ATTACHMENT 2

PFAS GROUNDWATER MONITORING RESULTS COLLECTED BY GOLDER
OCTOBER 2016 + APRIL 2017

Attachment Table 2-1
September-October 2016 Semi-Annual Monitoring Program - Summary of Detected PFCs
Delaware Sand & Gravel Superfund Site
New Castle, Delaware

			Sample ID	DDA-05			DDA-01			DDA-02			DDA-03			DDA-07-US			DDA-10-US			DDA-11-LS			DDA-11-US			DDA-12-US			DDA-15-US			DGC-8S			DGC-8D			DGC-10D			DGC-10S		
			Sample Date	9/27/2016			9/27/2016			9/28/2016			9/29/2016			10/10/2016			10/5/2016			9/27/2016			9/27/2016			9/29/2016			10/6/2016			10/6/2016			10/6/2016			9/29/2016			9/29/2016		
			N=Normal, FD=Field Duplicate	N			N			N			N			N			N			N			N			N			N			N			N			N			N		
Parameter	Unit	CAS	HA	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Perfluorohexanoic acid	ng/l	307-24-4	NE	29	J-	1	29		1	25		1	61		1	25		1	43	J	1	25		1	27		1	60		1	21		1	31	J-	1	13		1	21		1	20		1
Perfluoroheptanoic acid	ng/l	375-85-9	NE	13		1	22		1	22	J-	1	48	J-	1	16		1	23	J	1	20	J+	1	23		1	34		1	17		1	8		1	8		1	13		1	13		1
Perfluorooctanoic acid (PFOA)	ng/l	335-67-1	70	76	J-	1	180		1	150		1	600		10	150		1	180	J	1	140		1	150		1	230		1	200		1	34		1	49		1	110		1	38		1
Perfluorononanoic acid	ng/l	375-95-1	NE	2	J	1	10		1	12		1	12		1	9		1	7	J	1	10	J	1	13		1	13		1	5	J+	1	5		1	3	J+	1	3		1	13		1
Perfluorodecanoic acid	ng/l	335-76-2	NE		U	1	2	J+	1	1	J	1	7		1	1	J	1	2	J	1	2	J+	1	3		1	2	J	1	1	J+	1	2		1	1	J+	1	5		1	12		1
Perfluoroundecanoic acid	ng/l	2058-94-8	NE		U	2		U	2		U	2		UJ	2		U	2		UJ	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2	4	J	2
Perfluorododecanoic acid	ng/l	307-55-1	NE		UJ	3		U	3		U	3		UJ	3		U	3		UJ	3		U	3		U	3		U	3		U	3		U	3		U	3		U	3		U	3
Perfluorotridecanoic acid	ng/l	72629-94-8	NE		UJ	2		U	2		U	2		UJ	2		U	2		UJ	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2
Perfluorotetradecanoic acid	ng/l	376-06-7	NE		UJ	3		U	3		U	3		UJ	3		U	3		UJ	3		U	3		U	3		U	3		U	3		U	3		U	3		U	3		U	3
Perfluorobutane Sulfonate	ng/l	29420-43-3	NE		UJ	4		UJ	4	6	J	4		U	4		U	4		UJ	4		UJ	4		UJ	4		U	4		U	4		U	4		U	4		U	4		U	4
Perfluorohexane Sulfonate	ng/l	108427-53-8	NE		U	4	41		4	19		4	73		4	21		4	53	J	4	14	J+	4	7	J	4	25		4	26		4		U	4	17		4	35		4	18		4
Perfluorooctane Sulfonate (PFOS)	ng/l	1763-23-1	70	7	J	5	29		5	18		5	64		5	19		5	16	J+	5	14	J	5	23		5	19		5	22		5		U	5	12		5	24		5	15		5
N-methyl perfluorooctanesulfonamidoacetic Acid	ng/l	2355-31-9	NE		U	4		U	4		UJ	4	4	J	4		U	4		UJ	4		U	4		U	4		UJ	4		U	4		U	4		U	4		UJ	4		UJ	4
N-ethyl perfluorooctanesulfonamidoacetic Acid	ng/l	2991-50-6	NE		UJ	5		UJ	5		U	5		UJ	5		U	5		UJ	5		UJ	5		UJ	5		U	5		U	5		U	5		U	5		UJ	5		UJ	5
Total PFOA + PFOS	ng/l	NA	70	83			209			168			664			169			196			154			173			249			222			34			61			134			53		

Attachment Table 2-1 (continued)
September-October 2016 Semi-Annual Monitoring Program - Summary of Detected PFCs
Delaware Sand & Gravel Superfund Site
New Castle, Delaware

