State of Delaware
DELAWARE GEOLOGICAL SURVEY
UNIVERSITY OF DELAWARE
Newark, Delaware
19711

RECEIVED
OCT 28 1980
ecology and
environment, inc.
Philadelphia

ROBERT R. JORDAN, STATE GEOLOGIST
101 PENNY HALL
PHONE: 302-738-2833, 2834

October 27, 1980

ORIGINAL
(Red)

SEMS DocID 2332206

Mr. [redacted]
Ecology and Environment, Inc.
8021 Route 130
Pennsauken, NJ 08110

Subject: Water and well data in the vicinity of the Delaware Memorial Bridge

Dear Ron:

I am enclosing well construction data, water use data, and allocation data for the five (5) producing wells at the ICI Americas plant, Atlas Point. I am also enclosing the same type of data for the Artesian Water Company wells in the same vicinity. I hope that this data will be of use to you.

If you have any questions or require further information, please do not hesitate to contact us.

Sincerely,

John

John H. Talley
Hydrogeologist

JHT:dcw

enclosures

8506-14-27

DUFFIELD ASSOCIATES, INC.

Consulting Geotechnical Engineers

Water Level Field Data Sheet

Project Pig. Pt. W. O. No. 115

Date 6/16-6/19/82 Page 1 of 1 Tested by T.T.R. Calc. by G.K.E. Checked by

M. P. No.	T.O.C. Ref. Elev.	T.O.C. Water Depth	Water Elev.	T.O.C. Bott. Depth	Bott. Elev.	Stick Up	Dia. of Pipe	Remarks
1	23.4	10.3	13.1	17.4	6.0			Marsh / Hydraulic Fill
1A	22.7	18.4	4.3	32.5	-9.8			Columbia (Pleist.)
24	31.1	30.9	0.2	96.5 ±				Marsh + "Basal Gravel"
25								Columbia
26								Potomac (Creta.)
27								Columbia
28	17.8	19.0	-1.2	53.2	-35.4			Potomac
28A	17.8	6.1	11.7	16.6	1.2			Marsh / Hydraulic Fill
29	17.6	25.1	-7.5	53.4	-35.8			Potomac
29A	15.8	5.3	10.5	16.6	-0.8			Marsh / Hydraulic Fill
31	26.6	22.9	[illegible]	66.7	-40.1			Potomac
31A	24.6	8.7	15.9	17.1	7.5			Hydraulic Fill / Marsh
32	18.8	6.3	12.5	30.3	-11.5			Marsh
32A	21.3	8.6	12.7	18.1	3.2			Hydraulic Fill / Marsh
37	20.6	5.3	15.3	16.6	4.0			Hydraulic Fill / Marsh
37A	20.6	9.1	11.5	42.2	-21.6			Potomac
39	15.9	5.0	10.9	16.6	-0.7			Marsh / Hydraulic Fill
41	24.9	23.3	1.6	26.5	-1.6			Marsh / Hydraulic Fill
A	25.0	25.3	-0.3	57.3	-32.3			Potomac
	19.9	10.0	9.9	18.1	1.8			Marsh / Hydraulic Fill
	19.8	10.1	9.7	42.0	-22.2			Marsh

ORIGINAL (Red)

