Table 2
2H2019 Surface Water Validated Analytical Results
American Cyanamid Superfund Site
Bridgewater Township, New Jersey

						Sample Location	CB-02				CB-03				CB-04				CB-05				CB-06				CB-08				CB-09			
						Sample Date	10/10/2019				10/10/2019				10/10/2019				10/11/2019				10/11/2019				10/11/2019				10/11/2019			
						N=Normal, FD=Field Duplicate	N				N				N				N				N				N				N			
Parameter	Unit	**NJDEP SWQC HH[1]**	**NJDEP SWQC ECO[2]**	NWQC HH1[3]	**NWQC HH2[4]**	*NJGWQS[5]*	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL
Volatile Organic Compounds																																		
Benzene	ug/L	0.15	NS	2.1	58	1	< 1	U	0.2	1	< 1	U	0.2	1	< 1	U	0.2	1	*1.2*		0.2	1	*1.3*		0.2	1	< 1	U	0.2	1	< 1	U	0.2	1
Naphthalene	ug/L	NS	NS	NS	NS	300	2.8		0.88	1	7.2		0.88	1	< 1	U	0.88	1	< 1	U	0.9	1	< 1	U	0.9	1	< 1	U	0.9	1	< 1	U	0.9	1
Total Metals																																		
Aluminum	ug/L	NS	NS	NS	NS	200	NA				NA				NA				NA				NA				NA				NA			
Arsenic	ug/L	0.017	NS	0.018	0.14	3	NA				NA				NA				NA				NA				NA				NA			
Barium	ug/L	2000	NS	1000	NS	6000	NA				NA				NA				NA				NA				NA				NA			
Cadmium	ug/L	3.4	NS	5	NS	4	NA				NA				NA				NA				NA				NA				NA			
Chromium	ug/L	92	NS	100	NS	70	NA				NA				NA				NA				NA				NA				NA			
Cobalt	ug/L	NS	NS	NS	NS	100	NA				NA				NA				NA				NA				NA				NA			
Copper	ug/L	1300	NS	1300	NS	1300	NA				NA				NA				NA				NA				NA				NA			
Iron	ug/L	NS	NS	NS	NS	300	NA				NA				NA				NA				NA				NA				NA			
Lead	ug/L	5	NS	NS	NS	5	NA				NA				NA				NA				NA				NA				NA			
Manganese	ug/L	NS	NS	50	100	50	NA				NA				NA				NA				NA				NA				NA			
Mercury	ug/L	0.05	NS	NS	NS	2	NA				NA				NA				NA				NA				NA				NA			
Vanadium	ug/L	NS	NS	NS	NS	NS	NA				NA				NA				NA				NA				NA				NA			
Zinc	ug/L	7400	NS	7400	26000	2000	NA				NA				NA				NA				NA				NA				NA			
Dissolved Metals																																		
Aluminum	ug/L	NS	NS	NS	NS	200	< 40	U	18.8	40	< 40	U	18.8	40	< 40	U	18.8	40	< 40	U	19	40	< 40	U	19	40	< 40	U	19	40	< 40	U	19	40
Arsenic	ug/L	NS	150	NS	NS	3	1.2	J	0.73	2	0.83	J	0.73	2	1.2	J	0.73	2	< 2	U	0.7	2	< 2	U	0.7	2	< 2	U	0.7	2	< 2	U	0.7	2
Barium	ug/L	NS	NS	NS	NS	6000	47.3		1.2	4	45.1		1.2	4	38.2		1.2	4	56.3		1.2	4	57.3		1.2	4	56.8		1.2	4	61.7		1.2	4
Cadmium	ug/L	NS	CALC	NS	NS	4	< 2	U	0.81	2	< 2	U	0.81	2	< 2	U	0.81	2	< 2	U	0.8	2	< 2	U	0.8	2	< 2	U	0.8	2	< 2	U	0.8	2
Chromium	ug/L	NS	NS	NS	NS	70	< 4	U	2.3	4	< 4	U	2.3	4	< 4	U	2.3	4	< 4	U	2.3	4	< 4	U	2.3	4	< 4	U	2.3	4	< 4	U	2.3	4
Cobalt	ug/L	NS	NS	NS	NS	100	< 4	U	1.6	4	< 4	U	1.6	4	< 4	U	1.6	4	< 4	U	1.6	4	< 4	U	1.6	4	< 4	U	1.6	4	< 4	U	1.6	4
Copper	ug/L	NS	CALC	NS	NS	1300	< 4	U	2	4	< 4	U	2	4	< 4	U	2	4	< 4	U	2	4	< 4	U	2	4	< 4	U	2	4	< 4	U	2	4
Iron	ug/L	NS	NS	NS	NS	300	< 120	U	51.1	120	< 120	U	51.1	120	< 120	U	51.1	120	< 120	U	51	120	< 120	U	51	120	< 120	U	51	120	< 120	U	51	120
Lead	ug/L	NS	5.4	NS	NS	5	< 1.2	U	0.55	1.2	< 1.2	U	0.55	1.2	< 1.2	U	0.55	1.2	< 1.2	U	0.6	1.2	< 1.2	U	0.6	1.2	< 1.2	U	0.6	1.2	< 1.2	U	0.6	1.2
Manganese	ug/L	NS	NS	NS	NS	50	< 8	U	2.9	8	< 8	U	2.9	8	3.6	J	2.9	8	*170*		2.9	8	*288*		2.9	8	3	J	2.9	8	< 8	U	2.9	8
Mercury	ug/L	NS	0.77	NS	NS	2	< 0.2	U	0.12	0.2	< 0.2	U	0.12	0.2	< 0.2	U	0.12	0.2	< 0.2	U	0.1	0.2	< 0.2	U	0.1	0.2	< 0.2	U	0.1	0.2	< 0.2	U	0.1	0.2
Vanadium	ug/L	NS	NS	NS	NS	NS	< 4	U	1.1	4	1.3	J	1.1	4	1.6	J	1.1	4	< 4	U	1.1	4	< 4	U	1.1	4	< 4	U	1.1	4	< 4	U	1.1	4
Zinc	ug/L	NS	CALC	NS	NS	2000	< 16	U	11.1	16	< 16	U	11.1	16	< 16	U	11.1	16	< 16	U	11	16	< 16	U	11	16	< 16	U	11	16	< 16	U	11	16
General Chemistry																																		
Hardness	mg/L	NS	NS	NS	NS	NS	134		5	5	134		5	5	132		5	5	192		10	10	192		10	10	152		10	10	156		10	10
Methyl Mercury, Dissolved	ng/l	NS	NS	NS	NS	NS	0.051	J	0.02	0.1	0.048	J	0.02	0.1	0.064		0.02	0.1	NA				NA				NA				NA			
Methyl Mercury, Total	ng/l	NS	NS	NS	NS	NS	NA				NA				NA				NA				NA				NA				NA			
Total Suspended Solids	mg/L	NS	NS	NS	NS	NS	4.4		0.4	0.4	28		0.53	0.5	8.2		0.4	0.4	5.5		4	4	7.9		4	4	13.4		4	4	6.6		4	4