			Sample ID	DDA-16-US			DDA-17			DGC-2S			DGC-5			DGC-5			DGC-7S			MHW-1D			DGC-11D			DGC-11S			RT-1-UP			UPA-01			UPA-02D			UPA-02S			UPA-03D		
			Sample Date	9/27/2016			9/28/2016			9/27/2016			10/10/2016			10/10/2016			10/10/2016			10/6/2016			10/3/2016			10/3/2016			10/5/2016			10/6/2016			9/29/2016			9/29/2016			10/3/2016		
			N=Normal, FD=Field Duplicate	N			N			N			FD			N			N			N			N			N			N			N			N			N			FD		
Parameter	Unit	CAS	HA	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Perfluorohexanoic acid	ng/l	307-24-4	NE	29		1	57		1	34		1	44		1	55		1	23		1	``		1	22	J	1		UJ	1	3		1	38	J-	1	27		1	44		1	45	J	1
Perfluoroheptanoic acid	ng/l	375-85-9	NE	20	J+	1	34	J+	1	23	J+	1	29		1	31	J+	1	16		1	31		1	12	J	1		UJ	1		U	1	23		1	18		1	21		1	26	J	1
Perfluorooctanoic acid (PFOA)	ng/l	335-67-1	70	200		1	290		1	200		1	160		1	190		1	130		1	280		1	43	J+	1		UJ	1	2		1	120		1	180		1	60		1	170	J	1
Perfluorononanoic acid	ng/l	375-95-1	NE	7	J	1	7	J+	1	9	J+	1	5	J+	1	6	J+	1	10		1	13	J+	1	13	J	1		UJ	1		U	1	6		1	9		1	2		1	8	J	1
Perfluorodecanoic acid	ng/l	335-76-2	NE	1	J+	1	2	J+	1		U	1		U	1		U	1	1	J	1	2		1	3	J	1		UJ	1		U	1	5		1	3		1		U	1	13	J+	1
Perfluoroundecanoic acid	ng/l	2058-94-8	NE		U	2		U	2		U	2		U	2		U	2		U	2		U	2		UJ	2		UJ	2		U	2		U	2		U	2		U	2		UJ	2
Perfluorododecanoic acid	ng/l	307-55-1	NE		U	3		U	3		U	3		U	3		U	3		U	3		U	3		UJ	3		UJ	3		U	3		U	3		U	3		UJ	3		UJ	3
Perfluorotridecanoic acid	ng/l	72629-94-8	NE		U	2		U	2		U	2		U	2		U	2		U	2		U	2		UJ	2		UJ	2		U	2		U	2		U	2		UJ	2		UJ	2
Perfluorotetradecanoic acid	ng/l	376-06-7	NE		U	3		U	3		U	3		U	3		U	3		U	3		U	3		UJ	3		UJ	3		U	3		U	3		U	3		UJ	3		UJ	3
Perfluorobutane Sulfonate	ng/l	29420-43-3	NE		UJ	4		U	4		UJ	4		U	4		U	4		U	4		U	4		UJ	4		UJ	4		U	4		U	4		U	4		U	4		UJ	4
Perfluorohexane Sulfonate	ng/l	108427-53-8	NE	17		4	56	J+	4	6	J	4	7	J	4	7	J	4	9	J	4	14		4		UJ	4		UJ	4		U	4	52		4	34		4	5	J	4	110	J+	4
Perfluorooctane Sulfonate (PFOS)	ng/l	1763-23-1	70	17	J+	5	34	J+	5	12	J+	5	9	J	5	12		5	15		5	16		5	7	J+	5		UJ	5		U	5	29		5	21		5		U	5	50	J+	5
N-methyl perfluorooctanesulfonamidoacetic Acid	ng/l	2355-31-9	NE		U	4		U	4		U	4		U	4		U	4		U	4		U	4		UJ	4		UJ	4		U	4		U	4		UJ	4		UJ	4		UJ	4
N-ethyl perfluorooctanesulfonamidoacetic Acid	ng/l	2991-50-6	NE		UJ	5		U	5		UJ	5		U	5		U	5		U	5		U	5		UJ	5		UJ	5		U	5		U	5		UJ	5		UJ	5		UJ	5
Total PFOA + PFOS	ng/l	NA	70	217			324			212			169			202			145			296			50			0			2			149			201			60			220		

Attachment Table 2-1 (continued)
September-October 2016 Semi-Annual Monitoring Program - Summary of Detected PFCs
Delaware Sand & Gravel Superfund Site
New Castle, Delaware

