	0.536 U	2.82 U	0.154 U	8.4	0.474	2.31 U	2.1 U	-0.772 U	0.262 U	2.21 J		
Gross Beta ⁽⁴⁾	50	8.65	8.99	6.9	10.2	9.14	5.62	9.3	14.4	18.5	17.1	11	12.3	13.8		
Radium-226 ⁽⁵⁾	5	0.309 J	0.259 J	0.173 J	0.223 U	0.279 U	0.42 U	0.8	0.425 U	0.298 U	0.5 U	0.00434 U	0.401	0.812		
Radium-228 ⁽⁵⁾	5	0.405 J	0.249 U	0.617 J	0.235 U	0.43 J	0.361 U	0.7 U	0.294 U	1.12 U	0.8 U	0.627	0.731	3.28 J		
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	160	130	150	150	150	210	207	140	203	133	176	151	150		
Total Dissolved Solids	500	530	610	600	560	450	670	896	690	695	800	955	969	946		
Total Suspended Solids	NS	26	59	58	67	80	43	104	50.8	41	72.0	115	27.0	58.0		
Field Parameters																
pH (S.U.)	6.5-8.5	6.45	6.32	NA	6.52	NA	6.23	NA	NA	6.18	6.39	6.09	6.14			
Specific Conductivity (mS/cm)	NS	0.751	0.948	NA	0.988	NA	1.15	NA	NA	0.984	0.77	1.260	1.170			
Temperature (°C)	NS	16.24	17.87	NA	16.63	NA	17.33	NA	NA	21.90	14.99	17.17	15.02			
Turbidity (NTU)	NS	5.26	4.13	NA	6.64	NA	5.17	NA	NA	18.1	3.4	1.4	0.3			
Dissolved Oxygen (mg/L)	NS	0.00	0.62	NA	2.53	NA	0.00	NA	NA	0.00	0.00	0.00	0.00			
Oxidation-Reduction Potential (mV)	NS	-32	-63	NA	-144	NA	-53	NA	NA	-88	-95	-17	-55			

Table 4
Data Summary of Analytical Results
Comparison July 2017 through October 2021
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-31											
Sample Number:	SMCL	CSW-31-20170707	CSW-31-20171010	CSW-31-20180501	CSW-31-20181016	DUP-01-20181016	CSW-31	CSW-31	CSW-31_052020	CSW-31	CSW-31	CSW-31	CSW-31
Date Sampled:	⁽¹⁾	7/7/2017	10/10/2017	5/1/2018	10/16/2018	10/16/2018	7/11/2019	11/25/2019	5/20/2020	09/21/2020	4/21/2021	9/28/2021	
Duplicate of:						CSW-31-20181016							
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	1.6	0.7	0.13	0.089 J	0.091 J	0.0921	0.050 U	0.0808	0.0421	0.0102 J	0.0567 J	
Arsenic	0.01	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.001 U	0.0020 U	0.0003 J	0.0010 U	0.0010 U	0.0010 U	
Beryllium	0.004	0.0005	0.00056	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.0010 U	0.000091 J	0.0004 U	0.0004 U	0.0020 U	
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	
Calcium	NS	21	26	110	53	55	28.1	32.7	29	16.4	12.9	19.0	
Iron	0.3	27	22	1.8	2.2	2.3	38.4	5.19	20.6	23.0	19.2	23.2	
Lead	0.015	0.0025 U	0.0011 J	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0020 U	0.002 U	0.0004 U	0.0005 J	0.0020 U	
Magnesium	NS	3.2	2.6	0.46	0.33	0.33	4.32	1.3	1.82	2.15	1.91	1.79	
Manganese	0.05	0.36 U	0.24	0.038	0.03	0.029	0.394	0.0777	0.253	0.209	0.156	0.192	
Nickel ⁽²⁾	0.073	0.005 U	0.0026 J	0.015	0.0082	0.0086	0.0056 J	0.0036 J	0.0036 U	0.0015 J	0.0019 J	0.0024 J	
Potassium	NS	19	23	15	6.7	6.8	3.17	3.81	2.76	2.09	1.90	1.66	
Sodium	NS	15	15	30	19	19	8.99	13.5	9.96	6.44	5.31	5.22	
Zinc	5	0.29	0.57	0.072	0.016 J	0.017 J	0.0378	0.0091 J	0.0402 U	0.0375	0.0077	0.0162	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	0.5 U	0.1 U	0.66	0.49 U	0.49 U	0.082	0.20 J	0.2 J	0.200 U	0.100 U	0.500 U	
Chloride	250	5.4	6.5	44	44	44	14.5	31.6	18.2	7.93	1.00 U	5.53 J	
Fluoride	2	0.14	0.067 J	0.12 J	0.059 J	0.057 J	0.0279	0.11 J	0.086 J	0.200 U	0.100 U	0.500 U	
Sulfate	250	2.2	2.3	6.3 J	2.2	2.1	2.74	2.6	2.1	3.67 J	3.57	5.00 U	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	ND	ND	0.05 U	0.05 U	0.05 U	0.0499	0.11 U	0.11 U	0.0600 U	0.0300 U	0.150 U	
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 U	0.05 U	0.006 U	0.092	0.11	0.0600 U	0.0300 U	0.150 U	
Nitrogen, Nitrate-Nitrite	10	0.011 J	0.025 U	0.025 U	0.025 U	0.025 U	0.0499	0.15	0.095 U	0.120 U	0.0600 U	0.300 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha ⁽³⁾	15	1.6 J	6.98	0.47 U	2.35 J	0.0253 U	3.6	1.77 U	0.869 U	1.9	1.25 J	1.89	
Gross Beta ⁽⁴⁾	50	16.1	20.7	10.3	4.63	5.71	8.4	5.6	5.47	4.3	1.11 J	3.20	
Radium-226 ⁽⁵⁾	5	0.97 J	1.67	0.391 J	0.358 U	0.645 U	2	0.538	0.998 J	1.0	0.731	0.347 J	
Radium-228 ⁽⁵⁾	5	0.893 J	0.9 J	0.452 J	0.451 U	0.523 J	1.3	1.26 U	1.99 J	1.0 U	0.758	2.28 J	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	99	110	240	110	100	80.9	70	64.5	57.0	60.8	66.4	
Total Dissolved Solids	500	110	140	4000	150	150	132	150	105	98.0	120	120	
Total Suspended Solids	NS	66	80	21	15	17	80	12.4	35	46.0	20.0	26.0	
Field Parameters													
pH (S.U.)	6.5-8.5	8.74	8.02	12.51	11.6	NA	NA	NA	6.94	6.57	6.35	6.61	
Specific Conductivity (mS/cm)	NS	0.255	0.264	1.63	0.687	NA	NA	NA	0.241	0.132	0.162	0.201	
Temperature (°c)	NS	19.13	17.95	16.55	15.28	NA	NA	NA	13.41	14.3	14.23	13.82	
Turbidity (NTU)	NS	105	165	6.81	4.29	NA	NA	NA	40	11.8	3	5.2	
Dissolved Oxygen (mg/L)	NS	0.00	0.36	0.00	0.00	NA	NA	NA	0.00	0.00	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	-242	-373	-317	-298	NA	NA	NA	-146	-85	-6	-118	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through October 2021
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-32											
Sample Number:	SMCL	CSW-32-20170629	CSW-32-20171005	SW-32-20180503	CSW-32-20181023	CSW-32	CSW-32	CSW-32_052120	CSW-32	CSW-32	CSW-32	CSW-32	CSW-32
Date Sampled:	⁽¹⁾	6/29/2017	10/5/2017	5/3/2018	10/23/2018	7/9/2019	11/26/2019	5/21/2020	09/17/2020	4/22/2021	9/22/2021		
Duplicate of:													
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	0.05 U	0.024 J	0.05 U	0.023 J	0.0075 J	0.25 U	0.13 U	0.0167 J	0.0240 J		0.0400 U	
Arsenic	0.01	0.0021 J	0.0019 J	0.0018 J	0.0065	0.0979	0.0119	0.0117	0.0158	0.0122	0.0022		
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0002 U	0.0050 U	0.0025 U	0.0004 U	0.0004 U	0.0020 U		
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.015 U	0.01 U	0.0004 U	0.0004 U	0.0020 U		
Calcium	NS	150 J	130	150	140	137	126	145	150	145	156		
Iron	0.3	470 J	560	670	520	487	315	520	596	573	581		
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.00093 J	0.005 U	0.0004 U	0.0004 U	0.0020 U		
Magnesium	NS	77 J	71	80	72	82.6	67.7	89.5	84.7	80.7	82.6		
Manganese	0.05	15 J	10	9	12	18.3	24.6	14.3	11.1	11.1	10.5		
Nickel ⁽²⁾	0.073	0.045	0.022	0.0072	0.026	0.0694	0.102	0.0532	0.0225	0.0327	0.0223		
Potassium	NS	8.6 J	6	6.1	6	7.69	8.59	6.73	6.25	5.81	5.79		
Sodium	NS	130 J	130	160	120	147	105	135	159	144	152		
Zinc	5	0.023	0.02 U	0.02 U	0.027 U	0.0792	0.101	0.0415 U	0.0183	0.0263	0.0779 J		
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	0.96	1	2.1 J	5 U	0.936	0.31 J	0.82	1.23	1.20	1.10		
Chloride	250	230	270	280	250	252	227	212	287	290	252		
Fluoride	2	2.6 J	0.06 U	0.5 U	1 U	0.02	0.062 J	0.073 J	0.200 U	0.100 U	0.200 U		
Sulfate	250	1800	1600	2400	2100	1870	1680	1760	1410	2110	2090		
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	ND	ND	0.05 U	0.05 U	0.103	0.31	0.1 U	0.0600 U	0.0495 J	0.0600 U		
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 U	0.00614 J	0.010 U	0.0032 J	0.0600 U	0.0300 U	0.0600 U		
Nitrogen, Nitrate-Nitrite	10	0.13 U	0.025 U	0.025 UJ	0.091 UJ	0.109	0.31	0.091 J	0.120 U	0.0600 U	0.120 U		
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha ⁽³⁾	15	5.75 U	0.96 U	-7.08 U	9.11 U	21.3	-1.75 U	-4.28 U	4.5 U	-1.25 U	-0.736 U		
Gross Beta ⁽⁴⁾	50	5.85 U	4.47 U	8.41 U	7.58 U	9.3	3.8 U	8.34	12.2	-5.65 U	0.753 U		
Radium-226 ⁽⁵⁾	5	0.22 J	0.235 J	0.326 J	0.47 U	0.4	0.513	0.466 J	0.6	0.499	0.404		
Radium-228 ⁽⁵⁾	5	0.645 J	0.286 U	1.02	0.431 U	1.0	0.306 U	0.641 U	0.9 U	-0.728 U	0.931		
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	5 U	5 U	5 U	5 U	5 U	5.0 U	36	66.1	24.9	5.00 U		
Total Dissolved Solids	500	2500	3100	2900	3100	2830	2940	2320	3260 J	3160	3280		
Total Suspended Solids	NS	180	130	160	88	240	52	64.4	263	91.0	140		
Field Parameters													
pH (S.U.)	6.5-8.5	6.16	5.89	5.72	5.79	NA	NA	5.61	5.76	6.14	5.77		
Specific Conductivity (mS/cm)	NS	2.67	3.48	3.14	3.1	NA	NA	2.97	3	3.16	3.31		
Temperature (°c)	NS	17.2	16.81	16.01	17.7	NA	NA	15.58	14.38	13.74	13.66		
Turbidity (NTU)	NS	19	12.2	14.9	30	NA	NA	35.1	35.2	388.0	130		
Dissolved Oxygen (mg/L)	NS	0.00	0.40	0.52	0.00	NA	NA	0.00	0.00	0.00	0.00		
Oxidation-Reduction Potential (mV)	NS	-51	-76	-144	-12	NA	NA	-22	-53	-47	8		