Checked by: ANL 11/27/2019

Table 2
2H2019 Surface Water Validated Analytical Results
American Cyanamid Superfund Site
Bridgewater Township, New Jersey

						Sample Location	CB-10				RR-01				MB-01				RR-03				RR-03				RR-04			
						Sample Date	10/11/2019				10/9/2019				10/9/2019				10/9/2019				10/9/2019				10/10/2019			
						N=Normal, FD=Field Duplicate	N				N				N				N				FD				N			
Parameter	Unit	**NJDEP SWQC HH[1]**	**NJDEP SWQC ECO[2]**	NWQC HH1[3]	**NWQC HH2[4]**	*NJGWQS[5]*	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL
Volatile Organic Compounds																														
Benzene	ug/L	0.15	NS	2.1	58	1	< 1	U	0.2	1	< 1	U	0.2	1	< 1	U	0.2	1	< 1	U	0.2	1	< 1	U	0.2	1	< 1	U	0.2	1
Naphthalene	ug/L	NS	NS	NS	NS	300	< 1	U	0.88	1	< 1	U	0.88	1	< 1	U	0.88	1	< 1	U	0.88	1	< 1	U	0.88	1	< 1	U	0.88	1
Total Metals																														
Aluminum	ug/L	NS	NS	NS	NS	200	NA				68.9		18.8	40	49.5		18.8	40	81.2		18.8	40	86.8		18.8	40	55.7		18.8	40
Arsenic	ug/L	0.017	NS	0.018	0.14	3	NA				**1.1**	J	0.73	2	**1.5**	J	0.73	2	< 2	U	0.73	2	< 2	U	0.73	2	**1.1**	J	0.73	2
Barium	ug/L	2000	NS	1000	NS	6000	NA				36		1.2	4	48.8		1.2	4	35.3		1.2	4	36.1		1.2	4	39.2		1.2	4
Cadmium	ug/L	3.4	NS	5	NS	4	NA				< 2	U	0.81	2	< 2	U	0.81	2	< 2	U	0.81	2	< 2	U	0.81	2	< 2	U	0.81	2
Chromium	ug/L	92	NS	100	NS	70	NA				< 4	U	2.3	4	< 4	U	2.3	4	< 4	U	2.3	4	< 4	U	2.3	4	< 4	U	2.3	4
Cobalt	ug/L	NS	NS	NS	NS	100	NA				< 4	U	1.6	4	< 4	U	1.6	4	< 4	U	1.6	4	< 4	U	1.6	4	< 4	U	1.6	4
Copper	ug/L	1300	NS	1300	NS	1300	NA				< 4	U	2	4	< 4	U	2	4	< 4	U	2	4	< 4	U	2	4	< 4	U	2	4
Iron	ug/L	NS	NS	NS	NS	300	NA				125		51.1	120	96.1	J	51.1	120	163		51.1	120	178		51.1	120	181		51.1	120
Lead	ug/L	5	NS	NS	NS	5	NA				< 1.2	U	0.55	1.2	< 1.2	U	0.55	1.2	< 1.2	U	0.55	1.2	< 1.2	U	0.55	1.2	< 1.2	U	0.55	1.2
Manganese	ug/L	NS	NS	50	100	50	NA				29.4		2.9	8	34		2.9	8	33.2		2.9	8	35.7		2.9	8	38.7		2.9	8
Mercury	ug/L	0.05	NS	NS	NS	2	NA				< 0.2	U	0.12	0.2	< 0.2	U	0.12	0.2	< 0.2	U	0.12	0.2	< 0.2	U	0.12	0.2	< 0.2	U	0.12	0.2
Vanadium	ug/L	NS	NS	NS	NS	NS	NA				< 4	U	1.1	4	1.6	J	1.1	4	< 4	U	1.1	4	< 4	U	1.1	4	< 4	U	1.1	4