			Sample ID	UPA-03D			AWC-E1			AWC-E1			BW-1			BW-2			MW-18			MW-26N			MW-28			MW-29			MW-29			MW-31			MW-34			P-4_UPA			P-5L		
			Sample Date	10/3/2016			10/13/2016			10/13/2016			10/4/2016			10/4/2016			10/7/2016			10/3/2016			10/5/2016			10/5/2016			10/5/2016			10/5/2016			10/7/2016			10/14/2016			10/7/2016		
			N=Normal, FD=Field Duplicate	N			FD			N			N			N			N			N			N			FD			N			N			N			N			N		
Parameter	Unit	CAS	HA	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Perfluorohexanoic acid	ng/l	307-24-4	NE	51	J	1	29		1	29		1	25	J	1	20	J	1	28	J-	1	20	J	1	40		1	30	J	1	31	J	1	40	J-	1	18		1	86		1	9		1
Perfluoroheptanoic acid	ng/l	375-85-9	NE	29	J+	1	16		1	16		1	16	J	1	13	J	1	20		1	11	J+	1	23		1	19	J	1	19	J	1	28		1	10		1	33		1	5	J+	1
Perfluorooctanoic acid (PFOA)	ng/l	335-67-1	70	180	J	1	86		1	84		1	130	J	1	83	J	1	150	J-	1	87	J	1	54		1	130	J	1	120	J	1	190	J-	1	66		1	170		1	35		1
Perfluorononanoic acid	ng/l	375-95-1	NE	8	J+	1	10		1	10		1	10	J+	1	9	J	1	6		1	4	J+	1	3	J+	1	9	J	1	9	J	1	6		1	5		1	68		1	1	J+	1
Perfluorodecanoic acid	ng/l	335-76-2	NE	13	J+	1	2		1	3		1		UJ	1	2	J	1	2	J	1	1	J+	1		U	1	2	J	1	2	J	1		U	1		U	1	1	J	1		U	1
Perfluoroundecanoic acid	ng/l	2058-94-8	NE		UJ	2		U	2		U	2		UJ	2		UJ	2		U	2		UJ	2		U	2		UJ	2		UJ	2		U	2		U	2		U	2		U	2
Perfluorododecanoic acid	ng/l	307-55-1	NE		UJ	3		U	3		U	3		UJ	3		UJ	3		U	3		UJ	3		U	3		UJ	3		UJ	3		UJ	3		U	3		U	3		U	3
Perfluorotridecanoic acid	ng/l	72629-94-8	NE		UJ	2		U	2		U	2		UJ	2		UJ	2		U	2		UJ	2		U	2		UJ	2		UJ	2		UJ	2		U	2		U	2		U	2
Perfluorotetradecanoic acid	ng/l	376-06-7	NE		UJ	3		U	3		U	3		UJ	3		UJ	3		U	3		UJ	3		U	3		UJ	3		UJ	3		UJ	3		U	3		U	3		U	3
Perfluorobutane Sulfonate	ng/l	29420-43-3	NE		UJ	4		U	4		U	4		UJ	4		UJ	4		U	4		UJ	4	6	J	4		UJ	4		UJ	4	4	J	4		U	4	29		4		U	4
Perfluorohexane Sulfonate	ng/l	108427-53-8	NE	110	J	4	10	J	4	9	J	4	16	J	4	11	J	4	25		4	17	J	4	8	J	4	10	J	4	10	J	4	10		4	14		4	190		4	7	J	4
Perfluorooctane Sulfonate (PFOS)	ng/l	1763-23-1	70	55	J+	5	11		5	10	J	5	18	J+	5	17	J	5	47		5	11	J+	5	9	J	5	120	J	5	130	J	5	100		5	14		5	28		5	5	J	5
N-methyl perfluorooctanesulfonamidoacetic Acid	ng/l	2355-31-9	NE		UJ	4		U	4		U	4		UJ	4		UJ	4		U	4		UJ	4		U	4		UJ	4		UJ	4		U	4		U	4		U	4		U	4
N-ethyl perfluorooctanesulfonamidoacetic Acid	ng/l	2991-50-6	NE		UJ	5		U	5		U	5		UJ	5		UJ	5		U	5		UJ	5		U	5		UJ	5		UJ	5	25		5		U	5		U	5		U	5
Total PFOA + PFOS	ng/l	NA	70	235			97			94			148			100			197			98			63			250			250			290			80			198			40		

Attachment Table 2-1 (continued)
September-October 2016 Semi-Annual Monitoring Program - Summary of Detected PFCs
Delaware Sand & Gravel Superfund Site
New Castle, Delaware

			Sample ID	P-5U			P-6_UPA			UPA-101-TZ			UPA-101-US			AWC-E1			AWC-E2			AWC-E2			AWC-K1		
			Sample Date	10/7/2016			9/28/2016			9/28/2016			9/28/2016			10/13/2016			10/13/2016			10/13/2016			10/13/2016		
			N=Normal, FD=Field Duplicate	N			N			N			N			N			N			N			N		
Parameter	Unit	CAS	HA	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Perfluorohexanoic acid	ng/l	307-24-4	NE	46		1	38	J-	1	47	J-	1	52		1	30		1	30		1	33		1	7		1
Perfluoroheptanoic acid	ng/l	375-85-9	NE	23		1	33		1	22	J+	1	29	J+	1	15	J+	1	12		1	15		1	4	J+	1
Perfluorooctanoic acid (PFOA)	ng/l	335-67-1	70	76		1	140	J-	1	130		1	210		1	76		1	110		1	130		1	23		1
Perfluorononanoic acid	ng/l	375-95-1	NE	8		1	10		1	4		1	8		1	12	J+	1	6		1	5		1	2	J+	1
Perfluorodecanoic acid	ng/l	335-76-2	NE	4		1	4		1		U	1	5		1	4		1	3		1	3		1		U	1
Perfluoroundecanoic acid	ng/l	2058-94-8	NE	5		2		U	2		U	2		U	2		U	2		U	2		U	2		U	2
Perfluorododecanoic acid	ng/l	307-55-1	NE		U	3		U	3		U	3		U	3		U	3		U	3		UJ	3		U	3
Perfluorotridecanoic acid	ng/l	72629-94-8	NE		U	2		U	2		U	2		U	2		U	2		U	2		UJ	2		U	2
Perfluorotetradecanoic acid	ng/l	376-06-7	NE		U	3		U	3		U	3		U	3		U	3		U	3		UJ	3		U	3
Perfluorobutane Sulfonate	ng/l	29420-43-3	NE		U	4		U	4		U	4		U	4		U	4		U	4		U	4		U	4
Perfluorohexane Sulfonate	ng/l	108427-53-8	NE		U	4	44		4	8	J	4	50	J+	4	8	J	4	30		4	26		4	6	J	4
Perfluorooctane Sulfonate (PFOS)	ng/l	1763-23-1	70		U	5	21		5		U	5	37		5	11		5	14		5	15		5	6	J	5
N-methyl perfluorooctanesulfonamidoacetic Acid	ng/l	2355-31-9	NE		U	4		U	4		UJ	4		U	4		U	4		U	4		U	4		U	4
N-ethyl perfluorooctanesulfonamidoacetic Acid	ng/l	2991-50-6	NE		U	5		U	5		UJ	5		U	5		U	5		U	5		U	5		U	5
Total PFOA + PFOS	ng/l	NA	70	76			161			130			247			87			124			145			29		