Pigeon
G.W. el
Airport

GROUNDWATER LEVEL ELEVATION*
Northern Solid Waste Facility-1

	Feb. 1981	May 1981	Sept. 1981	Dec. 1981	Feb. 1982	May 1982		
Recent Deposits & Dredge Spoils (Water-Table Wells)								
1	13.0 ft.	13.6 ft.	13.5 ft.	13.1 ft.	12.9 ft.	12.9 ft.	13.5 - 21	7.5
28A	11.7 ft.	10.4 ft.	10.2 ft.	13.0 ft.	13.55 ft.	12.5 ft.	11.4 - 16	4.6
29A	9.3 ft.	10.5 ft.	8.8 ft.	10.7 ft.	11.15 ft.	9.9 ft.	10.0 - 14	4
31A	15.5 ft.	16.2 ft.	15.7 ft.	16.3 ft.	16.2 ft.	16.8 ft.	16. - 16.1 - 22.5	6.4
32A	12.9 ft.	12.8 ft.	12.1 ft.	13.0 ft.	13.2 ft.	12.7 ft.	12.8 - 19.05	7
37	13.2 ft.	15.5 ft.	15.1 ft.	14.0 ft.	13.85 ft.	15.55 ft.	~~15.0~~ 14.5 - 18.5	4
39 10.73-14 3.26	10.8 ft.	10.7 ft.	10.6 ft.	10.9 ft.	10.85 ft.	10.55 ft.	10.8 - 14	3.2
41	1.2 ft.	1.5 ft.	0.9 ft.	1.0 ft.	2.2 ft.	2.55 ft.	1.55 - 23	20
42	9.6 ft.	9.7 ft.	8.0 ft.	9.8 ft.	10.2 ft.	9.35 ft.	9.5 - 18	8.5
51 40						14.65 ft.		
(Deeper Zone Wells)								
24	0.4 ft.	0.9 ft.	0.8 ft.	---	---	---	.7 - 30	
32 2.15 (12.85 - 15)	11.9 ft.	12.5 ft.	12.9 ft.	13.6 ft.	13.3 ft.	12.9 ft.	12.5 - 15	2.5
37A	11.2 ft.	11.4 ft.	13.4 ft.	12.6 ft.	12.5 ft.	13.2 ft.	12.0 - 19	7
42A	8.5 ft.	9.1 ft.	8.0 ft.	8.4 ft.	8.9 ft.	8.8 ft.	8.5 - 18	9.5
Pleistocene Sands								
1A	3.8 ft.	4.3 ft.	4.0 ft.	3.9 ft.	4.2 ft.	4.5 ft.	4.2 - 21	16
25	3.5± ft.	3.8± ft.	**	**	**	**	3.7 -	—
25(R)				0.8 ft.	3.45 ft.	1.8 ft.	.2 -	—
27	0.3± ft.	0.1± ft.	**	**	**	**		—
27(R)				0.25 ft.	2.75 ft.	3.25 ft.	2.5 -	—
50						4.5 ft.		—
Potomac Sands								
26	-3.7± ft.	---	**	**	**	**	7.7 - 16	~
26(R)				-1.35 ft.	-0.3 ft.	-1.2 ft.		
28	-1.3± ft.	-3.3 ft.	-0.5 ft.	-0.4 ft.	0.05 ft.	0.4 ft.	.8 - 10	~
29	-3.9 ft.	-5.3 ft.	-4.0 ft.	-2.8 ft.	-2.75 ft.	-4.8 ft.	-4.0 -	10
31	3.2 ft.	3.4 ft.	3.3 ft.	3.2 ft.	5.0 ft.	4.65 ft.	3.4 -	18
41A	-0.7 ft.	0.0 ft.	0.2 ft.	-0.3 ft.	0.3 ft.	0.95 ft.	.1 - 2	22.9
45								
Interior (Base of) Landfill								
46						43± ft.		
47						32.9 ft.		
48						49.25 ft.		
49						17.25 ft.		

* N.G.S. 1929 Sea Level Datum

** Observation Well Abandoned

ORIGINAL (Red)

15.8

ORIGINAL (Red)

POTOMAC FM. MONITOR WELLS
PIGEON POINT

WELL #26 UP 8-25-80

CONTAMINANT	WELL CONC.	MCL
Arsenic		0.05 mg/l
Barium	<0.1 mg/l	1 mg/l
Cadmium	<0.1 mg/l	0.01 mg/l
Chromium	<0.1 mg/l	0.05 mg/l
Lead	<0.1 mg/l	0.05 mg/l
Mercury	<0.0015 mg/l	0.002 mg/l
NO_3-N	<0.11 mg/l	10 mg/l
Silver	<0.1 mg/l	0.05 mg/l