Table 4
Data Summary of Analytical Results
Comparison July 2017 through October 2021
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-33													
Sample Number:	SMCL	CSW-33-20170629	DUP-01-20170629	CSW-33-20171005	CSW-33-20180503	CSW-33-20181023	DUP-03-20181023	CSW-33	CSW-33	CSW-33_052120	DUP_052120	CSW-33	CSW-33	CSW-33	
Date Sampled:	⁽¹⁾	6/29/2017	6/29/2017	10/5/2017	5/3/2018	10/23/2018	10/23/2018	7/9/2019	11/26/2019	5/21/2020	5/21/2020	09/17/2020	4/22/2021	9/28/2021	
Duplicate of:			CSW-33-20170629				CSW-33-20181023				CSW-33				
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Aluminum	0.05	1 J	0.05 U	1.6	0.74	0.64 J	0.94 J	1.06	0.115	0.0539	0.0512	0.0459	0.151	0.0466 J	
Arsenic	0.01	0.0016 J	0.0023 J	0.003 U	0.003 U	0.003 U	0.003 U	0.001 U	0.0020 U	0.00034 J	0.00026 J	0.0010 U	0.0010 U	0.0010 U	
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.0010 U	0.005 U	0.005 U	0.0004 U	0.0004 U	0.0020 U	
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.002 U	0.0004 U	0.002 U	0.0004 U	0.0004 U	0.0020 U	
Calcium	NS	270 J	150 J	250	180	110	110	41.6	37.3	39.4	35.8	31.6	23.5	30.9	
Iron	0.3	0.52 J	480 J	0.2	2.2	1.8	1.9	3.45	2.26	2.37	1.94	4.44	4.99	3.93	
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0005 J	0.0020 U	0.001 U	0.00019 U	0.0004 U	0.0004 U	0.0020 U	
Magnesium	NS	0.34 J	83 J	0.23 J	3.6	3.3	2.9	2.98	1.93	2.08	1.92	2.42	2.44	2.16	
Manganese	0.05	0.011 J	16 J	0.0041 J	0.57	0.48	0.39	0.205	0.0721	0.122	0.0966 J	0.106	0.0873	0.103	
Nickel ⁽²⁾	0.073	0.013 J	0.05 J	0.012	0.0074	0.005	0.0048 J	0.0025 J	0.0059	0.0016 U	0.0017 U	0.0015 J	0.0146	0.0024 J	
Potassium	NS	42 J	9.2 J	22	21	14	14	5.69	6.09	6.75	7.92 J	4.25	3.28	4.08	
Sodium	NS	44 J	140 J	36	30	22	20	12	14	14.2	15.2	11.1	8.82	10.8	
Zinc	5	0.058 J	0.025 J	0.017 J	0.017 J	0.017 J	0.01 U	0.007 J	0.020 U	0.015 U	0.015 U	0.0057	0.0079	0.0133	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Bromide	NS	0.34 J	1.4 J	0.54	0.45 J	0.3 J	0.18 U	0.0461 J	0.50 U	0.17 J	0.18 J	0.200 U	0.100 U	0.500 U	
Chloride	250	29 J	230 J	44	24	21	20	7.11	9.6	9.3	10.3	6.75	5.52	7.13 J	
Fluoride	2	0.17 J	5 U	0.14	0.12	0.089 J	0.095 J	0.0468	0.093 J	0.091 J	0.092 J	0.200 U	0.100 U	0.500 U	
Sulfate	250	5.7 J	1900 J	5.3	9.1	21	20	15	22.2	19.1	20.9	17.3	14.5	15.6	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	ND	0.0020 J	0.05 U	0.05 U	0.05 U	0.006 U	0.11 U	0.1 U	0.1 U	0.0600 U	0.0300 U	0.150 U	
Nitrogen, Nitrite	1	ND	ND	ND	0.05 U	0.05 U	0.05 U	0.006 U	0.010 U	0.0067 J	0.0087 J	0.0600 U	0.0300 U	0.150 U	
Nitrogen, Nitrate-Nitrite	10	0.025 U	0.13 U	0.029 J	0.025 UJ	0.025 UJ	0.025 UJ	0.012 U	0.10 U	0.095 U	0.095 U	0.120 U	0.0600 U	0.300 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha ⁽³⁾	15	4.32 U	9.73 U	1.17 U	-0.807 U	4.58	0.459 U	2.4	0.0259 U	2.36 U	0.386 U	2.0	1.22 U	2.09	
Gross Beta ⁽⁴⁾	50	28.5 J	8.68 U	18.2	49.3	10	7.93	8.1	6.72	9.96	4.73 J	6.9	4.28	5.90	
Radium-226 ⁽⁵⁾	5	0.518 J	0.278 J	0.411 J	0.484 J	0.752 U	0.695 U	0.5	0.9	0.315 J	0.684 J	1.0	0.899	0.820	
Radium-228 ⁽⁵⁾	5	0.279 U	0.662 J	0.107 U	0.331 U	0.301 U	0.235 U	1.2	1.3 U	0.447 U	0.122 U	0.8 U	0.369 J	1.39	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	710 J	5 U	620	380	220	220	96.8	55	70.5 J	51.5 J	95.4	79.0	93.1	
Total Dissolved Solids	500	830 J	2600 J	820	470	300	300	147	126	100	74	160 J	109	154	
Total Suspended Solids	NS	8.9	200	7.1	62	83	98	38.6	55.5	45.4 J	66.8 J	4.00 J	11.0	11.5	
Field Parameters															
pH (S.U.)	6.5-8.5	13.89	NA	12.85	12.29	12.12	NA	NA	NA	10.90	NA	7.47	6.65	7.78	
Specific Conductivity (mS/cm)	NS	3.41	NA	3.1	2.27	1.53	NA	NA	NA	0.270	NA	0.161	0.181	0.218	
Temperature (°C)	NS	16.33	NA	17.47	15.91	13.51	NA	NA	NA	14.63	NA	14.27	14.01	14.42	
Turbidity (NTU)	NS	5.8	NA	6.85	8.44	19	NA	NA	NA	28.0	NA	3.2	6.6	8.1	
Dissolved Oxygen (mg/L)	NS	0.00	NA	0.00	0.00	0.00	NA	NA	NA	0.00	NA	0.00	0.00	0.00	
Oxidation-Reduction Potential (mV)	NS	-194	NA	-352	-266	-217	NA	NA	NA	-154	NA	-220	-63	-266	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through October 2021
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-34											CSW-35											
Sample Number:	SMCL	CSW-34-20170714	CSW-34-20171011	CSW-34-20180427	CSW-34-20181025	CSW-34	CSW-34	CSW-34_051520	CSW-34	CSW-34	CSW-34	CSW-34	CSW-35-20170713	CSW-35-20171013	CSW-35-20180426	CSW-35-20181026	CSW-35	CSW-35	CSW-35_051420	DUP_051420	CSW-35	CSW-35	CSW-35	
Date Sampled:	⁽¹⁾	7/14/2017	10/11/2017	4/27/2018	10/25/2018	7/16/2019	11/20/2019	5/15/2020	09/21/2020	4/26/2021	9/28/2021		7/13/2017	10/13/2017	4/26/2018	10/26/2018	7/16/2019	11/19/2019	5/14/2020	5/14/2020	09/24/2020	4/26/2021	9/29/2021	
Duplicate of:																			CSW-35					
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Aluminum	0.05	0.63	0.56	0.6	0.51	0.337	0.5	0.446	0.269	0.561	0.184	0.22	0.93	0.13	0.16	0.0292	0.436	0.182	0.195	0.103	0.0951	0.570		
Arsenic	0.01	0.0016	J	0.0024	J	0.0016	J	0.003	U	0.001	U	0.0011	J	0.00097	J	0.0010	U	0.0010	U	0.0010	J	0.0010	U	
Beryllium	0.004	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.002	U	0.0010	U	0.0005	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	
Cadmium	0.005	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0030	U	0.002	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	
Calcium	NS	200	J	320	J	350		310	255	215	265	316	42.5	242	150	J	190	J	390	390	417	306	371	
Iron	0.3	1.6	J	0.29	0.2	0.35	0.182	0.403	0.140	2.21	0.138	2	0.41	J	0.21	0.19	0.0749	0.217	J	0.0896	0.0846	0.0400	U	
Lead	0.015	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0004	U	0.0016	J	0.00075	J	0.0004	U	0.0004	U	0.0025	U	0.0025	U	
Magnesium	NS	0.77	J	0.097	J	0.09	J	0.18	J	0.0674	0.186	J	0.186	J	0.102	0.508	0.0971	0.6	0.046	J	0.031	J	0.032	
Manganese	0.05	0.038	J	0.0052	J	0.0021	U	0.0076	0.0104	0.0135	0.0186	0.0196	J	0.0678	0.0103	J	0.061	J	0.0046	J	0.005	U	0.0024	
Nickel ⁽²⁾	0.073	0.012	J	0.019	0.02	J	0.019	0.0312	0.0175	0.017	0.0303	0.0040	0.0205	0.0052	0.011	0.019	0.024	0.0417	0.0255	0.0152	0.0141	0.0324	0.0289	
Potassium	NS	200		130	120	J	87	68.9	40	45.6	43.8	14.7	25.9	450	340	330	210	161	95.6	92.9	89.1	79.2	61.8	
Sodium	NS	100	J	100	100		85	80.8	54.5	69.6	73.4	21.1	52.5	200	J	160	J	210	160	153	96.6	101	106	
Zinc	5	0.02	U	0.02	U	0.02	U	0.013	J	0.0102	0.020	U	0.0049	J	0.0172	0.0023	0.0254	0.02	U	0.02	U	0.0054	J	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Bromide	NS	0.5	U	0.53	1	0.79	J	1.12	1.1	1.6	1.74	0.233	J	1.64	0.31	J	0.25	0.233	0.57	5	U	0.769	0.56	
Chloride	250	9.6		21	39	56	J	98.5	79.9	93.4	160	20.0	167	11	9.9	23	35	J	60.4	56.9	72.2	72	89.0	
Fluoride	2	0.1		0.11	J	0.1	U	0.1	U	0.784	1.1	0.09	J	0.200	U	0.121	0.500	U	0.1	U	0.18	0.1	U	
Sulfate	250	16		19	28	26	J	34.7	2.0	U	28.5	45.8	13.4	45.5	39	J	31	13.4	45.5	64	47	J	64.5	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	0.0070	NA	0.05	0.0118	J	0.11	U	0.1	U	0.0600	U	0.0300	U	0.150	U	0.0086	J	0.0070	NA	0.05	U	
Nitrogen, Nitrite	1	ND	ND	NA	0.15	0.0968		0.019	0.0044	J	0.0600	U	0.0300	U	0.150	U	0.01	J	0.0033	J	NA	0.05	U	
Nitrogen, Nitrate-Nitrite	10	0.039	J	0.038	J	0.096	J	0.12	U	0.109	0.10	U	0.095	U	0.120	U	0.0600	U	0.300	U	0.03	J	0.036	J
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha ⁽³⁾	15	3.3	U	5.58	U	11.4	U	5.63	U	3.1	U	3.97	1.65	U	2.6	U	-0.0798	U	1.81	J	15.3	3.91	U	
Gross Beta ⁽⁴⁾	50	163	83.1	95.4	71.5	69.4	35.4	28.1	52.7	11.2	20.9	354	260	252	136	188	77.3	82.1	J	26.2	J	123	37.7	
Radium-226 ⁽⁵⁾	5	0.923	J	1.04	1.07	0.0567	U	1.8	1.37	1.18	1.1	-0.43	U	0.693	1.87	1.57	1.73	1.17	1.9	1.01	1.78	0.846	J	
Radium-228 ⁽⁵⁾	5	0.942	J	1.37	0.776	J	1.31	1.1	1.21	U	2.53	U	1.3	0.182	1.96	1.56	U	2.21	1.1	1.19	1	0.834	U	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	950	880	990	990	813	582	520	750	31.6	75.6	1300	1100	1600	1500	J	1510	970	1160	1050	1100	1050	909	
Total Dissolved Solids	500	1200	1500	1500	1200	1120	660	754	1090	5580	1050	2100	1800	1700	1800	1910	1210	1310	1260	1390	1450	979		
Total Suspended Solids	NS	60	13	5.7	7.3	28	14.3	9.4	3.00	J	87.0	0.400	J	16	24	3.1	7.9	0.8	U	3.8	J	4.6	4.7	
Field Parameters																								
pH (S.U.)	6.5-8.5	12.31	12.37	13.21	12.66	NA	NA	12.95	12.61	11.00	12.5	12.45	12.5	12.56	12.76	NA	NA	13.15	NA	12.82	13.1	12.61		
Specific Conductivity (mS/cm)	NS	4.2	5.56	6.27	5.05	NA	NA	4.300	3.62	0.348	3.03	6.52	5.83	7.12	6.83	NA	NA	6.08	NA	5.07	5.47	3.58		
Temperature (°C)	NS	20.71	15.59	14.78	14.37	NA	NA	14.72	15.11	14.94	14.8	21.17	15.19	15	14.47	NA	NA	16.21	NA	16.13	17.66	14.44		
Turbidity (NTU)	NS	19.4	11	5.24	10.9	NA	NA	14	0.00	14	0.00	5.16	13.3	0.11	5.16	NA	NA	5.5	NA	3	3.3	9.4		
Dissolved Oxygen (mg/L)	NS	0.18	1.29	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.48	1.05	0.56	0.00	NA	NA	0.00	NA	0.00	0.00	0.00		
Oxidation-Reduction Potential (mV)	NS	-209	-433	-425	-258	NA	NA	-216	-408	-254	-420	-231	-582	-306	-301	NA	NA	-243	NA	-365	-426	-307		