Zinc	ug/L	7400	NS	7400	26000	2000	NA				< 16	U	11.1	16	< 16	U	11.1	16	< 16	U	11.1	16	< 16	U	11.1	16	< 16	U	11.1	16
Dissolved Metals																														
Aluminum	ug/L	NS	NS	NS	NS	200	< 40	U	18.8	40	< 40	U	18.8	40	< 40	U	18.8	40	< 40	U	18.8	40	< 40	U	18.8	40	< 40	U	18.8	40
Arsenic	ug/L	NS	150	NS	NS	3	0.85	J	0.73	2	1	J	0.73	2	1.8	J	0.73	2	< 2	U	0.73	2	< 2	U	0.73	2	< 2	U	0.73	2
Barium	ug/L	NS	NS	NS	NS	6000	54.8		1.2	4	32.2		1.2	4	44.4		1.2	4	31.2		1.2	4	30		1.2	4	32.3		1.2	4
Cadmium	ug/L	NS	CALC	NS	NS	4	< 2	U	0.81	2	< 2	U	0.81	2	< 2	U	0.81	2	< 2	U	0.81	2	< 2	U	0.81	2	< 2	U	0.81	2
Chromium	ug/L	NS	NS	NS	NS	70	< 4	U	2.3	4	< 4	U	2.3	4	< 4	U	2.3	4	< 4	U	2.3	4	< 4	U	2.3	4	< 4	U	2.3	4
Cobalt	ug/L	NS	NS	NS	NS	100	< 4	U	1.6	4	< 4	U	1.6	4	< 4	U	1.6	4	< 4	U	1.6	4	< 4	U	1.6	4	< 4	U	1.6	4
Copper	ug/L	NS	CALC	NS	NS	1300	< 4	U	2	4	< 4	U	2	4	< 4	U	2	4	< 4	U	2	4	< 4	U	2	4	< 4	U	2	4
Iron	ug/L	NS	NS	NS	NS	300	< 120	U	51.1	120	< 120	U	51.1	120	< 120	U	51.1	120	< 120	U	51.1	120	< 120	U	51.1	120	< 120	U	51.1	120
Lead	ug/L	NS	5.4	NS	NS	5	< 1.2	U	0.55	1.2	< 1.2	U	0.55	1.2	< 1.2	U	0.55	1.2	< 1.2	U	0.55	1.2	< 1.2	U	0.55	1.2	< 1.2	U	0.55	1.2
Manganese	ug/L	NS	NS	NS	NS	50	*205*		2.9	8	17.4		2.9	8	22.4		2.9	8	17.6		2.9	8	16.6		2.9	8	< 8	U	2.9	8
Mercury	ug/L	NS	0.77	NS	NS	2	< 0.2	U	0.12	0.2	< 0.2	U	0.12	0.2	< 0.2	U	0.12	0.2	< 0.2	U	0.12	0.2	< 0.2	U	0.12	0.2	< 0.2	U	0.12	0.2
Vanadium	ug/L	NS	NS	NS	NS	NS	< 4	U	1.1	4	< 4	U	1.1	4	1.3	J	1.1	4	< 4	U	1.1	4	< 4	U	1.1	4	< 4	U	1.1	4
Zinc	ug/L	NS	CALC	NS	NS	2000	< 16	U	11.1	16	< 16	U	11.1	16	< 16	U	11.1	16	< 16	U	11.1	16	< 16	U	11.1	16	< 16	U	11.1	16
General Chemistry																														
Hardness	mg/L	NS	NS	NS	NS	NS	152		10	10	108		10	10	160		10	10	100		5	5	100		5	5	104		10	10
Methyl Mercury, Dissolved	ng/l	NS	NS	NS	NS	NS	NA				0.049	J	0.02	0.1	NA				0.025	J	0.02	0.1	0.025	J	0.02	0.05	NA			
Methyl Mercury, Total	ng/l	NS	NS	NS	NS	NS	NA				0.035	J	0.02	0.1	NA				0.035	J	0.02	0.1	0.038	J	0.02	0.05	NA			
Total Suspended Solids	mg/L	NS	NS	NS	NS	NS	4.5		4	4	< 4	U	4	4	< 4	U	4	4	< 4	U	4	4	< 4	U	4	4	2.4		0.4	0.4