WELL #28 8-26-80

CONTAMINANT	WELL CONC.	MCL
Arsenic		0.05 mg/l
Barium	<0.1 mg/l	1 mg/l
Cadmium	<0.1 mg/l	0.01 mg/l
Chromium	<0.1 mg/l	0.05 mg/l
Lead	0.12 mg/l	0.05 mg/l
Mercury	<0.0015 mg/l	0.002 mg/l
NO_3-N	<0.11 mg/l	10 mg/l
Silver	<0.1 mg/l	0.05 mg/l

WELL #29 DOWN 8-26-80

CONTAMINANT	WELL CONC.	MCL
Arsenic		0.05 mg/l
Barium	<0.1 mg/l	1 mg/l
Cadmium	<0.1 mg/l	0.01 mg/l
Chromium	<0.1 mg/l	0.05 mg/l
Lead	<0.1 mg/l	0.05 mg/l
Mercury	<0.0015 mg/l	0.002 mg/l
NO_3-N	<0.11 mg/l	10 mg/l
Silver	<0.1 mg/l	0.05 mg/l

WELL #31 8-25-80

CONTAMINANT	WELL CONC.	MCL
Arsenic		0.05 mg/l
Barium	<0.1 mg/l	1 mg/l
Cadmium	<0.1 mg/l	0.01 mg/l
Chromium	<0.1 mg/l	0.05 mg/l
Lead	<0.1 mg/l	0.05 mg/l
Mercury	<0.0015 mg/l	0.002 mg/l
NO_3-N	0.09 mg/l	10 mg/l
Silver	<0.1 mg/l	0.05 mg/l

POTOMAC FM. MONITOR WELL 26 - UPGRADIENT

ORIGINAL (Red)

PIGEON POINT

CONTAMINANT	WELL CONC. mg/l	MCL mg/l
As	—	0.05
Ba	<0.1	1
Cd	<0.1	0.01
Cr	<0.1	0.05
Pb	<0.1	0.05
Hg	<0.0015	0.002
NO_3-N	<0.11	10
Ag	<0.1	0.05

8-25-80

CONTAMINANT	WELL CONC. mg/l	MCL mg/l
As	<0.01	0.05
Ba	<0.1	1
Cd	<0.1	0.01
Cr	<0.1	0.05
Pb	<0.1	0.05
Hg	<0.0015	0.002
NO_3-N	<0.11	10
Ag	<0.1	0.05

11-17-80

CONTAMINANT	WELL CONC.	MCL

CONTAMINANT	WELL CONC.	MCL

SYNTHETIC ORGANIC COMPOUNDS	
Well 148 DATE	8/4/82
Chloromethane, ug/l.	<10
Bromomethane, ug/l.	<10
Vinyl Chloride, ug/l.	<10
Chloroethane, ug/l.	<10
Methylene Chloride, ug/l.	<10
Trichlorofluoromethane, ug/l	<10
1,1-Dichloroethane, ug/l.	<10
trans-1,2-Dichloroethylene, ug/l.	<10
Chloroform, ug/l.	<10
1,2-Dichloroethane, ug/l.	<10
1,1,1-Trichloroethane, ug/l	<10
Carbon Tetrachloride, ug/l.	<10
Bromodichloromethane, ug/l.	<10
1,2-Dichloropropane, ug/l.	<10
trans-1,3-Dichloropropene, ug/l.	<10
Trichloroethylene, ug/l.	<10
Dibromochloromethane, ug/l.	<10
cis-1,3-Dichloropropene, ug/l.	<10
1,1,2-Trichloroethane, ug/l	<10
Benzene, ug/l.	4.8
2-Chloroethylvinyl Ether, ug/l.	<10
Bromoform, ug/l.	<10
Tetrachloroethylene, ug/l.	<10
1,1,2,2-Tetrachloroethane, ug/l	<10
Toluene, ug/l.	54
Chlorobenzene, ug/l.	<10
Ethylbenzene, ug/l.	20
Acrylonitrile, mg/l.	
1,1-Dichloroethylene, ug/l	<10

ORIGINAL (Red)