Table 4
Data Summary of Analytical Results
Comparison July 2017 through October 2021
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-36											CSW-37										
Sample Number:	SMCL	CSW-36-20170717	CSW-36-20171004	CSW-36-20180503	CSW-36-20181025	CSW-36	CSW-36	CSW-36_052220	CSW-36	CSW-36	CSW-36	CSW-36	CSW-37-20170629	CSW-37-20171006	CSW-37-20180425	CSW-37-20181015	CSW-37	CSW-37	DUP-112519	CSW-37_051820	CSW-37	CSW-37	CSW-37
Date Sampled:	⁽¹⁾	7/17/2017	10/4/2017	5/3/2018	10/25/2018	7/15/2019	11/20/2019	5/22/2020	9/24/2020	4/22/2021	10/5/2021		6/29/2017	10/6/2017	4/25/2018	10/15/2018	7/11/2019	11/25/2019	11/25/2019	5/18/2020	9/23/2020	4/21/2021	10/5/2021
Duplicate of:																			CSW-37				
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	5.3	0.21 J	0.38	0.34	0.0764	0.0854	0.0814 J	0.0226 J	0.0487	0.105 J	0.065 J	0.036 J	0.036 J	0.05 U	0.05 U	0.0382	0.050 U	0.050 U	0.025 U	0.0080 U	0.0140 J	0.0510 J
Arsenic	0.01	0.0075	0.0017 J	0.0018 J	0.003 U	0.0014 J	0.002	0.005 U	0.0010 U	0.0018 J	0.0010 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.001 U	0.0020 U	0.0020 U	0.001 U	0.0010 U	0.0010 U	0.0010 U
Beryllium	0.004	0.00066	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.0010 U	0.005 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.0010 U	0.0010 U	0.000068 J	0.0004 U	0.0004 U	0.0020 U
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.01 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.0030 U	0.002 U	0.0004 U	0.0004 U	0.0020 U
Calcium	NS	93	370 J	480	520	191	139	165	219	262	235	28 J	17 J	13	12	11.1	10.7	10.8	10.8	10.3	9.20	9.79	
Iron	0.3	5.4	0.12 J	0.084 U	0.088 J	84.9	44.4	4.29	0.710	1.01	0.866	22 J	25 J	24	25	25.2	24.8	24.1	25	24.9	21.9	22.6	
Lead	0.015	0.0049	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.00029 J	0.005 U	0.0004 U	0.0004 U	0.0020 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0020 U	0.0020 U	0.00036 J	0.0004 U	0.0004 U	0.0020 U
Magnesium	NS	2.4	0.12 J	0.058 U	0.11 J	52.7	25	6.65	0.838	0.898	0.450	3 J	2.6 J	2.6	2.5	2.55	2.38	2.22	2.4	2.43	2.17	2.20	
Manganese	0.05	0.076	0.0095 UJ	0.0043 U	0.0095 U	2.98	1.4	0.15	0.0400 U	0.0262 J	0.0221	0.34 J	0.23 J	0.19	0.19	0.187	0.175	0.172	0.208	0.198	0.161	0.165	
Nickel ⁽²⁾	0.073	0.0094	0.013 J	0.019	0.021	0.0078 J	0.0020 J	0.015 U	0.0179	0.0124	0.0153	0.005 U	0.005 U	0.005 U	0.005 U	0.002 U	0.0019 J	0.0018 J	0.003 U	0.0006 J	0.0248	0.0020 U	
Potassium	NS	84	130	70	46	21.5	17.1	19.8	16.4	13.7	12.6	2.8 J	2.5 J	2.3	2.3	2.35	2.2	2.06	2.27	2.27	2.12	2.05	
Sodium	NS	82	100 J	70	57	101	56.4	52.9	40.6	32.0	30.4	18 J	18 J	19	19	19.9	19	19.3	18.7	20.0	16.8	16.6	
Zinc	5	0.012 J	0.02 U	0.02 U	0.02 U	0.0039 J	0.020 U	0.075 U	0.0083	0.0096	0.0144	0.02 U	0.02 U	0.02 U	0.02 U	0.0025 J	0.0091 J	0.0087 J	0.015 U	0.0063	0.0039	0.0091 J	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	0.41 J	0.19 J	0.77	0.26 J	0.738	0.71	0.96	0.959	1.02	1.13 J	0.26 J	0.18 J	0.32 J	5 UJ	0.195	0.18 J	0.21 J	0.207 J	0.207 J	0.210 J	0.500 U	
Chloride	250	12	12	38	68 J	75.5	60.9	70.2	81.9	98.0	76.0	23	30	31	28	30.7	28.2	28.2	32.4	24.8	1.00 U	23.6	
Fluoride	2	0.42	0.18 J	0.12	0.1 UJ	0.0557	0.14 J	0.073 J	0.200 U	0.183	0.500 U	0.12	0.063 J	0.083 J	1 U	0.0578	0.093 J	0.10 J	0.11 J	0.200 U	0.100 U	0.500 U	
Sulfate	250	12	11	7.4	9 J	385	228	135	100	77.4	65.6	2.4	0.22 J	0.7 J	10 U	1.06	1.3 J	1.1 J	1 J	2.00 U	1.00 U	5.00 U	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	ND	0.0029 J	0.035 J	0.05 U	0.0563	0.11 U	0.1 U	0.0600 U	0.0300 U	0.150 U	ND	ND	0.0300 U	0.05 R	0.05 U	0.006 U	0.11 U	0.11 U	0.1 U	0.0600 U	0.0300 U	0.150 U
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 U	0.006 U	0.0067 J	0.0035 J	0.120 U	0.0300 U	0.150 U	ND	ND	0.05 R	0.05 U	0.006 U	0.010 U	0.010 U	0.005 U	0.0600 U	0.0300 U	0.150 U	
Nitrogen, Nitrate-Nitrite	10	0.032 U	0.013 U	0.084 J	0.014 U	0.0563	0.10 U	0.095 U	0.0600 U	0.0600 U	0.300 U	0.025 U	0.025 U	0.025 U	0.025 U	0.012 U	0.010 U	0.10 U	0.095 UJ	0.120 U	0.0600 U	0.300 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha ⁽³⁾	15	9.74	-2.94 U	-5.83 U	4.73 U	2.5 U	0.302 U	1.7 U	2.2 U	2.63 U	1.38 J	1.9 J	0.882 U	0.272 U	0.939 U	1.8	3.19	2.6 U	1.84 J	1.0 U	1.05 U	2.45	
Gross Beta ⁽⁴⁾	50	70.3	111	44	31.6	28.4	17.3	14.5	25.2	9.56	3.07 J	2.74 J	2.3 J	2.86 J	5.2	2.46 U	2.42 U	2.18 J	5.6	0.0812 U	4.32		
Radium-226 ⁽⁵⁾	5	0.779 J	1.7	1.59	1.55	0.6	1.22	0.618 J	0.6 U	0.971	0.556 J	0.916 J	0.714 J	0.526 U	0.784 U	0.9	0.918	1.06	1.04	0.8	0.883	0.593 J	
Radium-228 ⁽⁵⁾	5	1.07 U	1.12	1.14	1.46	0.8 U	0.949 U	0.818 U	1.0 U	0.619	0.429 J	0.95 J	1.72 U	0.768 J	1.57	1.4	-0.0658 U	1.21 U	0.312 U	1.7	0.814	2.56	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	360	1200	1300	1300	419	324	160	419	563	556	87	61	68	72	74.7	28	34	60	77.2	62.7	52.6	
Total Dissolved Solids	500	500	1600	1600	1500	1320	745	358	777	872	806	150	160	130	110	125	109	107	125	94.0	126	133	
Total Suspended Solids	NS	250	3.2	5	2.1	104	96.4	265	17.0 J	20.0	6.32	28	27	11	8.6	7.25	9.3	9.7	3.9 J	14.0	2.00 J	6.67	
Field Parameters																							
pH (S.U.)	6.5-8.5	11.98	12.29	12.05	12.6	NA	NA	8.62	12.44	13.19	NA	7.04	6.1	5.99	5.92	NA	NA	NA	6.34	6.34	6.13		
Specific Conductivity (mS/cm)	NS	1.65	5.07	6.07	5.75	NA	NA	1.090	1.95	2.960	NA	0.122	0.264	0.268	0.278	NA	NA	NA	0.225	0.156	0.209		
Temperature (°c)	NS	22.16	18.67	21.33	16.25	NA	NA	14.87	15.4	13.49	NA	16.66	15.47	14.41	15.24	NA	NA	NA	14.57	16.56	14.61		
Turbidity (NTU)	NS	183	3.24	2.75	1.88	NA	NA	37	7.6	16	NA	8.34	10	0.0	7.3	NA	NA	NA	0.0	0.9	2.0		
Dissolved Oxygen (mg/L)	NS	0.00	1.23	0.75	0.00	NA	NA	0.00	0.00	0.00	NA	0.00	0.74	1.57	0.00	NA	NA	NA	0.00	0.00	0.00		
Oxidation-Reduction Potential (mV)	NS	-359	-580	-313	-293	NA	NA	-360	-342	-378	NA	-91	-61	-132	-9	NA	NA	NA	-26	-71	-4		

Table 4
Data Summary of Analytical Results
Comparison July 2017 through October 2021
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	CSW-38											CSW-39													
Sample Number:	SMCL	CSW-38-20170705	CSW-38-20171005	CSW-38-20180501	CSW-38-20181023	CSW-38	CSW-38	CSW-38_052120	CSW-38	CSW-38	CSW-38	CSW-38	CSW-39-20170628	CSW-39-20171002	CSW-39-20180507	CSW-39-20181022	CSW-39	CSW-39	CSW-39_051920	CSW-39	CSW-39	CSW-39				
Date Sampled:	(1)	7/5/2017	10/5/2017	5/1/2018	10/23/2018	7/9/2019	11/25/2019	5/21/2020	09/17/2020	4/22/2021	9/28/2021		6/28/2017	10/2/2017	5/7/2018	10/22/2018	7/11/2019	11/19/2019	5/19/2020	09/23/2020	4/20/2021	9/29/2021				
Duplicate of:																										
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L				
Aluminum	0.05	0.31	0.58	0.51	0.58	2.04	0.927	1.09	1.48	0.837	0.659		1	2.1	11	9	0.468	0.763	0.572	0.0466	0.0543	4.38				
Arsenic	0.01	0.003	U	0.003	U	0.003	U	0.0012	J	0.00083	J	0.00084	U	0.0012	J	0.0014	U	0.0010	U	0.003	U	0.0016	J			
Beryllium	0.004	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0002	U	0.00022	J	0.00053	U	0.00031	J			
Cadmium	0.005	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U			
Calcium	NS	130	170	220	220	127	144	122	166	92.0	78.5		19	27	28	40	52.5	32.1	71.8	157	149	63.4				
Iron	0.3	10	11	13	3	6.73	2.93	1.25	0.202	0.156	0.173		5.3	1.9	3.9	3.3	0.51	2.93	0.889	0.0656	0.0942	12.0				
Lead	0.015	0.0025	U	0.0025	U	0.0025	U	0.0004	U	0.0020	U	0.0015	U	0.0004	U	0.0020	U	0.0018	J	0.0025	U	0.0018	J			
Magnesium	NS	10	3.1	3.9	0.76	4.34	0.491	J	0.228	J	0.0818		0.134	0.217		3.4	1.4	1.7	1.4	0.863	0.938	3.92				
Manganese	0.05	0.18	0.13	0.18	0.039	0.116	0.0446		0.0149	0.0080	U	0.0080	U	0.0080	U	0.11	0.058	0.064	0.048	0.0088	J	0.0444				
Nickel ⁽²⁾	0.073	0.0075	0.0071	0.009	0.012	0.0121	0.0088	0.0068	U	0.0139	0.0109	0.0056	U	0.0033	U	0.002	J	0.0038	J	0.005	0.0051	J	0.0128			
Potassium	NS	21	18	13	10	7.36	5.67	5.69	5.99	5.41	5.10		17	50	39	37	31.9	23.2	21.1	25.3	20.0	13.7				
Sodium	NS	73	48	32	31	36.8	33.3	34.5	29.6	33.2	34.1		38	54	48	48	63.8	54.8	78	91.6	85.0	51.3				
Zinc	5	0.02	U	0.02	U	0.02	U	0.0025	J	0.020	U	0.015	U	0.0043	0.0030	0.0137	0.02	U	0.0031	J	0.0059	J	0.015	U		
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L				
Bromide	NS	0.84	0.69	0.82	0.65	0.458	0.51	0.52	0.482	J	0.460	0.500	U	0.25	J	0.16	J	0.29	J	0.36	J	0.386	0.34	J		
Chloride	250	160	92	64	69	59.7	59.5	44.9	52.2	56.5	44.8		40	38	35	42	62.4	64	99.6	149	186	64.4				
Fluoride	2	0.1	U	0.23	0.14	J	0.095	J	0.204	0.16	J	0.18	J	0.204	0.283	0.500	U	0.12		0.091	J	0.11		0.11		
Sulfate	250	160	97	52	J	32	57.5	57	32.5	54.0	53.2		16	11	7.2	7.3	9.27	8	6.6	8.50	9.99	9.97	J			
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L				
Nitrogen, Nitrate	10	ND	ND	0.05	U	0.006	U	0.11	U	0.1	U	0.0864	J	0.0300	U	0.150	U	ND	ND	0.05	U	0.05	U	0.006	U	
Nitrogen, Nitrite	1	ND	ND	0.05	U	0.05	U	0.006	U	0.010	U	0.0041	J	0.0600	U	0.0300	U	0.150	U	ND	ND	0.05	U	0.05	U	
Nitrogen, Nitrate-Nitrite	10	0.034	J	0.025	U	0.025	U	0.025	UJ	0.012	U	0.10	U	0.095	U	0.120	U	0.0600	U	0.300	U	0.025	U	0.025	U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L				
Gross Alpha ⁽³⁾	15	2.26	U	0.141	U	2.67	U	-1.37	U	6.0	0.893	U	1.55	U	1.7	U	0.0701	U	0.0761	U	2.58	U	0.601	U	6.41	U
Gross Beta ⁽⁴⁾	50	14.9		11.4		9.45		2.8	U	12.5		3.86		4.66	J	8.1		2.62	J	5.99		16.3		39.6		
Radium-226 ⁽⁵⁾	5	0.28	U	0.268	J	0.294	J	0.293	U	0.3	0.818		0.721	J	0.4	0.226	J	0.278	J	0.546	J	0.516	J	0.731	J	
Radium-228 ⁽⁵⁾	5	0.206	U	0.264	U	0.494	J	0.334	U	0.7	U	1.04	U	0.595	U	0.71	0.0903	U	0.230	U	0.369	J	0.783	J	0.474	J
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L				
Total Alkalinity	NS	49	270	380	500	242	243	243	385	177	135		84	130	110	120	160	84.5	177	389	496	44.1				
Total Dissolved Solids	500	740	710	66	U	780	468	246	346	546	J	374	332	200	270	220	260	301	257	330	654	286				
Total Suspended Solids	NS	51	83	45	23	46	100	20.5	2.00	U	2.00	J	15.5	28	110	200	150	33	111	28.3	2.00	U	4.00	J		
Field Parameters																										
pH (S.U.)	6.5-8.5	9.29	11.61	12.05	12.43	NA	NA	12.22	12.29	12.29	11.81		7.78	12.26	10.7	11.6	NA	NA	12.55	12.29	13.05	10.52				
Specific Conductivity (mS/cm)	NS	0.386	1.77	3	2.79	NA	NA	1.28	1.62	1.00	0.705		0.343	0.695	0.64	0.879	NA	NA	1.21	1.8	2.31	0.401				
Temperature (°c)	NS	20.56	17.16	18.88	15.61	NA	NA	14.38	16.51	13.81	14.01		17.59	17.52	15.66	14.44	NA	NA	14.60	15.52	14.72	13.96				
Turbidity (NTU)	NS	35.2	34.9	15.8	7.5	NA	NA	5.5	2.4	3.0	6		26	70.3	158	122	NA	NA	13.2	2.4	1.7	738				
Dissolved Oxygen (mg/L)	NS	0.00	1.89	0.32	0.00	NA	NA	0.00	0.00	0.00	0.00		0.00	0.00	0.13	0.00	NA	NA	0.00	0.00	0.00	0.00				
Oxidation-Reduction Potential (mV)	NS	-378	-498	-317	-247	NA	NA	-249	-377	-420	-239		-338	-359	-313	-198	NA	NA	-207	-340	-102	-205				