Checked by: ANL 11/27/2019

Table 2
2H2019 Surface Water Validated Analytical Results
American Cyanamid Superfund Site
Bridgewater Township, New Jersey

						Sample Location	RR-05				RR-06				MS-01				RR-09				RR-10			
						Sample Date	10/10/2019				10/10/2019				10/10/2019				10/10/2019				10/10/2019			
						N=Normal, FD=Field Duplicate	N				N				N				N				N			
Parameter	Unit	**NJDEP SWQC HH[1]**	**NJDEP SWQC ECO[2]**	NWQC HH1[3]	**NWQC HH2[4]**	*NJGWQS[5]*	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL	Result	Qual	MDL	RL
Volatile Organic Compounds																										
Benzene	ug/L	0.15	NS	2.1	58	1	< 1	U	0.2	1	< 1	U	0.2	1	< 1	U	0.2	1	< 1	U	0.2	1	< 1	U	0.2	1
Naphthalene	ug/L	NS	NS	NS	NS	300	< 1	U	0.88	1	< 1	U	0.88	1	< 1	U	0.88	1	< 1	U	0.9	1	< 1	U	0.9	1
Total Metals																										
Aluminum	ug/L	NS	NS	NS	NS	200	64		18.8	40	37.6	J	18.8	40	129		18.8	40	118		19	40	65.3		19	40
Arsenic	ug/L	0.017	NS	0.018	0.14	3	**1.4**	J	0.73	2	**0.79**	J	0.73	2	**0.95**	J	0.73	2	< 2	U	0.7	2	< 2	U	0.7	2
Barium	ug/L	2000	NS	1000	NS	6000	40.2		1.2	4	34.2		1.2	4	53.1		1.2	4	30.3		1.2	4	27.9		1.2	4
Cadmium	ug/L	3.4	NS	5	NS	4	< 2	U	0.81	2	< 2	U	0.81	2	< 2	U	0.81	2	< 2	U	0.8	2	< 2	U	0.8	2
Chromium	ug/L	92	NS	100	NS	70	< 4	U	2.3	4	< 4	U	2.3	4	< 4	U	2.3	4	< 4	U	2.3	4	< 4	U	2.3	4
Cobalt	ug/L	NS	NS	NS	NS	100	< 4	U	1.6	4	< 4	U	1.6	4	< 4	U	1.6	4	< 4	U	1.6	4	< 4	U	1.6	4
Copper	ug/L	1300	NS	1300	NS	1300	< 4	U	2	4	2.4	J	2	4	< 4	U	2	4	< 4	U	2	4	< 4	U	2	4
Iron	ug/L	NS	NS	NS	NS	300	232		51.1	120	128		51.1	120	*330*		51.1	120	165		51	120	132		51	120
Lead	ug/L	5	NS	NS	NS	5	< 1.2	U	0.55	1.2	< 1.2	U	0.55	1.2	0.55	J	0.55	1.2	< 1.2	U	0.6	1.2	< 1.2	U	0.6	1.2
Manganese	ug/L	NS	NS	50	100	50	*50.7*		2.9	8	46.6		2.9	8	*50.4*		2.9	8	19.4		2.9	8	22		2.9	8
Mercury	ug/L	0.05	NS	NS	NS	2	< 0.2	U	0.12	0.2	< 0.2	U	0.12	0.2	< 0.2	U	0.12	0.2	< 0.2	U	0.1	0.2	< 0.2	U	0.1	0.2