POTOMAC FM. MONITOR WELL 31 - DOWNGRADIENT

PIGEON POINT

ORIGINAL (Red)

CONTAMINANT	WELL CONC. mg/l	MCL mg/l
As	—	0.05
Ba	-	1
Cd	<0.1	0.01
Cr	<0.1	0.05
Pb	<0.1	0.05
Hg	<0.0015	0.002
NO_3-N	—	10
Ag	—	0.05

6-16-80

CONTAMINANT	WELL CONC. mg/l	MCL mg/l
As		0.05
Ba	<0.1	1
Cd	<0.1	0.01
Cr	<0.1	0.05
Pb	<0.1	0.05
Hg	<0.0015	0.002
NO_3-N	0.09	10
Ag	<0.1	0.05

8-25-80

CONTAMINANT	WELL CONC. mg/l	MCL mg/l
As		0.05
Ba	<0.1	1
Cd	<0.1	0.01
Cr	<0.1	0.05
Pb	<0.1	0.05
Hg	<0.0015	0.002
NO_3-N	<0.11	10
Ag	<0.1	0.05

11-19-80

CONTAMINANT	WELL CONC.	MCL

ORIGINAL (Red)

NORTHERN SOLID WASTE FACILITY - 1
GROUNDWATER MONITORING PROGRAM
PERMIT YEAR 1982/83
WELL #26R

PREPARED FOR DNREC REPORT

ANALYSIS	UNITS	AUG/83
pH	pH	6.25
Total Dissolved Solids	mg/l	1450
Total Organic Carbon	mg/l	13
T. Kjeldahl Nitrogen	mg/l	9
Nitrate	mg/l	0.1
Alkalinity, Total	mg/l	394
Chloride	mg/l	350
Total Iron	mg/l	0.2
Arsenic	mg/l	0.005
Total Barium	mg/l	< 0.2
Total Calcium	mg/l	111
Total Cadmium	mg/l	< 0.001
Total Chromium	mg/l	< 0.05
Total Lead	mg/l	< 0.02
Total Magnesium	mg/l	81
Total Manganese	mg/l	34
Mercury	mg/l	< 0.0002
Selenium	mg/l	< 0.01
Total Silver	mg/l	< 0.02
Total Zinc	mg/l	0.05

ANALYSIS PERFORMED BY: BRANDT ASSOCIATES, INC.
SAMPLING PERFORMED BY: DUFFIELD ASSOCIATES

SEE ANALYTICAL REPORT FOR EXACT DATES OF ANALYSIS, SAMPLE RECEIPT, AND COLLECTION DATE.

SAMPLE FILTERED PRIOR TO ANALYSIS.

REPORT DATE 8/23/83 C. RICHARD BIELING, DIR. OF ANALYTICAL SERVICES

NORTHERN SOLID WASTE FACILITY - 1
GROUNDWATER MONITORING PROGRAM
PERMIT YEAR 1982/83
WELL #41A

ORIGINAL (Red)

PREPARED FOR DNREC REPORT

ANALYSIS	UNITS	AUG/83
pH	pH	5.80
Total Dissolved Solids	mg/l	970
Total Organic Carbon	mg/l	5
T. Kjeldahl Nitrogen	mg/l	3.0
Nitrate	mg/l	4.8
Alkalinity, Total	mg/l	109
Chloride	mg/l	342
Total Iron	mg/l	1.2
Arsenic	mg/l	< 0.005
Total Barium	mg/l	< 0.2
Total Calcium	mg/l	48
Total Cadmium	mg/l	< 0.001
Total Chromium	mg/l	0.06
Total Lead	mg/l	< 0.02
Total Magnesium	mg/l	51
Total Manganese	mg/l	10.4
Mercury	mg/l	< 0.0002
Selenium	mg/l	< 0.01
Total Silver	mg/l	< 0.02
Total Zinc	mg/l	0.17

ANALYSIS PERFORMED BY: BRANDT ASSOCIATES, INC.
SAMPLING PERFORMED BY: DUFFIELD ASSOCIATES

SEE ANALYTICAL REPORT FOR EXACT DATES OF ANALYSIS, SAMPLE RECEIPT, AND COLLECTION DATE.