Table 4
Data Summary of Analytical Results
Comparison July 2017 through October 2021
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	PZ-1												PZ-2												
Sample Number:	SMCL	PZ-1-20170629	PZ-1-20171006	PZ-1-20180425	PZ-1-20181015	PZ-1	PZ-1	PZ-1_051820	PZ-1	DUP-3	PZ-1	PZ-1		PZ-2-20170705	PZ-2-20171005	DUP-02-20171005	PZ-2-20180501	DUP-02-20180501	PZ-2-20181023	PZ-2	PZ-2	PZ-2_052120	PZ-2	PZ-2	PZ-2	DUP-2-PZ-2
Date Sampled:	⁽¹⁾	6/29/2017	10/6/2017	4/25/2018	10/15/2018	7/11/2019	11/25/2019	5/18/2020	09/23/2020	9/23/2020	4/21/2021	9/21/2021		7/5/2017	10/5/2017	10/5/2017	5/1/2018	5/1/2018	10/23/2018	7/9/2019	11/25/2019	5/21/2020	9/17/2020	4/22/2021	9/22/2021	9/22/2021
Duplicate of:										PZ-1						PZ-2-20171005		PZ-2-20180501								
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	0.05	0.033 J	0.05 U	0.018 J	0.024 J	0.0421	0.050 U	0.0183 J	0.0261 J	0.0229 J	0.0080 U	0.0490 J	0.098 J	0.024 J	0.018 J	0.05 U	0.05 U	0.024 J	0.0085 J	0.0342 J	0.0183 J	0.0222 J	0.0917	0.0400 U	0.0400 U	
Arsenic	0.01	0.0028 J	0.003 U	0.003 U	0.003 U	0.001 U	0.00046 J	0.0005 J	0.0016 J	0.0021	0.0028	0.0010 U	0.0045	0.0044	0.0043	0.005	0.0055	0.0053	0.0051	0.0052	0.005	0.0053	0.0066	0.0044	0.0048	
Beryllium	0.004	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0002 U	0.0005 U	0.0004 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0002 U	0.0010 U	0.0005 U	0.0004 U	0.0004 U	0.0020 U	0.0020 U
Cadmium	0.005	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.00030 U	0.0002 U	0.0004 U	0.0004 U	0.0020 U	0.0004 U	0.0004 U	0.0004 U	0.00022 J	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0030 U	0.0002 U	0.0004 U	0.0004 U	0.0020 U	0.0020 U
Calcium	NS	270	230 J	210	250	222	217	213	192	189	169	204	14	9.8	9.5	11	11	11	25	18.1	23.2	24.5	18.8	17.1	16.8	
Iron	0.3	160	140 J	130	160	138	138	132	124	121	114	136	99	76	74	76	81	68	64.5	67.6	66.2	60.7	54.3	56.7		
Lead	0.015	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.0020 U	0.001 U	0.0004 U	0.0004 U	0.0004 U	0.0020 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0020 U	0.0013 U	0.0004 U	0.0006 J	0.0020 U	0.0020 U	
Magnesium	NS	280	240 J	220	270	248	235	223	217	212	185	228	12	9	8.5	9.4	10	8.7	9.64	7.72	9.77	9.46	9.76	8.26	8.40	
Manganese	0.05	210	36 J	33	37	35.5	30.2	35.3	32.9	32.9	28.3	28.6	1.1	0.89	0.86	0.86	0.92	0.78	0.802	0.751	0.862	0.884	0.843	0.802	0.834	
Nickel ⁽²⁾	0.073	0.0032 J	0.0022 J	0.005 U	0.005 U	0.0073 J	0.0028 J	0.003 U	0.0058	0.0056	0.0193	0.0062 J	0.0047 J	0.0029 J	0.0034 J	0.0034 J	0.005 U	0.0019 J	0.005 U	0.0029 J	0.0039 J	0.0016 U	0.0024	0.0093	0.0050 J	0.0034 J
Potassium	NS	33	29 J	27	32	30.5	29.7	30.7	27.4	26.6	24.6	28.8	2	1.3	1.3	1.3	1.4	1.2	1.81	1.58	1.52	1.69	1.45	1.39	1.37	
Sodium	NS	2700	430 J	400	490	468	442	449	429	423	370	448	86	67	65	55	59	50	56.5	57.2	56.1	53.3	46.0	50.9	46.4	
Zinc	5	0.02 U	0.02 U	0.02 U	0.02 U	0.0069 J	0.020 U	0.015 U	0.0028	0.0036	0.0035	0.0146	0.015 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.0061 J	0.020 U	0.015 U	0.0046	0.0054	0.0819	0.0827	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Bromide	NS	7.2 J	4.2	7.8 J	6.1 J	2.01	3.9	3.8	3.82	3.58	3.60	4.19	0.32 J	0.28	0.28	0.51 J	0.5 J	1 U	0.326	0.19 J	0.36 J	0.331 J	0.320	0.249 J	0.292 J	
Chloride	250	810	750	720	780	564	692	763	725	678	660	665	30	29	29	27 J	27 J	26	35.6	33.4	29.1	30.8	32.6	25.6	26.2	
Fluoride	2	2.5 U	0.061 J	2.5 U	2.5 U	0.0205	0.89	0.52	0.200 U	0.200 U	0.264	0.301	0.097 J	0.1	0.098 J	0.11 J	0.11 J	0.2 U	0.0246	0.056 J	0.081 J	0.200 U	0.100 U	0.200 U	0.200 U	
Sulfate	250	1400	1300	1300 J	1300	1320	1110	1400	1120	1050	888	1120	170	110	110	100 J	99 J	85	83.2	68.7	71.4	86.8	88.6	74.1	78.6	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Nitrogen, Nitrate	10	ND	ND	0.05 R	0.25 U	0.892	0.34	1	0.0600 U	0.0600 U	0.0407 J	0.0779 J	ND	ND	ND	0.1 U	0.1 U	0.5 U	0.006 U	0.11 U	0.1 U	0.0600 U	0.0300 U	0.0600 U	0.0600 U	
Nitrogen, Nitrite	1	ND	ND	0.05 R	0.25 U	0.006 U	0.010 U	0.005 U	0.0600 U	0.120 U	0.0300 U	0.0600 U	ND	ND	ND	0.1 U	0.1 U	0.5 U	0.006 U	0.0032 J	0.0005 U	0.0600 U	0.0300 U	0.0600 U	0.0600 U	
Nitrogen, Nitrate-Nitrite	10	0.025 U	0.025 U	0.029 J	0.02 J	0.892	0.34	1	0.120 U	0.0600 U	0.0600 U	0.120 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.012 U	0.10 U	0.095 U	0.120 U	0.0600 U	0.120 U	0.120 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Gross Alpha ⁽³⁾	15	0 U	16 U	-4.39 U	4.4 U	5.3	-3.74 U	2.25 U	4.3 U	3.9 U	1.47 U	2.43 U	3.36	1.91 U	1.61 U	3.61 J	-0.803 U	0.493 U	2.6	4.45	2.91 U	3.4	2.00	2.33	3.02	
Gross Beta ⁽⁴⁾	50	37.7	13.5	21	10.2 U	34.9	26.7	19.3	33.6	47.6	12	31.8	3.58 U	2.38 J	0.538 U	2.05 J	1.19 U	1.47 U	5.3	3.15	2.6 U	7.1	0.809 J	3.38	2.67	
Radium-226 ⁽⁵⁾	5	0.361 J	0.318 J	0.273 U	0.503 U	2.9	0.589	1.17	1.0	1.2	0.5	0.645	1.25	0.86 J	1.02	1.09	1.05	0.875 U	1.5	1.4	1.62	1.1	0.791	0.916	0.869	
Radium-228 ⁽⁵⁾	5	0.935 J	1.6 U	1.11	1.83	1.4	2.19 U	0.394 U	1.1	1.2	0.712	1.83	1.04	0.486 U	0.602 U	0.55 J	0.965 J	0.735 J	0.9	1.65	0.582 U	0.71	0.637	2.18	0.778	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Total Alkalinity	NS	510	550	550	670	580	401	542	597	656	506	269	63	110	92	120	130	88	99	74	105	91.4	85.0	77.3	75.4	
Total Dissolved Solids	500	4100	4200	3200	3600	3770	3170	3570	3210	3210	3040	3690	340	380	390	330	330	300	302	411	240	308 J	328	295	265	
Total Suspended Solids	NS	220	160	59	48	120	125	63.5	128	150	70.0	111	110	80	98	48	51	110	122	115	75.5	126	64.0	81.0	83.0	
Field Parameters																										
pH (S.U.)	6.5-8.5	6.55	6.15	6.37	6.16	NA	NA	6.36	6.26	NA	6.38	6.02	6.75	6.71	NA	6.98	NA	6.85	NA	NA	7.29	7.1	6.71	6.66		
Specific Conductivity (mS/cm)	NS	5.39	5.24	4.73	5.1	NA	NA	5.07	4.15	NA	4.13	5.15	0.716	0.72	NA	0.712	NA	0.593	NA	NA	0.525	0.385	0.462	0.461		
Temperature (°C)	NS	18.4	18.37	16.16	16.85	NA	NA	16.61	14.95	NA	15.67	14.82	17.79	18.42	NA	16.65	NA	17.15	NA	NA	15.48	14.74	14.08	13.80		
Turbidity (NTU)	NS	3.04	1.09	1.98	7.2	NA	NA	9.9	4.1	NA	4.2	16.6	8.3	2.46	NA	9.81	NA	7.33	NA	NA	15.9	15.8	20.4	7.0		
Dissolved Oxygen (mg/L)	NS	0.00	0.00	0.00	0.03	NA	NA	0.00	0.00	NA	0.00	0.00	0.00	0.00	NA	0.00	NA	0.00	NA	NA	0.00	0.00	0.00	0.00		
Oxidation-Reduction Potential (mV)	NS	-65	-128	-87	-79	NA	NA	-111	-96	NA	-28	-84	-134	-171	NA	-185	NA	-145	NA	NA	-210	-219	-110	-119		