Attachment Table 2-1 (continued)
September-October 2016 Semi-Annual Monitoring Program - Summary of Detected PFCs
Delaware Sand & Gravel Superfund Site
New Castle, Delaware

Notes:
Green highlight = Concentration exceeds HA

Abbreviations:
HA = the May 19, 2016 USEPA health advisory (HA) of 70 nanograms per liter (ng/l; parts per trillion [ppt]) for perfluorooctanoic acid (PFOA), perfluorooctane sulfonate (PFOS), and/or the combined concentrations of PFOA and PFOS
ng/L = nanograms per liter
Qual = interpreted qualifier
RDL = reporting detection limit
NE = standard does not exist
PFCs = perfluorinated compounds
Qualifiers:
J - The analyte is present; however, the reported value may not be accurate or precise.
J+ - The analyte is present; however, the reported value may not be accurate or precise. The result is biased high.
J- - The analyte is present; however, the reported value may not be accurate or precise. The result is biased low.
U - not detected above RDL
UJ - not detected above RDL, RDL is estimated

Prepared by: AZ
Checked by: BPC
Reviewed by: RWB

Attachment Table 2-2
March-April 2017 Semi-Annual Monitoring Program - Summary of Detected PFCs
Delaware Sand & Gravel Superfund Site
New Castle, Delaware

				DDA Monitoring Wells			PW-1(U) Monitoring Wells - UPCU Transition Zone			PW-1(U) Monitoring Wells - UPA Upper Sand																				
			Sample ID	DGC-8C			DDA-05			DDA-01			DDA-02			DDA-03			DDA-07-US			DDA-10-US			DDA-11-LS			DDA-11-US		
			Sample Date	4/3/2017			4/12/2017			4/12/2017			4/12/2017			4/5/2017			4/13/2017			4/11/2017			4/4/2017			4/4/2017		
			Sample Depth (ft)	-			-			-			-			-			-			-			-			-		
			N=Normal, FD=Field Duplicate	N			N			N			N			N			N			N			N			N		
Parameter	Unit	CAS	HA	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Perfluorohexanoic acid	ng/l	307-24-4	NE	39	J-	0.6	22		0.6	27		0.6	24		0.6	53		0.6	22		0.6	49	J-	0.6	26	J-	0.6	36	J-	0.6
Perfluoroheptanoic acid	ng/l	375-85-9	NE	14		0.5	14		0.5	20		0.5	16		0.5	47		0.5	14		0.5	32		0.5	20		0.5	26	J-	0.5
Perfluoro-n-octanoic acid (PFOA)	ng/l	335-67-1	70	30		0.6	100		0.6	160		0.6	140		0.6	530		0.6	140		0.6	170		0.6	140		0.6	140		0.6
Perfluorononanoic acid	ng/l	375-95-1	NE	3		0.6	5		0.6	8		0.6	8		0.6	10		0.6	9		0.6	7		0.6	11		0.6	12		0.6
Perfluorodecanoic acid	ng/l	335-76-2	NE	1	J	0.5	0.6	J	0.5	2		0.5	2	J-	0.5	5		0.5	2	J	0.5	2	J	0.5	1	J	0.5	3	J-	0.5
Perfluoroundecanoic acid	ng/l	2058-94-8	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		UJ	1		UJ	1
Perfluorododecanoic acid	ng/l	307-55-1	NE		UJ	0.5		U	0.5		U	0.5		UJ	0.5		UJ	0.5		U	0.5		UJ	0.5		UJ	0.5		UJ	0.5
Perfluorotridecanoic acid	ng/l	72629-94-8	NE		UJ	0.5		U	0.5		U	0.5		UJ	0.5		UJ	0.5		U	0.5		UJ	0.5		UJ	0.5		UJ	0.5
Perfluorotetradecanoic acid	ng/l	376-06-7	NE		UJ	0.5		U	0.5		UJ	0.5		UJ	0.5		UJ	0.5	0.6	J	0.5		UJ	0.5		UJ	0.5		UJ	0.5
Perfluorobutanesulfonic acid (PFBS)	ng/l	375-73-5	NE	1	J+	0.8	1	J	0.8	1	J	0.8	1	J	0.8	1	J	0.8	2	J	0.8	2	J	0.8		U	0.8	2	J	0.8
Perfluorohexanesulfonic acid (PFHxS)	ng/l	355-46-4	NE	1	J	1	7	J-	1	33		1	23		1	68		1	18		1	35	J-	1	12		1	5	J-	1
Perfluoro-1-Octanesulfonate (PFOS)	ng/l	1763-23-1	70	4	J	2	10		2	33		2	28		2	77	J-	2	21		2	20		2	15		2	21		2
N-methyl perfluorooctanesulfonamidoacetic Acid	ng/l	2355-31-9	NE		UJ	1		U	1		U	1		U	1		UJ	1		U	1		UJ	1		UJ	1		U	1
N-ethyl perfluorooctanesulfonamidoacetic Acid	ng/l	2991-50-6	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		UJ	1		U	1
Total PFOA + PFOS	ng/l	NA	70	34			110			193			168			607			161			190			155			161		