SAMPLE FILTERED PRIOR TO ANALYSIS.

REPORT DATE 8/23/83 C. RICHARD BIELING, DIR. OF ANALYTICAL SERVICES

NORTHERN SOLID WASTE FACILITY - 1
GROUNDWATER MONITORING PROGRAM
PERMIT YEAR 1982/83
WELL #48

ORIGINAL (Red)

PREPARED FOR DNREC REPORT

ANALYSIS	UNITS	AUG/83
pH	pH	7.50
Total Dissolved Solids	mg/l	13,340
Total Organic Carbon	mg/l	865
T. Kjeldahl Nitrogen	mg/l	624
Nitrate	mg/l	0.39
Alkalinity, Total	mg/l	5450
Chloride	mg/l	1700
Total Iron	mg/l	12
Benzene	ug/l	1
Ethylbenzene	ug/l	11
Methylene Chloride	ug/l	9
Tetrachloroethylene	ug/l	42
Toluene	ug/l	4
Trichloroethylene	ug/l	< 1

ANALYSIS PERFORMED BY: BRANDT ASSOCIATES, INC.
SAMPLING PERFORMED BY: DUFFIELD ASSOCIATES

SEE ANALYTICAL REPORT FOR EXACT DATES OF ANALYSIS, SAMPLE RECEIPT, AND COLLECTION DATE.

SAMPLE FILTERED PRIOR TO ANALYSIS

REPORT DATE 8/23/83 C. RICHARD BIELING, DIR. OF ANALYTICAL SERVICES

WELL: 31A

PIGEON POINT- NSWF-1

DATE:	11/19/80									
Benzene, ug/l	<1.0									
Ethlybenzene, ug/l										
Methlyene Chloride, ug/l										
Tetrachloloethylene, ug/l	<1.									
Toluene, ug/l	<0.5									
Trichloroethylene, ug/l	<1.									
Vinyl Chloride ug/l	<0.5									
Chloroform, ug/l	<5									

ORIGINAL (Red)

WELL: 31

GEON POINT- NSWF-1

DATE:	9/1/82	9/1/82								
Benzene, ug/l	<1	<2.0								
Ethlybenzene, ug/l	2	<2.0								
Methlyene Chloride, ug/l	<1	<1.0								
Tetrachloloethylene, ug/l	13	<1.0								
Toluene, ug/l	2	<2.0								
Trichloroethylene, ug/l	2	<1.0								
Chlorobenzene	ND	<1.0								
		DNREC								

ORIGINAL (Red)

NORTHERN SOLID WASTE FACILITY - 1
GROUNDWATER MONITORING PROGRAM
PERMIT YEAR 1982/83
WELL #46

ORIGINAL
(Red)

PREPARED FOR DNREC REPORT

ANALYSIS	UNITS	AUG/83
pH	pH	7.20
Total Dissolved Solids	mg/l	4460
Total Organic Carbon	mg/l	435
T. Kjeldahl Nitrogen	mg/l	506
Nitrate	mg/l	0.18
Alkalinity, Total	mg/l	3000
Chloride	mg/l	1220
Total Iron	mg/l	2.0
Benzene	ug/l	20
Ethylbenzene	ug/l	71
Methylene Chloride	ug/l	< 1
Tetrachloroethylene	ug/l	11
Toluene	ug/l	13
Trichloroethylene	ug/l	< 1

ANALYSIS PERFORMED BY: BRANDT ASSOCIATES, INC.
SAMPLING PERFORMED BY: DUFFIELD ASSOCIATES

SEE ANALYTICAL REPORT FOR EXACT DATES OF ANALYSIS, SAMPLE RECEIPT, AND COLLECTION DATE.