Table 4
Data Summary of Analytical Results
Comparison July 2017 through October 2021
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	PZ-3										PZ-4											
Sample Number:	SMCL	PZ-3-20170707	PZ-3-20171016	PZ-3-20180502	PZ-3-20181019	PZ-3	PZ-3	PZ-3_052120	PZ-3	PZ-3	PZ-3	PZ-4-20170717	PZ-4-20171004	PZ-4-20180503	PZ-4-20181019	PZ-4	PZ-4	PZ-4_052220	PZ-4	PZ-4	DUP-2-PZ-4	PZ-4	
Date Sampled:	⁽¹⁾	7/7/2017	10/16/2017	5/2/2018	10/19/2018	7/11/2019	11/25/2019	5/21/2020	9/16/2020	4/20/2021	9/23/2021	7/17/2017	10/4/2017	5/3/2018	10/19/2018	7/15/2019	11/20/2019	5/22/2020	9/24/2020	4/22/2021	4/22/2021	9/22/2021	
Duplicate of:																							
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Aluminum	0.05	19	16	16	16 J	13.7	13.5	14.5	13.3	11.4	11.0	0.16	1.2 J	5.7	2.2 J	4.73	4.83	12.7	7.31	9.62	9.60	9.04	
Arsenic	0.01	0.0042	0.0057	0.0077	0.0045	0.0018 J	0.0158	0.0102 J	0.0010 U	0.0041	0.0010 U	0.0021 J	0.0042	0.0046	0.0039	0.0014 J	0.011	0.0119 J	0.0025	0.0033	0.0028	0.0010 U	
Beryllium	0.004	0.0089	0.0063	0.0084	0.0084	0.0052 J	0.0071	0.0079 J	0.0040 J	0.0057	0.0051 J	0.00031 J	0.0033	0.0056	0.0053	0.0069 J	0.0084	0.0164	0.0101	0.0122	0.0119	0.0096 J	
Cadmium	0.005	0.0004	U	0.001	0.0011	0.0013	0.0013 J	0.00070 J	0.0012 J	0.0015 J	0.0014 J	0.0020 U	0.00016 J	0.0004 U	0.0004 U	0.0004 U	0.003 U	0.02 U	0.0004 U	0.0004 U	0.0004 U	0.0020 U	
Calcium	NS	170	140	170	150	149	140	128	116	113	106	370	260 J	200	190	143	132	164	110	103	102	92.4	
Iron	0.3	280	240	290	260	253	249	219	204	199	185	130	180 J	170	170	148	128	189	134	129	128	111	
Lead	0.015	0.0025	U	0.0025 U	0.0025 U	0.0025 U	0.0023	0.0016 U	0.0033	0.0004 U	0.0020 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0004 U	0.00025 J	0.01 U	0.0004 U	0.0004 U	0.0004 U	0.0020 U	
Magnesium	NS	140	120	140	130	131	125	116	108	102	94.9	100	94 J	92	92	83.6	73	102	72.2	72.8	72.3	61.7	
Manganese	0.05	590	120	92	110	118	98.8	81.9	93.2	85.0	77.8	54	79 J	77	67	57.4	47.8	61.1	53.0	47.5	46.5	39.8	
Nicke ⁽²⁾	0.073	0.38	0.34	0.36	0.33 J	0.35	0.285	0.323	0.272	0.227	0.247	0.022	0.076 J	0.15	0.14 J	0.169	0.167	0.298	0.155	0.193	0.175	0.197	
Potassium	NS	14	12	14	13 J	13.1	11.2	11.8	10.5	10.3	9.27	15	9.7	20	7.6 J	8.83	10.3	11.6	6.75	6.00	5.97	6.02	
Sodium	NS	270	240	280	250	260	244	226	218	204	186	210	170 J	160	140	129	119	157	121	108	106	99.7	
Zinc	5	0.72	0.64	0.66	0.65	0.636	0.586	0.667 U	0.428	0.425	0.475 J	0.02 U	0.03 J	0.064	0.059	0.154	0.169	0.522 U	0.175	0.244	0.230	0.307	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Bromide	NS	5 U	1.9	2	1.8	1.76	0.66	1.5	1.85	1.78	1.65	1.2	1.4	2.1 J	3.6	0.874	0.55	1	0.806	0.894	0.890	0.839	
Chloride	250	340	330	280	320	273	274	252	297	305	248	300	270	220	230	170	194	210	176	196	195	158	
Fluoride	2	0.82 J	0.35 J	0.43	0.42	0.305	0.57	0.46	0.482	0.362	0.559	0.28	0.89 J	0.49 J	0.55	0.619	1.4	1.3	0.819	0.877	0.925	1.08	
Sulfate	250	2300	1800	2400	3500	2410	1550	1850	1290	1660	1460	1200	1400	1500	1500	1130	1340	1430	1030	1070	1050	983	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	ND	0.05 U	0.05 U	0.0829	0.11 U	0.1 U	0.0600 UJ	0.0300 U	0.0600 U	0.0068 J	0.0025 J	0.05 U	0.05 U	0.006 U	0.11 U	0.1 U	0.0600 U	0.0300 U	0.0300 U	0.0600 U	
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 UJ	0.006 U	0.010 U	0.005 U	0.0600 UJ	0.0300 U	0.0600 U	ND	ND	0.05 U	0.05 UJ	0.0115 J	0.0032 J	0.005 U	0.0600 U	0.0300 U	0.0300 U	0.0600 U	
Nitrogen, Nitrate-Nitrite	10	0.25 U	0.025 U	0.025 U	0.04 J	0.0829	0.10 U	0.095 U	0.120 U	0.0600 U	0.120 U	0.025 U	0.025 U	0.025 UJ	0.028 J	0.012 U	0.10 U	0.095 U	0.120 U	0.0600 U	0.0600 U	0.120 U	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha ⁽³⁾	15	-1.48 U	4.74 U	3.47 U	4.97 U	8.9	8.22 U	3.82 U	7.2	9.11 J	1.16 U	3.39 U	-1.19 U	7.57 U	0.711 U	9.6	3.56 U	6.43 U	9.9	10.9	6.28 J	6.12	
Gross Beta ⁽⁴⁾	50	21.9	15.3	8.88 U	11.3	31.6	12.3	19.3	25.4	-0.577 U	9.6 U	13.5	3.43 U	14.7	0.328 U	15	11.6	10.9	18.5	7.47	5.45 J	9.39	
Radium-226 ⁽⁵⁾	5	0.61 J	0.677 J	0.382 J	0.742 U	2.6	0.73	0.505 U	2.1	3.31	0.807	0.553 J	0.385 J	0.733 J	0.964 U	2.3	0.599	0.445 J	2.7	0.764	1.03	1.84	
Radium-228 ⁽⁵⁾	5	2	2.88 U	1.69	1.96	2.2	2.61	2.49 J	3.1	0.361	0 U	0.747 U	0.582 J	1.31	1.31	2.2	2.18	1.29 U	2.9	3.50 J	1.55 J	2.9	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	5 U	5 U	5 U	5 U	12.6	10 U	4 U	56.8	5.00 U	5.00 U	43	81	66	59	31.5	17.5	4 J	5.00 U	5.00 U	5.00 U	5.00 U	
Total Dissolved Solids	500	3000	3400	3200	3200	3320	2740	2620	2800	2820	2330 J	2400	2700	2500	2300	2100	1860	2200	1770	1770 J	915 J	1660	
Total Suspended Solids	NS	34	5.6	1200	4.4	22	19	4.6	8.00 J	8.00 J	2.00 R	84	110	43	19	17.6	22.3	22.1	15.0 J	2.00 U	5.00 J	3.00 J	
Field Parameters																							
pH (S.U.)	6.5-8.5	4.26	4.18	5.02	4.55	NA	NA	4.10	4.13	4.24	3.8	7.27	6.36	5.47	5.72	NA	NA	4.87	4.93	4.58		4.51	
Specific Conductivity (mS/cm)	NS	3.2	3.74	3.18	3.42	NA	NA	3.10	2.7	2.99	2.74	2.92	3.3	3.14	2.82	NA	NA	2.99	1.79	2.01		1.86	
Temperature (°C)	NS	18.88	16.87	21.75	16.14	NA	NA	16.64	15.86	14.69	13.85	22.57	18.5	23.2	16.12	NA	NA	15.32	14.14	13.99		13.97	
Turbidity (NTU)	NS	5.93	4.96	8.8	9.96	NA	NA	1.7	1.4	26.8	5.7	9.24	15.8	17.3	6.9	NA	NA	26.1	3.7	2.8		2	
Dissolved Oxygen (mg/L)	NS	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00		0.00	
Oxidation-Reduction Potential (mV)	NS	156	123	108	155	NA	NA	172	187	192	278	-114	-99	12	11	NA	NA	113	99	123		152	

Table 4
Data Summary of Analytical Results
Comparison July 2017 through October 2021
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Sampling Location:	MCL/	PZ-5										
Sample Number:	SMCL	PZ-5-20170726	PZ-5-20171016	PZ-5-20180509	PZ-5-20181030	PZ-5	PZ-5	PZ-5_051820	PZ-5	PZ-5	PZ-5	
Date Sampled:	⁽¹⁾		10/16/2017	5/9/2018	10/30/2018	7/15/2019	11/20/2019	5/18/2020	09/29/2020	5/6/2021	10/5/2021	
Duplicate of:												
Total Inorganics		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Aluminum	0.05	0.05 U	0.05 U	0.028 J	0.022 J*	0.103	0.0197 J	0.0289 J	0.0770	0.872	0.249	
Arsenic	0.01	0.003 U	0.0019 J	0.0018 J	0.0017 J*	0.0014 J	0.0015 J	0.00088 J	0.0010 U	0.0016 J	0.0010 U	
Beryllium	0.004	0.0004 U	0.00022 J	0.0004 U	0.0004 U*	0.002 U	0.000066 J	0.0002 J	0.0004 U	0.0005 J	0.0020 U	
Cadmium	0.005	0.0004 U	0.00024 J	0.00058	0.0004 J*	0.003	0.0014 J	0.0014 J	0.0038	0.0088	0.0055 J	
Calcium	NS	21	27	43	50 *	69	45	33.2	73.8	81.7	51.3	
Iron	0.3	24	20	5.8	8.8 *	4.61	7.34	2.94	7.07	5.90	0.899	
Lead	0.015	0.0013 J	0.0025 U	0.0025 U	0.0025 U*	0.0024	0.00038 J	0.00018 J	0.00050 U	0.0070	0.0020 U	
Magnesium	NS	15	19	21	18 *	27.6	18.3	17.2	48.8	22.0	26.1	
Manganese	0.05	11	15	16	13 *	17.8	14.6	12.1	39.7	17.3	21.7	
Nickel ⁽²⁾	0.073	0.042	0.11	0.11	0.082 *	0.157	0.108	0.129	0.327	0.150	0.226	
Potassium	NS	5.9	5.5	6.5	6.6 *	6.59	5.94	6.55	9.83	7.21	8.26	
Sodium	NS	22 J	24	31	22 *	15.7	19.2	22.4	31.2	11.3	13.5	
Zinc	5	0.048	0.18	0.35 J	0.16 *	0.629	0.563	0.36	0.888	0.886	0.674	
Anions		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Bromide	NS	0.32 J	0.3	0.41 J	0.35 J	0.288	0.15 J	0.13 J	0.200 U	0.246 J	0.500 U	
Chloride	250	24	34	23	22	12.6	22.5	29.1	23.3	10.3	11.1 J	
Fluoride	2	0.1 U	0.06 UJ	0.1 U	0.1 U	0.02	0.065 J	0.1 U	0.200 U	0.143	0.500 U	
Sulfate	250	130	180	210	190 J	159	210	200	580	197	236	
Nitrogen		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Nitrogen, Nitrate	10	ND	0.0021 J	0.23	0.24	0.817	0.12	0.21	0.0600 U	2.87 J	0.343 J	
Nitrogen, Nitrite	1	ND	ND	0.05 U	0.05 U	0.00948 J	0.0081 J	0.005 U	0.0600 U	0.0370 J	0.150 U	
Nitrogen, Nitrate-Nitrite	10	0.025 U	0.029 J	0.28	0.18 *	0.826	0.13	0.21	0.120 U	2.91 J	0.343 J	
Radiochemistry		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
Gross Alpha ⁽³⁾	15	0.908 U	0.0767 U	3.02	0 U	5.2	0.343 U	2.43 J	1.5	9.49	3.38	
Gross Beta ⁽⁴⁾	50	5.09	4.31	5.81	6.88	11.1	8.17	4.42 J	15.6	13.1	13.1	
Radium-226 ⁽⁵⁾	5	0.113 J	0.122 J	0.275 J	0.644 J	1	0.823	1.39	0.8	3.41	0.557 J	
Radium-228 ⁽⁵⁾	5	0.868 U	0.836 U	0.402 U	1.38 U	1.4	0.0534 U	-0.041 U	1.6	1.12	1.86	
Miscellaneous		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Total Alkalinity	NS	46	39	56	82 *	91.6	68.5	10.5	15.2	103	40.8	
Total Dissolved Solids	500	140	440	430	440	481	390	346	842	606	560	
Total Suspended Solids	NS	7.9 U	3.2	3.1	10	61	18.4	1.7 J	2.00 U	41.7	22.0	
Field Parameters												
pH (S.U.)	6.5-8.5	4.2	5.24	5.43	6.12	NA	NA	5.89	5.4			
Specific Conductivity (mS/cm)	NS	0.474	0.615	0.681	0.655	NA	NA	0.461	0.65			
Temperature (°c)	NS	17.13	14.38	16.85	16.89	NA	NA	14.97	14.38			
Turbidity (NTU)	NS	6.17	1.81	3.64	3.77	NA	NA	2.7	2.3			
Dissolved Oxygen (mg/L)	NS	3.2	1.73	0.79	0.00	NA	NA	0.00	0.00			
Oxidation-Reduction Potential (mV)	NS	334	167	55	-3	NA	NA	101	126			

Table 4
Data Summary of Analytical Results
Comparison July 2017 through October 2021
Pearce Creek Confined Disposal Facility
Cecil County, Maryland

Data Qualifiers:
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Limit of Quantitation (LOQ).
U -- Value is a non-detected result as reported by the laboratory.
UJ -- Non-detected result is considered estimated due to exceedance of technical quality control criteria.
R -- Non-detected result value is considered unusable due to exceedance of technical quality control criteria.
NA -- No result is available/applicable for this parameter in this sample.
ND -- Not detected and calculated result was not determined.
NS -- Not Specified

⁽¹⁾MCL = Maximum Contaminant Level National Primary and Secondary Drinking Water Regulations, August 2009.
⁽²⁾The Nickel screening level is the Maryland Department of the Environment (MDE) Groundwater Cleanup Standard.
⁽³⁾Some non-detect results for Gross Alpha were greater than the screening level
⁽⁴⁾The Gross Beta screening value is 4 millirems per year which cannot be applied to the value reported for Gross Beta in pCi/L, therefore guidance purposes, the Gross Beta results will be compared with the 50 pCi/L screening level provided in the Code of Federal Regulations (CFR) and Code of Maryland Regulations (COMAR) sampling and analysis requirements.
⁽⁵⁾MCL is for Ra-226 and Ra-228 combined.