Attachment Table 2-2 (continued)
March-April 2017 Semi-Annual Monitoring Program - Summary of Detected PFCs
Delaware Sand & Gravel Superfund Site
New Castle, Delaware

				PW-1(U) Monitoring Wells - UPA Upper Sand																							
			Sample ID	DDA-12-US			DDA-15-US			DDA-16-US			DDA-17			DGC-2S			DGC-5			DGC-7S			MHW-1D		
			Sample Date	4/12/2017			4/13/2017			4/12/2017			4/5/2017			4/12/2017			4/11/2017			4/10/2017			4/12/2017		
			Sample Depth (ft)	-			-			-			-			-			-			-			-		
			N=Normal, FD=Field Duplicate	N			N			N			N			N			N			N			N		
Parameter	Unit	CAS	HA	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Perfluorohexanoic acid	ng/l	307-24-4	NE	37		0.6	22		0.6	26		0.6	50		0.6	32		0.6	50		0.6	24	J-	0.6	39		0.6
Perfluoroheptanoic acid	ng/l	375-85-9	NE	25		0.5	18		0.5	19		0.5	35		0.5	23		0.5	42		0.5	19	J-	0.5	30		0.5
Perfluoro-n-octanoic acid (PFOA)	ng/l	335-67-1	70	150		0.6	220		0.6	190		0.6	340		0.6	200		0.6	270		0.6	160	J-	0.6	240		0.6
Perfluorononanoic acid	ng/l	375-95-1	NE	6		0.6	5		0.6	6		0.6	10		0.6	10		0.6	9		0.6	11		0.6	16		0.6
Perfluorodecanoic acid	ng/l	335-76-2	NE		U	0.5	2	J	0.5	1	J-	0.5	3	J-	0.5	1	J	0.5	1	J	0.5	2	J-	0.5	3		0.5
Perfluoroundecanoic acid	ng/l	2058-94-8	NE		U	1		U	1		U	1		UJ	1		U	1		U	1		UJ	1		U	1
Perfluorododecanoic acid	ng/l	307-55-1	NE		U	0.5		U	0.5		UJ	0.5		UJ	0.5		U	0.5		U	0.5		UJ	0.5		U	0.5
Perfluorotridecanoic acid	ng/l	72629-94-8	NE		U	0.5		U	0.5		UJ	0.5		UJ	0.5		U	0.5		U	0.5		UJ	0.5		U	0.5
Perfluorotetradecanoic acid	ng/l	376-06-7	NE		U	0.5	0.6	J	0.5		UJ	0.5		UJ	0.5		U	0.5		U	0.5		UJ	0.5		UJ	0.5
Perfluorobutanesulfonic acid (PFBS)	ng/l	375-73-5	NE		U	0.8	1	J	0.8	1	J	0.8	1	J	0.8	1	J	0.8	3	J	0.8	1	J	0.8	2	J	0.8
Perfluorohexanesulfonic acid (PFHxS)	ng/l	355-46-4	NE	4		1	25	J-	1	14		1	57	J-	1	4		1	16		1	10	J-	1	14		1
Perfluoro-1-Octanesulfonate (PFOS)	ng/l	1763-23-1	70	3	J	2	24		2	17		2	47		2	10		2	10		2	22		2	31		2
N-methyl perfluorooctanesulfonamidoacetic Acid	ng/l	2355-31-9	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		UJ	1
N-ethyl perfluorooctanesulfonamidoacetic Acid	ng/l	2991-50-6	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Total PFOA + PFOS	ng/l	NA	70	153			244			207			387			210			280			182			271		

Attachment Table 2-2 (continued)
March-April 2017 Semi-Annual Monitoring Program - Summary of Detected PFCs
Delaware Sand & Gravel Superfund Site
New Castle, Delaware