SAMPLE FILTERED PRIOR TO ANALYSIS

REPORT DATE 8/23/83 C. RICHARD BIELING, DIR. OF ANALYTICAL SERVICES

ORIGINAL
(Red)

NORTHERN SOLID WASTE FACILITY 1
GROUNDWATER MONITORING PROGRAM
PERMIT YEAR 1982/83
WELL #47

PREPARED FOR DNREC REPORT

ANALYSIS	UNITS	AUG/83
pH	pH	7.25
Total Dissolved Solids	mg/l	4980.00
Total Organic Carbon	mg/l	542
T. Kjeldahl Nitrogen	mg/l	624
Nitrate	mg/l	1.68
Alkalinity, Total	mg/l	3450
Chloride	mg/l	1470
Total Iron	mg/l	7.8
Benzene	ug/l	4
Ethylbenzene	ug/l	66
Methylene Chloride	ug/l	< 1
Tetrachloroethylene	ug/l	70
Toluene	ug/l	8
Trichloroethylene	ug/l	< 1

ANALYSIS PERFORMED BY: BRANDT ASSOCIATES, INC.
SAMPLING PERFORMED BY: DUFFIELD ASSOCIATES

SEE ANALYTICAL REPORT FOR EXACT DATES OF ANALYSIS, SAMPLE RECEIPT, AND COLLECTION DATE.

SAMPLE FILTERED PRIOR TO ANALYSIS

REPORT DATE 8/23/83 C. RICHARD BIELING, DIR. OF ANALYTICAL SERVICES

NORTHERN SOLID WASTE FACILITY 1
GROUNDWATER MONITORING PROGRAM
PERMIT YEAR 1982/83
EAST COLLECTION MH

ORIGINAL (Red)

PREPARED FOR DNREC REPORT

ANALYSIS	UNITS	AUG/83
pH	pH	7.30
Total Dissolved Solids	mg/l	6250
Total Organic Carbon	mg/l	582
T. Kjeldahl Nitrogen	mg/l	624
Nitrate	mg/l	0.50
Alkalinity, Total	mg/l	3860
Chloride	mg/l	1870
Total Iron	mg/l	3.5
Benzene	ug/l	34
Ethylbenzene	ug/l	69
Methylene Chloride	ug/l	< 1
Tetrachloroethylene	ug/l	23
Toluene	ug/l	14
Trichloroethylene	ug/l	< 1

ANALYSIS PERFORMED BY: BRANDT ASSOCIATES, INC.
SAMPLING PERFORMED BY: DUFFIELD ASSOCIATES

SEE ANALYTICAL REPORT FOR EXACT DATES OF ANALYSIS, SAMPLE RECEIPT, AND COLLECTION DATE.

SAMPLE FILTERED PRIOR TO ANALYSIS

REPORT DATE 8/23/83 C. RICHARD BIELING, DIR. OF ANALYTICAL SERVICES

WELL: 29

PIGEON POINT- NSWF-1

DATE:	8/30/82	8/30/82	3/16/84							
Benzene, ug/l	3	<2.0	<1.							
Ethlybenzene, ug/l	7	<2.0	<1.							
Methylene Chloride, ug/l	28	<1.0	<1.							
Tetrachloloethylene, ug/l	5	<2.0	<1.							
Toluene, ug/l	4	<2.0	<1.							
Trichloroethylene, ug/l	ND	<1.0	<1.							
Chlorobenzene	3	<1.0								
	Brandt	DNREC								

ORIGINAL (Red)

WELL: 23A

PIGEON POINT- NSWF-1

DATE:	11/20/80
Benzene, ug/l	<1.
Ethlybenzene, ug/l	
Methlyene Chloride, ug/l	
Tetrachloloethylene, ug/l	<1.0
Toluene, ug/l	<0.5
Trichloroethylene, ug/l	<1.
Vinyl Chloride, ug/l	<0.5
Chloroform	<5

ORIGINAL (Red)

WELL: 23

PIGEON POINT- NSWF-1

DATE:	8/30/82	8/30/82								
Benzene, ug/l	1	<2.0								
Ethlybenzene, ug/l	2	<2.0								
Methylene Chloride, ug/l	2	<1.0								
Tetrachloloethylene, ug/l	3	<1.0								
Toluene, ug/l	4	<2.0								
Trichloroethylene, ug/l	ND.	<1.0								
Chlorobenzene	4	<1.0								
	Brandt	DNREC								