Vanadium	ug/L	NS	NS	NS	NS	NS	< 4	U	1.1	4	< 4	U	1.1	4	1.2	J	1.1	4	< 4	U	1.1	4	< 4	U	1.1	4
Zinc	ug/L	7400	NS	7400	26000	2000	< 16	U	11.1	16	16.6		11.1	16	< 16	U	11.1	16	< 16	U	11	16	< 16	U	11	16
Dissolved Metals																										
Aluminum	ug/L	NS	NS	NS	NS	200	< 40	U	18.8	40	< 40	U	18.8	40	< 40	U	18.8	40	< 40	U	19	40	< 40	U	19	40
Arsenic	ug/L	NS	150	NS	NS	3	< 2	U	0.73	2	< 2	U	0.73	2	0.83	J	0.73	2	< 2	U	0.7	2	< 2	U	0.7	2
Barium	ug/L	NS	NS	NS	NS	6000	33.7		1.2	4	29.9		1.2	4	50.2		1.2	4	26.3		1.2	4	26.3		1.2	4
Cadmium	ug/L	NS	CALC	NS	NS	4	< 2	U	0.81	2	< 2	U	0.81	2	< 2	U	0.81	2	< 2	U	0.8	2	< 2	U	0.8	2
Chromium	ug/L	NS	NS	NS	NS	70	< 4	U	2.3	4	< 4	U	2.3	4	< 4	U	2.3	4	< 4	U	2.3	4	< 4	U	2.3	4
Cobalt	ug/L	NS	NS	NS	NS	100	< 4	U	1.6	4	< 4	U	1.6	4	< 4	U	1.6	4	< 4	U	1.6	4	< 4	U	1.6	4
Copper	ug/L	NS	CALC	NS	NS	1300	< 4	U	2	4	< 4	U	2	4	< 4	U	2	4	< 4	U	2	4	< 4	U	2	4
Iron	ug/L	NS	NS	NS	NS	300	< 120	U	51.1	120	< 120	U	51.1	120	< 120	U	51.1	120	< 120	U	51	120	< 120	U	51	120
Lead	ug/L	NS	5.4	NS	NS	5	< 1.2	U	0.55	1.2	< 1.2	U	0.55	1.2	< 1.2	U	0.55	1.2	< 1.2	U	0.6	1.2	< 1.2	U	0.6	1.2
Manganese	ug/L	NS	NS	NS	NS	50	< 8	U	2.9	8	< 8	U	2.9	8	< 8	U	2.9	8	< 8	U	2.9	8	< 8	U	2.9	8
Mercury	ug/L	NS	0.77	NS	NS	2	< 0.2	U	0.12	0.2	< 0.2	U	0.12	0.2	< 0.2	U	0.12	0.2	< 0.2	U	0.1	0.2	< 0.2	U	0.1	0.2
Vanadium	ug/L	NS	NS	NS	NS	NS	< 4	U	1.1	4	< 4	U	1.1	4	< 4	U	1.1	4	< 4	U	1.1	4	< 4	U	1.1	4
Zinc	ug/L	NS	CALC	NS	NS	2000	< 16	U	11.1	16	12.6	J	11.1	16	< 16	U	11.1	16	< 16	U	11	16	< 16	U	11	16
General Chemistry																										
Hardness	mg/L	NS	NS	NS	NS	NS	106		5	5	110		5	5	106		5	5	92		5	5	92		5	5
Methyl Mercury, Dissolved	ng/l	NS	NS	NS	NS	NS	0.024	J	0.02	0.05	NA				NA				NA				NA			
Methyl Mercury, Total	ng/l	NS	NS	NS	NS	NS	0.038	J	0.02	0.05	NA				NA				NA				NA			
Total Suspended Solids	mg/L	NS	NS	NS	NS	NS	3.4		0.4	0.4	3		0.4	0.4	1.8		0.4	0.4	1.7		0.4	0.4	2.1		0.4	0.4