Bold values exceed the EPA MCL
Italicized values exceed the EPA secondary standard
Bold, italicized values exceed the MDE standard or COMAR standard.

* The asterisked results for samples PZ-5-20181030 were interchanged with RB-20181030 (not shown). The samples for metals, total-nitrate/nitrite, radium-226, radium-228, and alkalinity reported by the laboratory are suspected to have been switched during the sample handling, shipping, or analysis procedures.

ATTACHMENT B - FIGURES

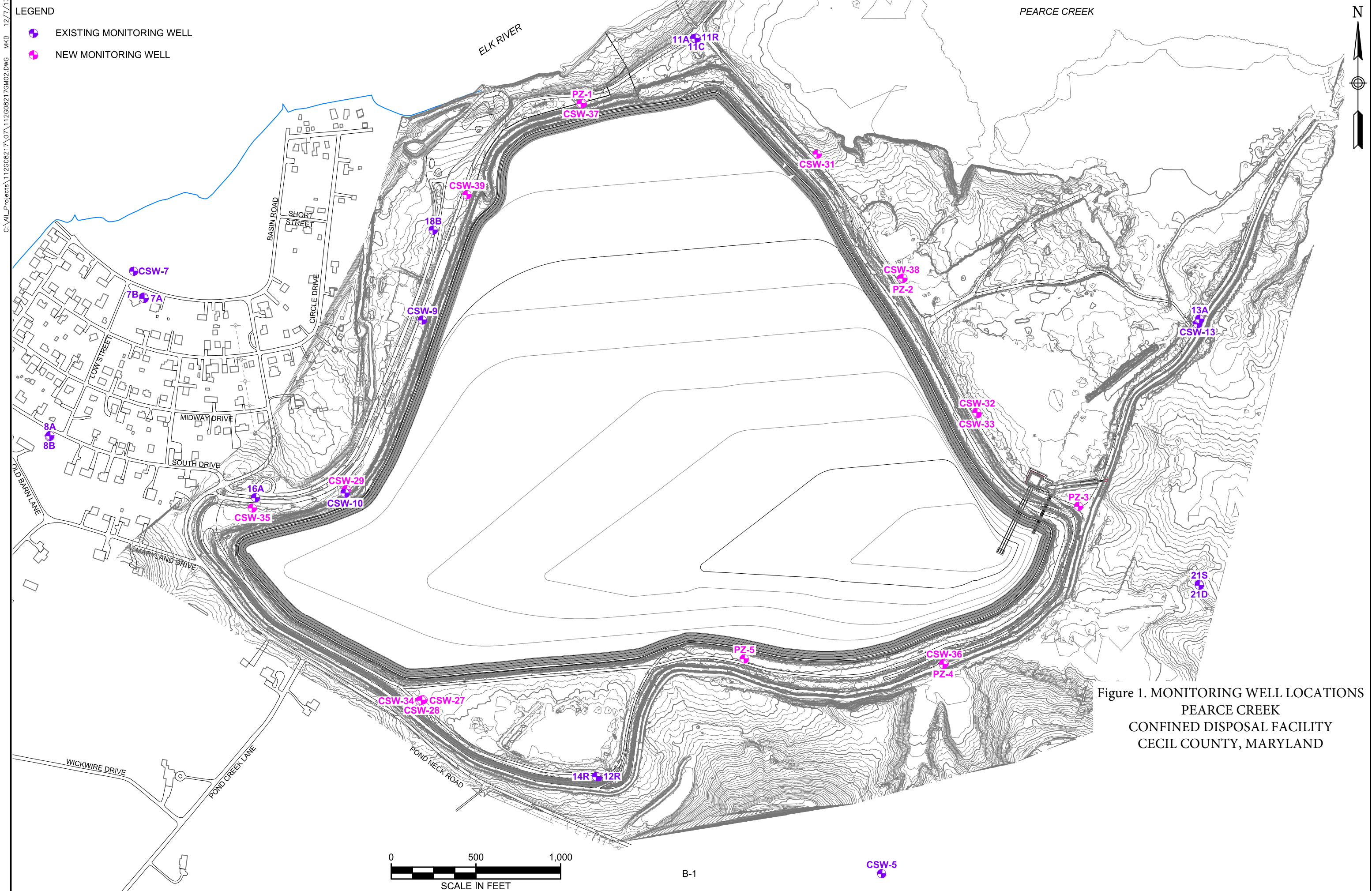


Figure 1. MONITORING WELL LOCATIONS
PEARCE CREEK
CONFINED DISPOSAL FACILITY
CECIL COUNTY, MARYLAND

Figure 2. MONITORING WELLS IN THE MAGOTHY AQUIFER



Figure 3. MONITORING WELLS IN THE UPPER PATAPSCO SHALLOW AQUIFER



Figure 4. MONITORING WELLS IN THE UPPER PATAPSCO DEEP AQUIFER



ATTACHMENT C – GROUNDWATER ELEVATION DATA

Well ID	NAD83		Elevation NAVD88 (feet)			Depth to Water April 15, 2021	Groundwater Elevation
	Northing	Easting	Top of Casing	Top of PVC	Ground		
Magothy			ft AMSL			ft AMSL	
CSW-27	641445.523	1598175.768	35.57	35.26	31.92	27.95	7.31
CSW-29	642684.596	1597722.308	31.32	31.20	28.16	24.94	6.26
PZ-1	644964.826	1599115.090	22.63	22.51	19.35	21.35	1.16
PZ-2	643933.022	1601006.901	25.66	25.45	22.56	16.33	9.12
PZ-3	642586.996	1602043.597	24.03	23.87	21.11	13.21	10.66
PZ-4	641654.704	1601244.735	24.38	24.20	21.25	15.36	8.84
PZ-5	641686.897	1600070.702	42.75	42.62	39.52	33.66	8.96
CSW-5	640418.877	1600881.043	47.03	46.82	46.82	39.44	7.38
CSW-32	643133.172	1601445.241	25.60	25.49	22.78	N/A	N/A
CSW-13	643662.830	1602744.431	17.81	17.26	15.25	6.81	10.45
7A	643813.575	1596529.126	11.52	11.07	11.07	8.74	2.33
8B	642997.164	1595969.647	25.79	25.49	23.55	21.26	4.23
11C	645349.364	1599787.526	23.88	23.51	20.74	21.05	2.46
12R	640990.466	1599205.972	39.79	39.48	36.69	31.80	7.68
16A	642637.393	1597186.522	24.41	24.18	21.48	17.85	6.33
21S	642126.368	1602756.547	24.13	23.93	21.39	13.52	10.41
Patapsco - Shallow							
CSW-28	641442.561	1598166.430	35.56	35.23	32.11	29.00	6.23
CSW-31	644664.678	1600500.662	24.02	23.90	21.12	19.96	3.94
CSW-33	643140.598	1601442.797	25.57	25.45	22.77	20.98	4.47
CSW-37	644963.200	1599108.262	22.04	21.84	19.16	19.11	2.73
CSW-7	643973.655	1596467.431	8.05	7.74	7.74	3.83	3.91
CSW-9	643685.642	1598170.755	31.22	30.85	27.53	25.15	5.70
CSW-10	642664.840	1597714.757	32.21	31.91	28.95	26.59	5.32
8A	643003.316	1595973.516	25.61	25.43	23.52	20.70	4.73
11R	645348.041	1599781.345	23.76	23.43	20.70	20.19	3.24
13A	643691.094	1602757.833	19.72	19.35	15.95	14.95	4.40
14R	640991.624	1599197.731	39.58	39.36	36.64	32.85	6.51
18B	644215.947	1598234.884	30.38	30.10	26.74	25.05	5.05
21D	642120.688	1602755.418	23.89	23.53	21.14	18.14	5.39
Patapsco - Deep							
CSW-34	641438.833	1598156.188	35.70	35.47	32.56	30.70	4.77
CSW-35	642576.531	1597167.435	28.02	27.82	24.69	26.50	1.32
CSW-36	641660.783	1601250.337	24.30	24.13	21.07	18.87	5.26
CSW-38	643929.086	1600999.147	26.64	26.16	22.64	22.41	3.75
CSW-39	644425.568	1598434.781	31.19	30.89	27.65	28.75	2.14
7B	643821.173	1596527.150	11.32	10.78	10.78	9.10	1.68
11A	645346.666	1599775.912	23.75	23.51	20.78	20.22	3.29

Notes:

Depths to water in feet below top of casing (TOC)

Groundwater elevations in feet above mean sea level (AMSL)

Horizontal Datum: NAD 83 Maryland State Plane

Vertical Datum: NAVD 88

Well ID	NAD83		Elevation NAVD88 (feet)			Depth to Water Sept 10, 2021	Groundwater Elevation
	Northing	Easting	Top of Casing	Top of PVC	Ground		
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CSW-27	641445.523	1598175.768	35.57	35.26	31.92	30.13	5.13
CSW-29	642684.596	1597722.308	31.32	31.20	28.16	26.30	4.90
PZ-1	644964.826	1599115.090	22.63	22.51	19.35	21.99	0.52
PZ-2	643933.022	1601006.901	25.66	25.45	22.56	18.05	7.40
PZ-3	642586.996	1602043.597	24.03	23.87	21.11	17.49	6.38
PZ-4	641654.704	1601244.735	24.38	24.20	21.25	18.65	5.55
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CSW-5	640418.877	1600881.043	47.03	46.82	46.82	42.21	4.61
CSW-32	643133.172	1601445.241	25.60	25.49	22.78	18.55	N/A
CSW-13	643662.830	1602744.431	17.81	17.26	15.25	11.20	6.06
7A	643813.575	1596529.126	11.52	11.07	11.07	6.52	4.55
8B	642997.164	1595969.647	25.79	25.49	23.55	22.21	3.28
11C	645349.364	1599787.526	23.88	23.51	20.74	21.67	1.84
12R	640990.466	1599205.972	39.79	39.48	36.69	34.02	5.46
16A	642637.393	1597186.522	24.41	24.18	21.48	19.21	4.97
21S	642126.368	1602756.547	24.13	23.93	21.39	18.07	5.86
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CSW-28	641442.561	1598166.430	35.56	35.23	32.11	31.01	4.22
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CSW-33	643140.598	1601442.797	25.57	25.45	22.77	22.82	2.63
CSW-37	644963.200	1599108.262	22.04	21.84	19.16	19.82	2.02
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CSW-9	643685.642	1598170.755	31.22	30.85	27.53	26.54	4.31
CSW-10	642664.840	1597714.757	32.21	31.91	28.95	28.29	3.62
8A	643003.316	1595973.516	25.61	25.43	23.52	21.69	3.74
11R	645348.041	1599781.345	23.76	23.43	20.70	21.39	2.04
13A	643691.094	1602757.833	19.72	19.35	15.95	16.31	3.04
14R	640991.624	1599197.731	39.58	39.36	36.64	35.20	4.16
18B	644215.947	1598234.884	30.38	30.10	26.74	26.11	3.99
21D	642120.688	1602755.418	23.89	23.53	21.14	20.43	3.10
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CSW-34	641438.833	1598156.188	35.70	35.47	32.56	32.31	3.16
CSW-35	642576.531	1597167.435	28.02	27.82	24.69	N/A	N/A
CSW-36	641660.783	1601250.337	24.30	24.13	21.07	20.82	3.31
CSW-38	643929.086	1600999.147	26.64	26.16	22.64	23.61	2.55
CSW-39	644425.568	1598434.781	31.19	30.89	27.65	29.71	1.18
7B	643821.173	1596527.150	11.32	10.78	10.78	9.75	1.03
11A	645346.666	1599775.912	23.75	23.51	20.78	21.29	2.22