ORIGINAL (Red)

WELL: 27 R

GEON POINT- NSWF-1

DATE:	3/12/84										
Benzene, ug/l	<1										
Ethlybenzene, ug/l	<1										
Methylene Chloride, ug/l	<1										
Tetrachloloethylene, ug/l	<1										
Toluene, ug/l	<1										
Trichloroethylene, ug/l	<1										

ORIGINAL (Red)

ORIGINAL

(Red)

ORIGINAL
(Red)

NORTHERN SOLID WASTE FACILITY - 1
GROUNDWATER MONITORING PROGRAM
PERMIT YEAR 1982/83
WELL #28

PREPARED FOR DNREC REPORT

ANALYSIS	UNITS	AUG/83
pH	pH	6.3
Total Dissolved Solids	mg/l	6030
Total Organic Carbon	mg/l	4
T. Kjeldahl Nitrogen	mg/l	4.2
Nitrate	mg/l	0.6
Alkalinity, Total	mg/l	122
Chloride	mg/l	386
Total Iron	mg/l	3
Arsenic	mg/l	0.011
Total Barium	mg/l	< 0.2
Total Calcium	mg/l	80
Total Cadmium	mg/l	0.002
Total Chromium	mg/l	< 0.05
Total Lead	mg/l	< 0.02
Total Magnesium	mg/l	51
Total Manganese	mg/l	19
Mercury	mg/l	< 0.0005
Selenium	mg/l	< 0.01
Total Silver	mg/l	< 0.02
Total Zinc	mg/l	0.65

ANALYSIS PERFORMED BY: BRANDT ASSOCIATES, INC.
SAMPLING PERFORMED BY: DUFFIELD ASSOCIATES

SEE ANALYTICAL REPORT FOR EXACT DATES OF ANALYSIS, SAMPLE RECEIPT, AND COLLECTION DATE.

SAMPLE FILTERED PRIOR TO ANALYSIS.

REPORT DATE 8/23/83 C. RICHARD BIELING, DIR. OF ANALYTICAL SERVICES

ORIGINAL
(Red)

NORTHERN SOLID WASTE FACILITY - 1
GROUNDWATER MONITORING PROGRAM
PERMIT YEAR 1982/83
WELL #29

REPARED FOR DNREC REPORT

NALYSIS	UNITS	AUG/83
H	pH	5.45
otal Dissolved Solids	mg/l	646
otal Organic Carbon	mg/l	9
Kjeldahl Nitrogen	mg/l	18
trate	mg/l	< 0.05
kalinity, Total	mg/l	140
hloride	mg/l	309
otal Iron	mg/l	26
rsenic	mg/l	< 0.005
otal Barium	mg/l	< 0.2
otal Calcium	mg/l	21
otal Cadmium	mg/l	< 0.001
otal Chromium	mg/l	0.06
otal Lead	mg/l	< 0.02
otal Magnesium	mg/l	16
otal Manganese	mg/l	1.63
ercury	mg/l	0.0006
elenium	mg/l	< 0.01
otal Silver	mg/l	< 0.02
otal Zinc	mg/l	0.06

NALYSIS PERFORMED BY: BRANDT ASSOCIATES, INC.
AMPLING PERFORMED BY: DUFFIELD ASSOCIATES

EE ANALYTICAL REPORT FOR EXACT DATES OF ANALYSIS, SAMPLE RECEIPT, AND
OLLECTION DATE.

AMPLE FILTERED PRIOR TO ANALYSIS.