Checked by: ANL 11/27/2019

2H2019 Surface Water Validated Analytical Results
American Cyanamid Superfund Site
Bridgewater Township, New Jersey

Notes:

1. NJDEP SWQC HH is the New Jersey Department of Environmental Protection Surface Water Quality Criteria, Fresh Water (FW2) Criteria for Human Health in ug/L. Compared against VOCs and Total Metals results only.
2. NJDEP SWQC ECO is the New Jersey Department of Environmental Protection Surface Water Quality Criteria, Fresh Water (FW2) Criteria for Aquatic Chronic in ug/L. Compared against Dissolved Metals results only.
3. NWQC HH1 is the National Recommended Water Quality Criteria for Human Health for the consumption of water + organism in ug/L. Maximum Contaminant Level used for cadmium and chromium as specified in the NWQC table. Compared against VOCs and Total Metals results only.
4. NWQC HH2 is the National Recommended Water Quality Criteria for Human Health for the consumption of organism. Mercury and methyl mercury do not have listed surface water criteria, although a fish tissue target level has been set. Compared against VOCs and Total Metals results only.
5. NJGWQS is the New Jersey Groundwater Quality Standards (N.J.A.C. 7:9C).
6. Cuckel's Brook samples are only compared to NJDEP SWQC ECO and NJGWQS.
7. Exceedances of NWQC HH1 are shown underlined. Exceedances of NJGWQS are shown in *italics*. Exceedances of any of the other three screening levels (NJDEP SWQC HH, NJDEP SWQC ECO, NWQC HH2) are shown in **bold**.

Abbreviations:

CALC = calculated standard
MDL = method detection limit
NA = not analyzed
NS = standard not available
Qual = qualifier
RL = reporting limit
Units: mg/L = milligrams per liter; ug/L = micrograms per liter; ng/L = nanograms per liter

Qualifiers:

J = Estimated Result
U = Not Detected Above RL