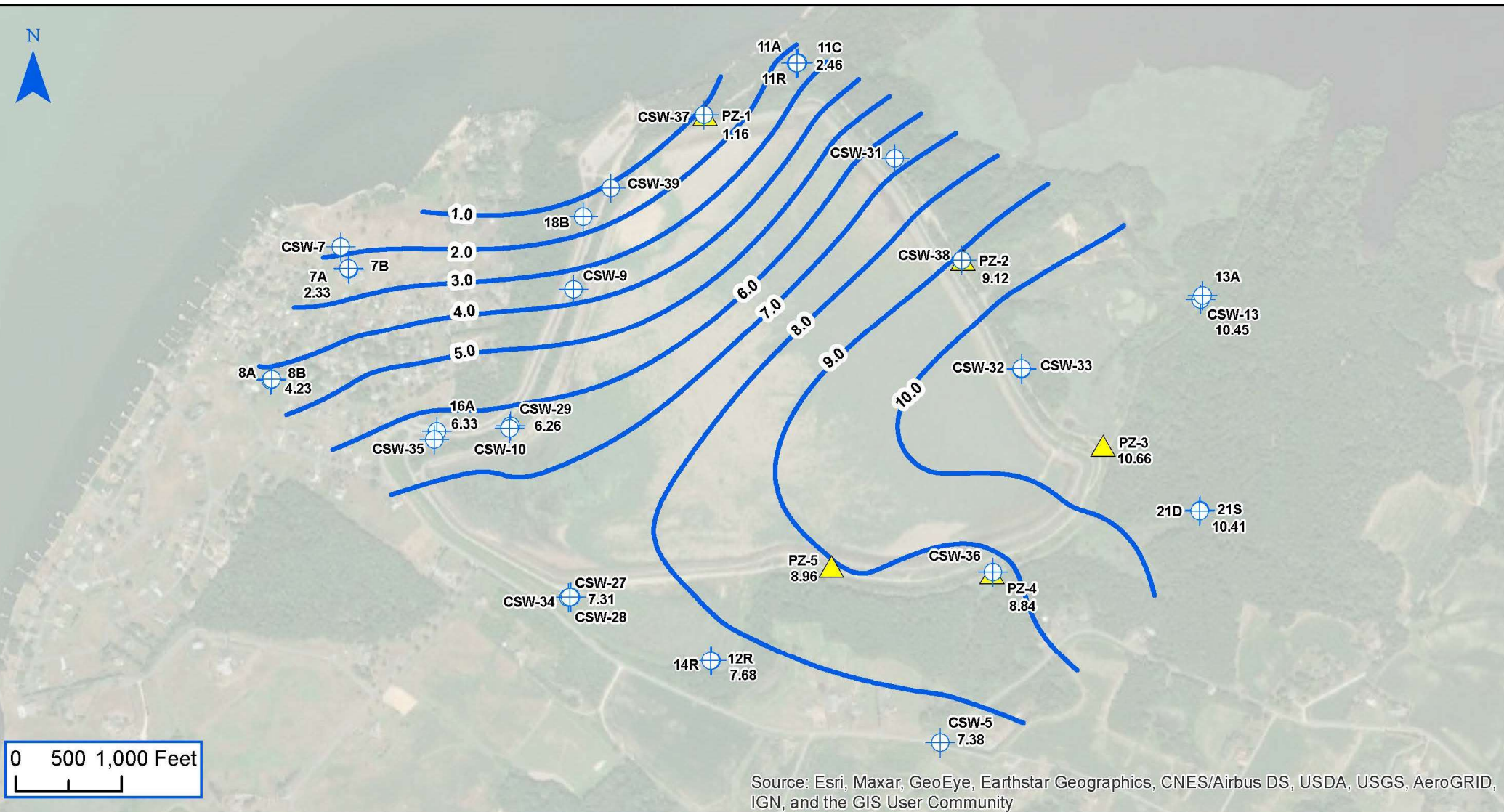
Notes:

Depths to water in feet below top of casing (TOC)

Groundwater elevations in feet above mean sea level (AMSL)

Horizontal Datum: NAD 83 Maryland State Plane

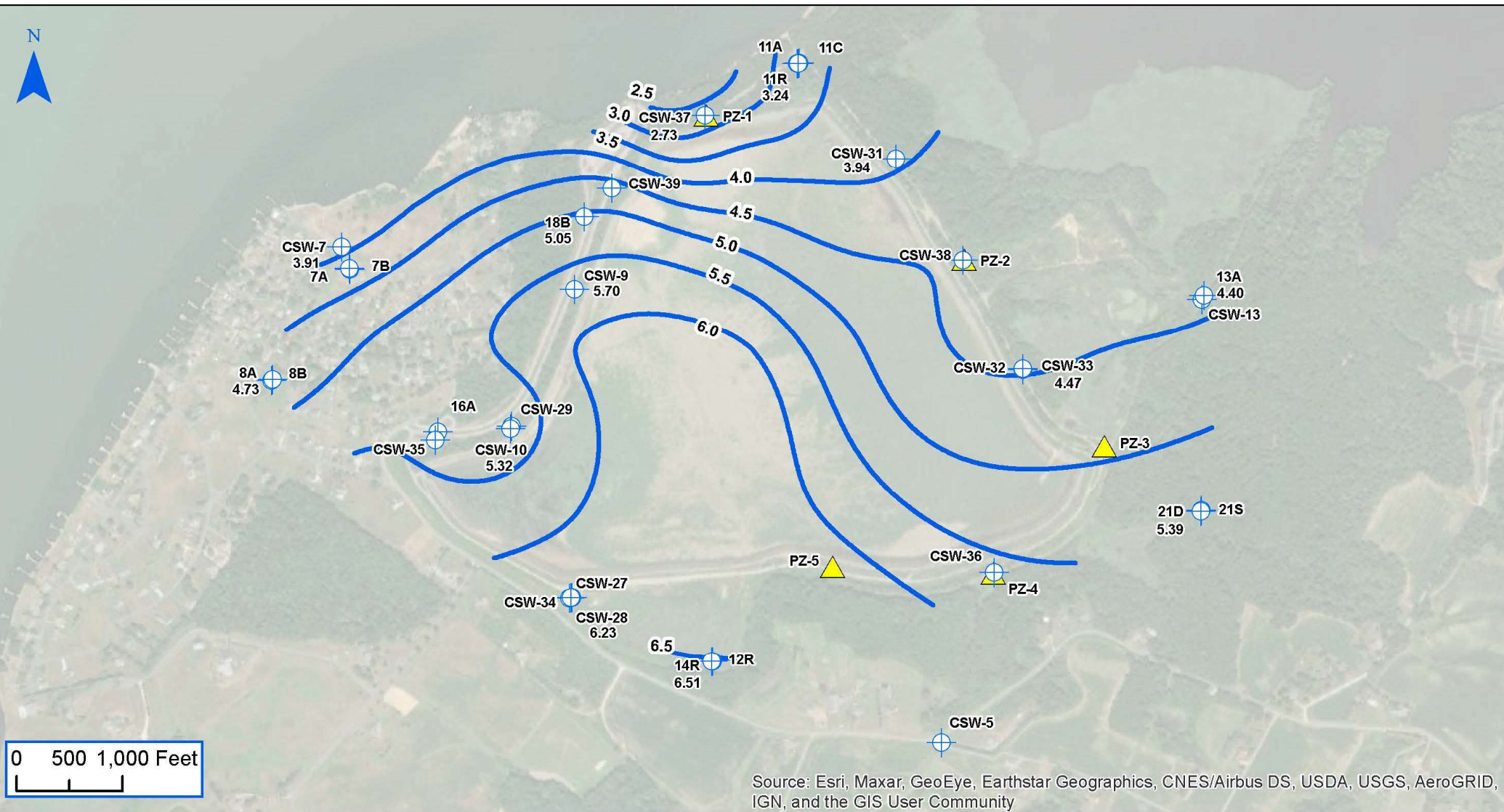
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GROUNDWATER ELEVATIONS (MAGOTHY AQUIFER), APRIL 27, 2021 2021 SUMMARY REPORT

**PEARCE CREEK CONFINED
DISPOSAL FACILITY**
UNITED STATES ARMY CORPS OF ENGINEERS
PHILADELPHIA DISTRICT
CECIL COUNTY, MARYLAND

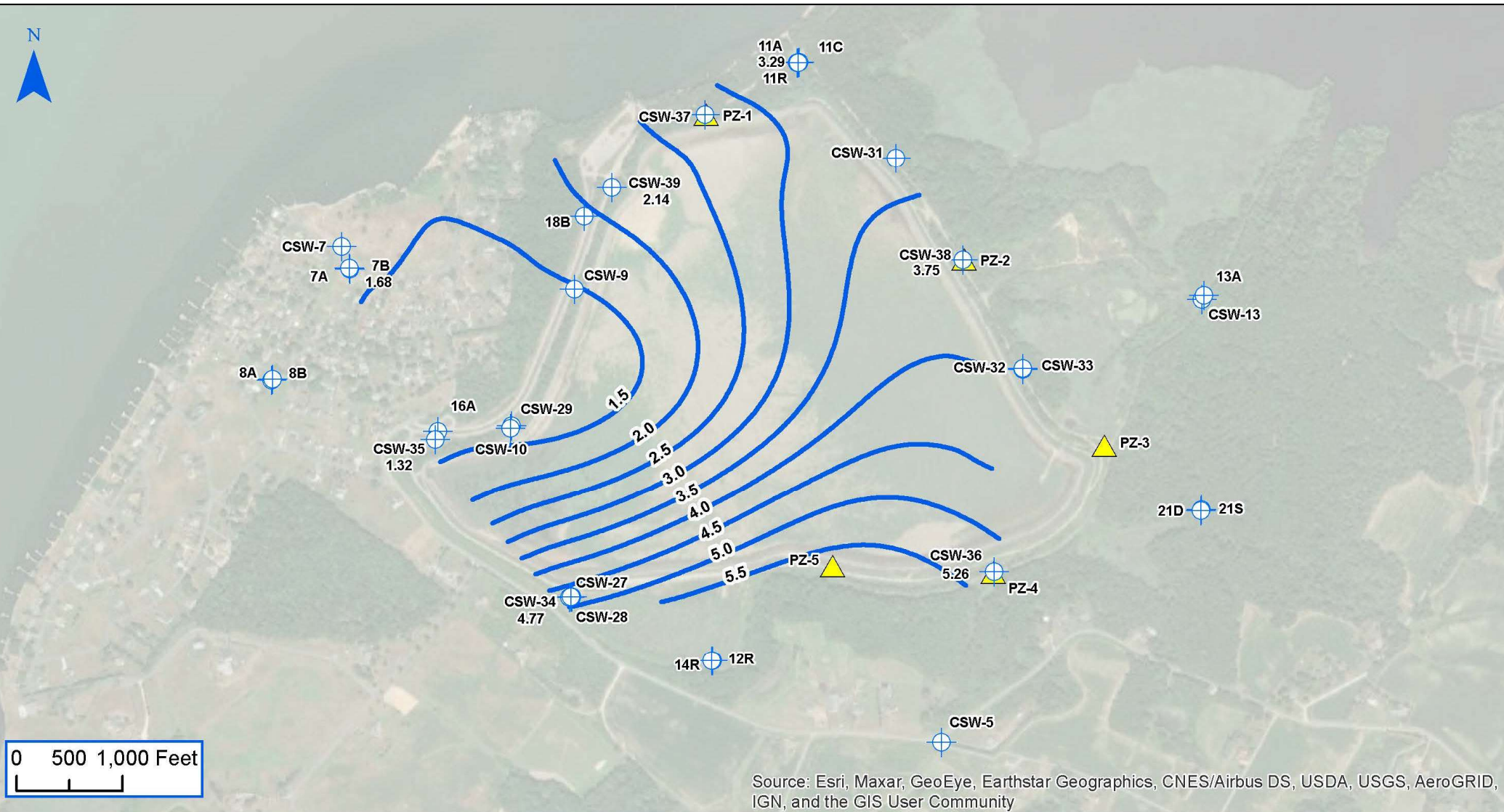
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-  PIEZOMETER WITH GROUNDWATER ELEVATION (FT/MSL; MAGOTHY AQUIFER WELLS ONLY)
-  GROUNDWATER ELEVATION CONTOUR (FT/MSL)



GROUNDWATER ELEVATIONS (UPPER PATAPSCO AQUIFER - SHALLOW), APRIL 27, 2021 2021 SUMMARY REPORT

**PEARCE CREEK CONFINED
DISPOSAL FACILITY**
UNITED STATES ARMY CORPS OF ENGINEERS
PHILADELPHIA DISTRICT
CECIL COUNTY, MARYLAND