				PW-1(U) Monitoring Wells - UPA Upper Sand						Downgradient UPA Wells																			
			Sample ID	PW-1(U)			PW-1(U)			AWC-E1			AWC-E1			AWC-E2			AWC-E2			DGC-10D			DGC-10S			DGC-11D		
			Sample Date	3/28/2017			4/11/2017			4/17/2017			4/17/2017			4/17/2017			4/17/2017			4/7/2017			4/7/2017			4/5/2017		
			Sample Depth (ft)	-			-			132			156			140			165			-			-			-		
			N=Normal, FD=Field Duplicate	N			N			N			N			N			N			N			N			N		
Parameter	Unit	CAS	HA	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Perfluorohexanoic acid	ng/l	307-24-4	NE	29		0.6	25		0.6	22		0.6	26		0.6	23		0.6	21		0.6	20		0.6	30	J-	0.6	27		0.6
Perfluoroheptanoic acid	ng/l	375-85-9	NE	18		0.5	17		0.5	14		0.5	19		0.5	14		0.5	15		0.5	13		0.5	17		0.5	18		0.5
Perfluoro-n-octanoic acid (PFOA)	ng/l	335-67-1	70	170		0.6	140		0.6	80		0.6	100		0.6	93		0.6	100		0.6	120		0.6	44		0.6	52		0.6
Perfluorononanoic acid	ng/l	375-95-1	NE	9		0.6	7		0.6	7		0.6	10		0.6	5		0.6	6		0.6	4		0.6	10		0.6	18		0.6
Perfluorodecanoic acid	ng/l	335-76-2	NE	2	J	0.5	2	J-	0.5	2	J	0.5	3		0.5	2	J	0.5	2		0.5	5		0.5	5		0.5	4		0.5
Perfluoroundecanoic acid	ng/l	2058-94-8	NE		U	1		U	1		U	1	1	J	1		U	1		U	1	1	J	1	2	J	1	1	J	1
Perfluorododecanoic acid	ng/l	307-55-1	NE		U	0.5		UJ	0.5		U	0.5		U	0.5		U	0.5		U	0.5		U	0.5	1	J-	0.5		U	0.5
Perfluorotridecanoic acid	ng/l	72629-94-8	NE		U	0.5		UJ	0.5		U	0.5		U	0.5		U	0.5		U	0.5		U	0.5		UJ	0.5		U	0.5
Perfluorotetradecanoic acid	ng/l	376-06-7	NE		UJ	0.5		UJ	0.5		U	0.5		U	0.5		U	0.5		U	0.5		U	0.5		UJ	0.5		UJ	0.5
Perfluorobutanesulfonic acid (PFBS)	ng/l	375-73-5	NE	1	J	0.8	1	J	0.8	2	J	0.8	2	J	0.8	1	J+	0.8	1	J	0.8	0.9	J	0.8	2	J+	0.8	3	J	0.8
Perfluorohexanesulfonic acid (PFHxS)	ng/l	355-46-4	NE	22		1	18	J-	1	7		1	8	J-	1	16		1	18		1	36		1	12		1	4	J-	1
Perfluoro-1-Octanesulfonate (PFOS)	ng/l	1763-23-1	70	21		2	21		2	14		2	15		2	11		2	16		2	27		2	16		2	9		2
N-methyl perfluorooctanesulfonamidoacetic Acid	ng/l	2355-31-9	NE		U	1		U	1		U	1		U	1		U	1		U	1		UJ	1		UJ	1		UJ	1
N-ethyl perfluorooctanesulfonamidoacetic Acid	ng/l	2991-50-6	NE		U	1		U	1		U	1		U	1		U	1		U	1		U	1		UJ	1		U	1
Total PFOA + PFOS	ng/l	NA	70	191			161			94			115			104			116			147			60			61		

Attachment Table 2-2 (continued)
March-April 2017 Semi-Annual Monitoring Program - Summary of Detected PFCs
Delaware Sand & Gravel Superfund Site
New Castle, Delaware

				NCC UPA Monitoring Wells and P-6 Vicinity																							
			Sample ID	BW-1			BW-2			MW-18			MW-26N			MW-28			MW-29			MW-29			MW-31		
			Sample Date	4/3/2017			4/3/2017			3/30/2017			4/5/2017			3/29/2017			3/29/2017			3/29/2017			3/29/2017		
			Sample Depth (ft)	-			-			-			-			-			-			-			-		
			N=Normal, FD=Field Duplicate	N			N			N			N			N			FD			N			N		
Parameter	Unit	CAS	HA	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Perfluorohexanoic acid	ng/l	307-24-4	NE	39		0.6	27	J-	0.6	26		0.6	28		0.6	40		0.6	31		0.6	36		0.6	39		0.6
Perfluoroheptanoic acid	ng/l	375-85-9	NE	26		0.5	21		0.5	19		0.5	15		0.5	20		0.5	25		0.5	25		0.5	26		0.5
Perfluoro-n-octanoic acid (PFOA)	ng/l	335-67-1	70	150		0.6	120		0.6	150		0.6	130		0.6	50		0.6	180		0.6	190		0.6	180		0.6
Perfluorononanoic acid	ng/l	375-95-1	NE	15		0.6	11		0.6	8		0.6	5		0.6	4		0.6	13		0.6	14		0.6	6		0.6
Perfluorodecanoic acid	ng/l	335-76-2	NE	0.6	J	0.5	2		0.5	2	J	0.5	2		0.5	1	J	0.5	3		0.5	3		0.5	1	J-	0.5
Perfluoroundecanoic acid	ng/l	2058-94-8	NE		U	1	1	J	1		U	1		UJ	1		U	1		U	1		U	1		UJ	1
Perfluorododecanoic acid	ng/l	307-55-1	NE		UJ	0.5		UJ	0.5		U	0.5		UJ	0.5		U	0.5		U	0.5		UJ	0.5		UJ	0.5
Perfluorotridecanoic acid	ng/l	72629-94-8	NE		UJ	0.5		UJ	0.5		U	0.5		UJ	0.5		U	0.5		U	0.5		U	0.5		U	0.5
Perfluorotetradecanoic acid	ng/l	376-06-7	NE		UJ	0.5		UJ	0.5		U	0.5		UJ	0.5		U	0.5		U	0.5		UJ	0.5		UJ	0.5
Perfluorobutanesulfonic acid (PFBS)	ng/l	375-73-5	NE	6		0.8	2	J	0.8	3	J	0.8	2	J	0.8	4		0.8	3	J	0.8	3	J	0.8	3	J	0.8
Perfluorohexanesulfonic acid (PFHxS)	ng/l	355-46-4	NE	17		1	12		1	18		1	23		1	9		1	11		1	10		1	9		1
Perfluoro-1-Octanesulfonate (PFOS)	ng/l	1763-23-1	70	41		2	33		2	41		2	15		2	12		2	120		2	130		2	99		2
N-methyl perfluorooctanesulfonamidoacetic Acid	ng/l	2355-31-9	NE		UJ	1		UJ	1		UJ	1		UJ	1		U	1		U	1		UJ	1		U	1
N-ethyl perfluorooctanesulfonamidoacetic Acid	ng/l	2991-50-6	NE		UJ	1		UJ	1		U	1		UJ	1		U	1	1	J	1	1	J	1	14		1
Total PFOA + PFOS	ng/l	NA	70	191			153			191			145			62			300			320			279		

Attachment Table 2-2 (continued)
March-April 2017 Semi-Annual Monitoring Program - Summary of Detected PFCs
Delaware Sand & Gravel Superfund Site
New Castle, Delaware

				NCC UPA Monitoring Wells and P-6 Vicinity																							
			Sample ID	BW-1			BW-2			MW-18			MW-26N			MW-28			MW-29			MW-29			MW-31		
			Sample Date	4/3/2017			4/3/2017			3/30/2017			4/5/2017			3/29/2017			3/29/2017			3/29/2017			3/29/2017		
			Sample Depth (ft)	-			-			-			-			-			-			-			-		
			N=Normal, FD=Field Duplicate	N			N			N			N			N			FD			N			N		
Parameter	Unit	CAS	HA	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Perfluorohexanoic acid	ng/l	307-24-4	NE	39		0.6	27	J-	0.6	26		0.6	28		0.6	40		0.6	31		0.6	36		0.6	39		0.6
Perfluoroheptanoic acid	ng/l	375-85-9	NE	26		0.5	21		0.5	19		0.5	15		0.5	20		0.5	25		0.5	25		0.5	26		0.5
Perfluoro-n-octanoic acid (PFOA)	ng/l	335-67-1	70	150		0.6	120		0.6	150		0.6	130		0.6	50		0.6	180		0.6	190		0.6	180		0.6
Perfluorononanoic acid	ng/l	375-95-1	NE	15		0.6	11		0.6	8		0.6	5		0.6	4		0.6	13		0.6	14		0.6	6		0.6
Perfluorodecanoic acid	ng/l	335-76-2	NE	0.6	J	0.5	2		0.5	2	J	0.5	2		0.5	1	J	0.5	3		0.5	3		0.5	1	J-	0.5
Perfluoroundecanoic acid	ng/l	2058-94-8	NE		U	1	1	J	1		U	1		UJ	1		U	1		U	1		U	1		UJ	1
Perfluorododecanoic acid	ng/l	307-55-1	NE		UJ	0.5		UJ	0.5		U	0.5		UJ	0.5		U	0.5		U	0.5		UJ	0.5		UJ	0.5
Perfluorotridecanoic acid	ng/l	72629-94-8	NE		UJ	0.5		UJ	0.5		U	0.5		UJ	0.5		U	0.5		U	0.5		U	0.5		U	0.5
Perfluorotetradecanoic acid	ng/l	376-06-7	NE		UJ	0.5		UJ	0.5		U	0.5		UJ	0.5		U	0.5		U	0.5		UJ	0.5		UJ	0.5
Perfluorobutanesulfonic acid (PFBS)	ng/l	375-73-5	NE	6		0.8	2	J	0.8	3	J	0.8	2	J	0.8	4		0.8	3	J	0.8	3	J	0.8	3	J	0.8
Perfluorohexanesulfonic acid (PFHxS)	ng/l	355-46-4	NE	17		1	12		1	18		1	23		1	9		1	11		1	10		1	9		1
Perfluoro-1-Octanesulfonate (PFOS)	ng/l	1763-23-1	70	41		2	33		2	41		2	15		2	12		2	120		2	130		2	99		2
N-methyl perfluorooctanesulfonamidoacetic Acid	ng/l	2355-31-9	NE		UJ	1		UJ	1		UJ	1		UJ	1		U	1		U	1		UJ	1		U	1
N-ethyl perfluorooctanesulfonamidoacetic Acid	ng/l	2991-50-6	NE		UJ	1		UJ	1		U	1		UJ	1		U	1	1	J	1	1	J	1	14		1
Total PFOA + PFOS	ng/l	NA	70	191			153			191			145			62			300			320			279		

Attachment Table 2-2 (continued)
March-April 2017 Semi-Annual Monitoring Program - Summary of Detected PFCs
Delaware Sand & Gravel Superfund Site
New Castle, Delaware