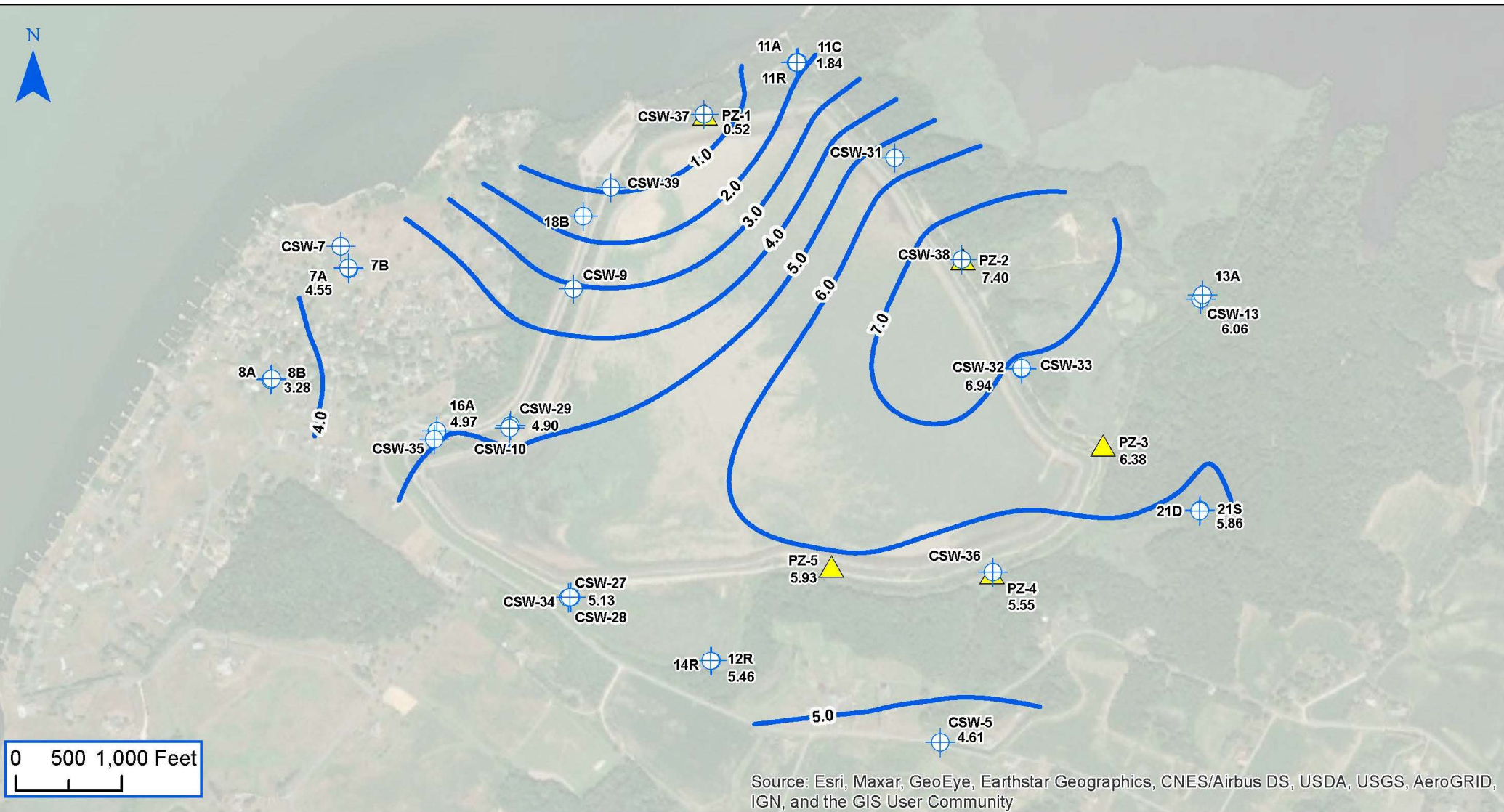
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-  PIEZOMETER WITH GROUNDWATER ELEVATION (FT/MSL; UPPER PATAPSCO SHALLOW AQUIFER WELLS ONLY)
-  GROUNDWATER ELEVATION CONTOUR (FT/MSL)



GROUNDWATER ELEVATIONS (UPPER PATAPSCO AQUIFER - DEEP), APRIL 27, 2021 2021 SUMMARY REPORT

**PEARCE CREEK CONFINED
DISPOSAL FACILITY**
UNITED STATES ARMY CORPS OF ENGINEERS
PHILADELPHIA DISTRICT
CECIL COUNTY, MARYLAND

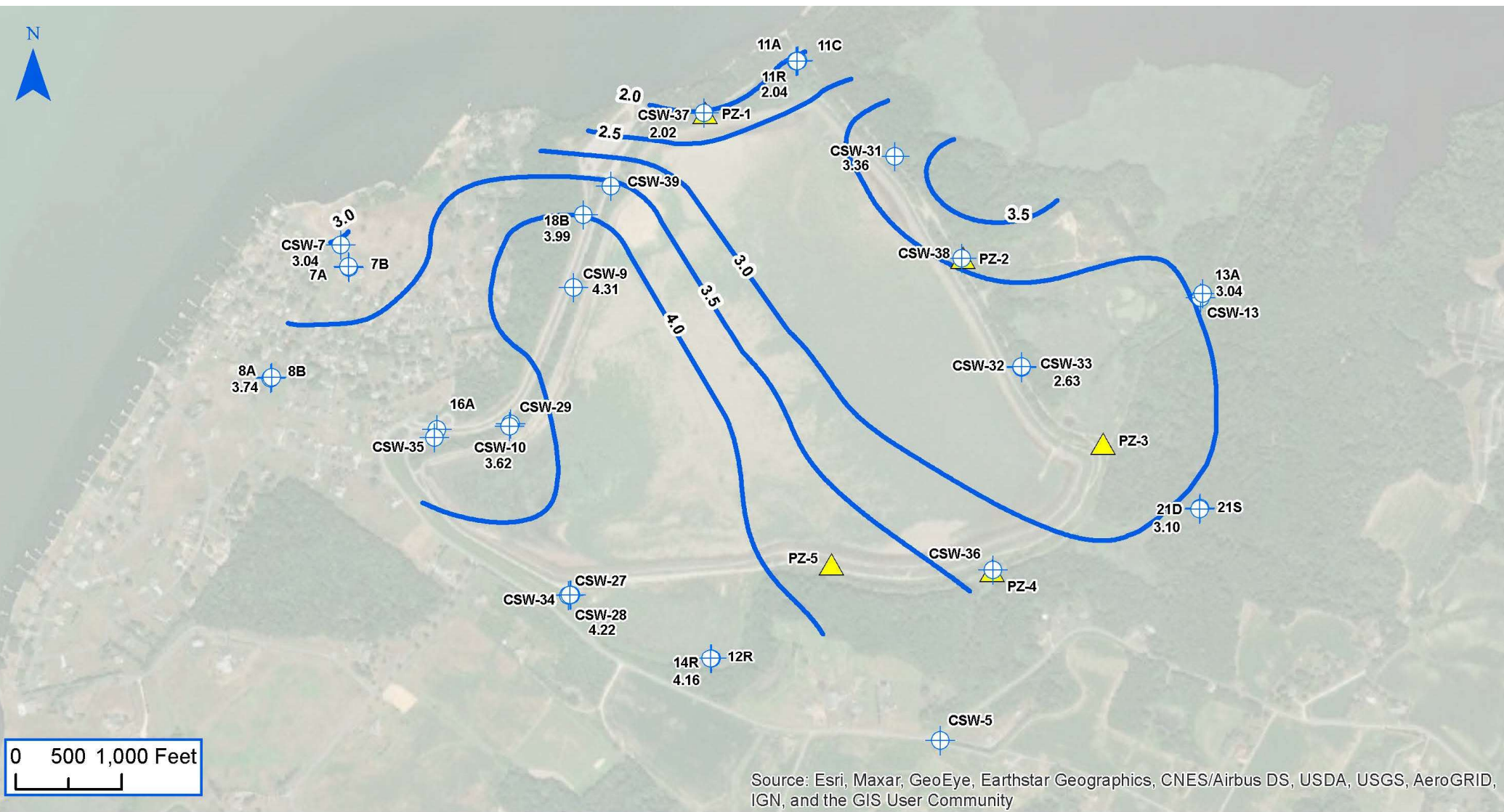
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- PIEZOMETER WITH GROUNDWATER ELEVATION (FT/MSL; UPPER PATAPSCO DEEP AQUIFER WELLS ONLY)
- GROUNDWATER ELEVATION CONTOUR (FT/MSL)



GROUNDWATER ELEVATIONS (MAGOTHY AQUIFER), SEPTEMBER 27, 2021 2021 SUMMARY REPORT

**PEARCE CREEK CONFINED
DISPOSAL FACILITY**
UNITED STATES ARMY CORPS OF ENGINEERS
PHILADELPHIA DISTRICT
CECIL COUNTY, MARYLAND

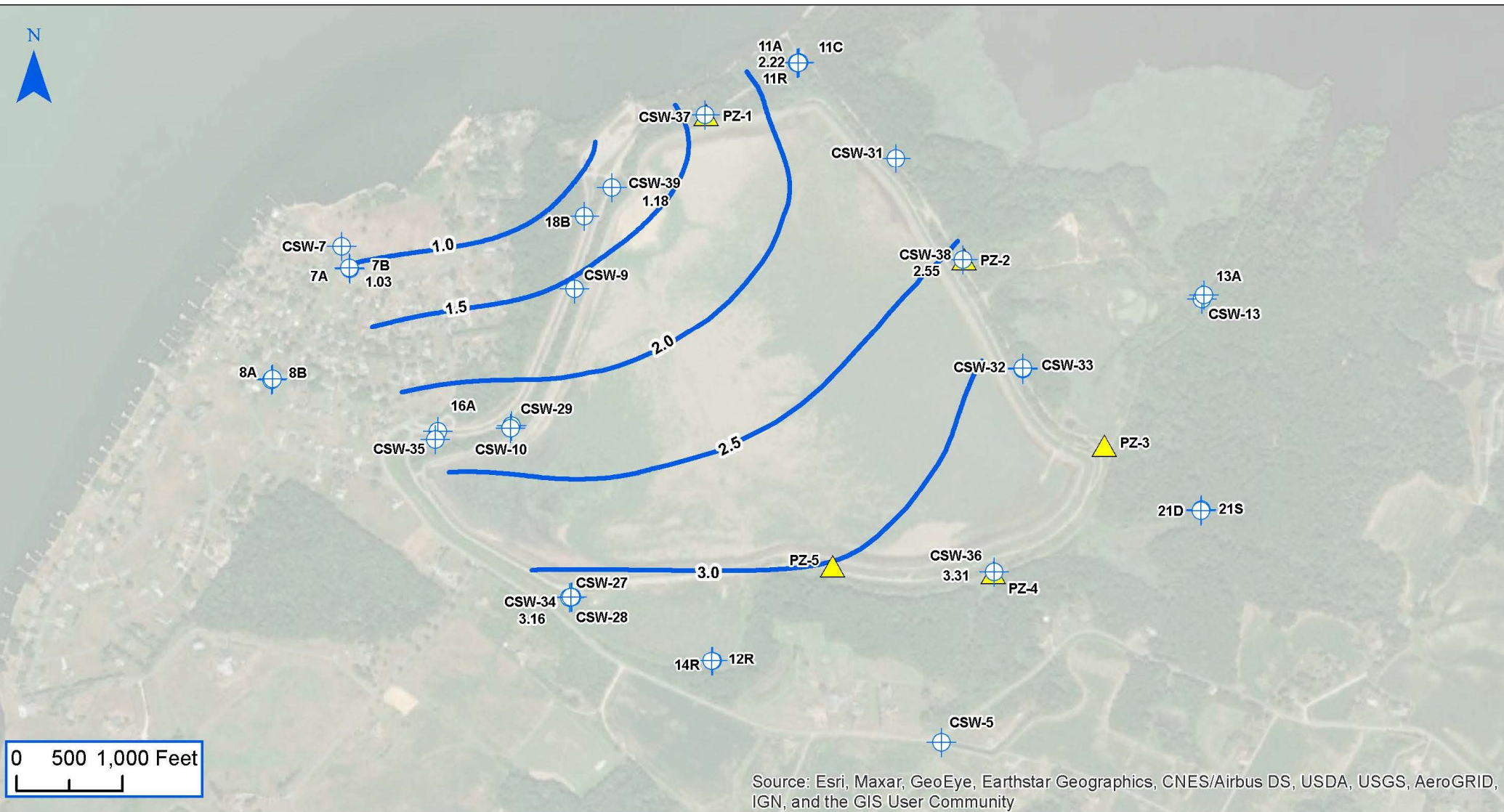
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-  PIEZOMETER WITH GROUNDWATER ELEVATION (FT/MSL; MAGOTHY AQUIFER WELLS ONLY)
-  GROUNDWATER ELEVATION CONTOUR (FT/MSL)



**GROUNDWATER ELEVATIONS (UPPER PATAPSCO AQUIFER - SHALLOW),
SEPTEMBER 27, 2021
2021 SUMMARY REPORT**

PEARCE CREEK CONFINED DISPOSAL FACILITY
UNITED STATES ARMY CORPS OF ENGINEERS
PHILADELPHIA DISTRICT
CECIL COUNTY, MARYLAND

-  MONITORING WELL WITH GROUNDWATER ELEVATION (FT/MSL; UPPER PATAPSCO SHALLOW AQUIFER WELLS ONLY)
-  PIEZOMETER WITH GROUNDWATER ELEVATION (FT/MSL; UPPER PATAPSCO SHALLOW AQUIFER WELLS ONLY)
-  GROUNDWATER ELEVATION CONTOUR (FT/MSL)



**GROUNDWATER ELEVATIONS (UPPER PATAPSCO AQUIFER - DEEP),
SEPTEMBER 27, 2021
2021 SUMMARY REPORT**

PEARCE CREEK CONFINED DISPOSAL FACILITY
UNITED STATES ARMY CORPS OF ENGINEERS
PHILADELPHIA DISTRICT
CECIL COUNTY, MARYLAND

-  MONITORING WELL WITH GROUNDWATER ELEVATION (FT/MSL; UPPER PATAPSCO DEEP AQUIFER WELLS ONLY)
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