				NCC UPA Monitoring Wells and P-6 Vicinity																									
			Sample ID	MW-34			MW-40			P-4_UPA			P-5L			P-5U			P-6_UPA			P-6_UPA			RW-10			RW-10		
			Sample Date	3/30/2017			4/11/2017			4/11/2017			3/30/2017			3/30/2017			4/3/2017			4/3/2017			4/11/2017			4/11/2017		
			Sample Depth (ft)	-			-			-			-			-			-			-			-			-		
			N=Normal, FD=Field Duplicate	N			N			N			N			N			FD			N			FD			N		
Parameter	Unit	CAS	HA	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL	Result	Qual	RDL
Perfluorohexanoic acid	ng/l	307-24-4	NE	17		0.6	14		0.6	16	J-	0.6	11		0.6	33		0.6	34	J-	0.6	34	J-	0.6	45		0.6	46		0.6
Perfluoroheptanoic acid	ng/l	375-85-9	NE	10		0.5	10		0.5	11		0.5	6		0.5	18		0.5	24	J-	0.5	19		0.5	20		0.5	19		0.5
Perfluoro-n-octanoic acid (PFOA)	ng/l	335-67-1	70	71		0.6	45		0.6	20	J-	0.6	45		0.6	76		0.6	110		0.6	100		0.6	92		0.6	93		0.6
Perfluorononanoic acid	ng/l	375-95-1	NE	5		0.6	4		0.6	14		0.6	2	J	0.6	8		0.6	8		0.6	8		0.6	29		0.6	32		0.6
Perfluorodecanoic acid	ng/l	335-76-2	NE	1	J	0.5	0.7	J	0.5	7	J-	0.5	0.6	J	0.5	1	J	0.5	7		0.5	6		0.5	2		0.5	3		0.5
Perfluoroundecanoic acid	ng/l	2058-94-8	NE		U	1		U	1	3	J-	1		U	1	2	J	1	3	J-	1	3	J-	1		U	1		U	1
Perfluorododecanoic acid	ng/l	307-55-1	NE		U	0.5		U	0.5		UJ	0.5		U	0.5		U	0.5	1	J-	0.5	1	J-	0.5		UJ	0.5		U	0.5
Perfluorotridecanoic acid	ng/l	72629-94-8	NE		U	0.5		U	0.5		UJ	0.5		U	0.5		U	0.5		UJ	0.5		UJ	0.5		UJ	0.5		U	0.5
Perfluorotetradecanoic acid	ng/l	376-06-7	NE		U	0.5	0.5	J	0.5		UJ	0.5		U	0.5		U	0.5		UJ	0.5		UJ	0.5	0.7	J-	0.5		UJ	0.5
Perfluorobutanesulfonic acid (PFBS)	ng/l	375-73-5	NE	2	J	0.8	0.8	J	0.8	1	J	0.8		U	0.8	4		0.8	2	J+	0.8		UJ	0.8	9		0.8	8		0.8
Perfluorohexanesulfonic acid (PFHxS)	ng/l	355-46-4	NE	13	J-	1	11		1	6		1	8		1	4		1	52	J-	1	35		1	93	J-	1	85		1
Perfluoro-1-Octanesulfonate (PFOS)	ng/l	1763-23-1	70	19		2	17		2	5	J	2	8		2	3	J	2	21		2	19		2	11		2	11		2
N-methyl perfluorooctanesulfonamidoacetic Acid	ng/l	2355-31-9	NE		U	1		U	1		UJ	1		U	1		U	1		UJ	1		UJ	1		UJ	1		U	1
N-ethyl perfluorooctanesulfonamidoacetic Acid	ng/l	2991-50-6	NE		U	1		U	1		U	1		U	1		U	1		UJ	1		U	1		U	1		U	1
Total PFOA + PFOS	ng/l	NA	70	90			62			25			53			79			131			119			103			104		

Attachment Table 2-2 (continued)
March-April 2017 Semi-Annual Monitoring Program - Summary of Detected PFCs
Delaware Sand & Gravel Superfund Site
New Castle, Delaware

				NCC UPA Monitoring Wells and P-6 Vicinity					
			Sample ID	UPA-101-TZ			UPA-101-US		
			Sample Date	3/29/2017			4/4/2017		
			Sample Depth (ft)	-			-		
			N=Normal, FD=Field Duplicate	N			N		
Parameter	Unit	CAS	HA	Result	Qual	RDL	Result	Qual	RDL
Perfluorohexanoic acid	ng/l	307-24-4	NE	39	J-	0.6	57	J-	0.6
Perfluoroheptanoic acid	ng/l	375-85-9	NE	20		0.5	45	J-	0.5
Perfluoro-n-octanoic acid (PFOA)	ng/l	335-67-1	70	150		0.6	240		0.6
Perfluorononanoic acid	ng/l	375-95-1	NE		U	0.6	7		0.6
Perfluorodecanoic acid	ng/l	335-76-2	NE		U	0.5	5	J-	0.5
Perfluoroundecanoic acid	ng/l	2058-94-8	NE		U	1		UJ	1
Perfluorododecanoic acid	ng/l	307-55-1	NE		U	0.5		UJ	0.5
Perfluorotridecanoic acid	ng/l	72629-94-8	NE		U	0.5		UJ	0.5
Perfluorotetradecanoic acid	ng/l	376-06-7	NE		UJ	0.5		UJ	0.5
Perfluorobutanesulfonic acid (PFBS)	ng/l	375-73-5	NE	2	J+	0.8		UJ	0.8
Perfluorohexanesulfonic acid (PFHxS)	ng/l	355-46-4	NE	6		1	94	J-	1
Perfluoro-1-Octanesulfonate (PFOS)	ng/l	1763-23-1	70	5	J	2	44		2
N-methyl perfluorooctanesulfonamidoacetic Acid	ng/l	2355-31-9	NE		U	1		UJ	1
N-ethyl perfluorooctanesulfonamidoacetic Acid	ng/l	2991-50-6	NE		U	1		UJ	1
Total PFOA + PFOS	ng/l	NA	70	155			284		