EPORT DATE 8/23/83 C. RICHARD BIELING, DIR. OF ANALYTICAL SERVICES

POTOMAC FM: MONITOR WELL 4/A - DOWNGRADIENT
PIGEON POINT

ORIGINAL (Red)

CONTAMINANT	WELL CONC. mg/l	MCL mg/l
As		0.05
Ba		1
Cd	<0.1	0.01
Cr	<0.1	0.05
Pb	<0.1	0.05
Hg	<0.0015	0.002
NO_3-N		10
Ag		0.05

6-16-80

CONTAMINANT	WELL CONC.	MCL
As		0.05
Ba	<0.1	1
Cd	<0.1	0.01
Cr	<0.1	0.05
~~Pb~~	~~0.12~~	~~0.05~~
Hg	<0.0015	0.002
NO_3-N	<0.11	10
Ag	<0.1	0.05

8-27-80

CONTAMINANT	WELL CONC.	MCL
As	<0.01	0.05
Ba	<0.1	1
Cd	<0.1	0.01
Cr	<0.1	0.05
Pb	<0.1	0.05
Hg	<0.0015	0.002
NO_3-N	<0.11	10
Ag	<0.1	0.05

11-17-80

CONTAMINANT	WELL CONC.	MCL

POTOMAC FM. MONITOR WELL 37A - UPGRADIENT
PIGEON POINT

ORIGINAL (Red)

CONTAMINANT	WELL CONC. (mg/l)	MCL (mg/l)
As		0.05
Ba	<0.1	1
Cd	<0.1	0.01
Cr	<0.1	0.05
~~Pb~~	~~0.11~~	~~0.05~~
Hg	<0.0015	0.002
NO_3-N	<0.11	10
Ag	<0.1	0.05

8-27-80

CONTAMINANT	WELL CONC. (mg/l)	MCL (mg/l)
As		0.05
Ba	<0.1	1
Cd	<0.1	0.01
Cr	<0.1	0.05
Pb	<0.1	0.05
Hg	<0.0015	0.002
NO_3-N	<0.11	10
Ag	<0.1	0.05

11-19-80

CONTAMINANT	WELL CONC.	MCL

CONTAMINANT	WELL CONC.	MCL

POTOMAC FM. MONITOR WELLS

PIGEON POINT

ORIGINAL (Red)

WELL #37A UP

CONTAMINANT	WELL CONC.	MCL
Arsenic		0.05 mg/l
Barium	<0.1 mg/l	1 mg/l
Cadmium	<0.1 mg/l	0.01 mg/l
Chromium	<0.1 mg/l	0.05 mg/l
Lead	0.11 mg/l	0.05 mg/l
Mercury	<0.0015 mg/l	0.002 mg/l
NO3-N	<0.11 mg/l	10 mg/l
Silver	<0.1 mg/l	0.05 mg/l

WELL #41A

CONTAMINANT	WELL CONC.	MCL
Arsenic		0.05 mg/l
Barium	<0.1 mg/l	1 mg/l
Cadmium	<0.1 mg/l	0.01 mg/l
Chromium	<0.1 mg/l	0.05 mg/l
Lead	0.12 mg/l	0.05 mg/l
Mercury	<0.0015 mg/l	0.002 mg/l
NO3-N	<0.11 mg/l	10 mg/l
Silver	<0.1 mg/l	0.05 mg/l

CONTAMINANT	WELL CONC.	MCL

CONTAMINANT	WELL CONC.	MCL

POTOMAC FM. MONITOR WELL 28-DOWNGRADIENT
PIGEON POINT

ORIGINAL (Red)

CONTAMINANT	WELL CONC. mg/l	MCL mg/l
As	—	0.05
Ba	—	1
Cd	<0.1	0.01
Cr	<0.1	0.05
Pb	<0.1	0.05
Hg	<0.0015	0.002
NO_3-N	—	10
Ag	—	0.05

6-16-80

CONTAMINANT	WELL CONC. mg/l	MCL mg/l
As	—	0.05
Ba	<0.1	1
Cd	<0.1	0.01
Cr	<0.1	0.05
~~Pb~~	~~0.12~~	~~0.05~~
Hg	<0.0015	0.002
NO_3-N	<0.11	10
Ag	<0.1	0.05

8-26-80

CONTAMINANT	WELL CONC. mg/l	MCL mg/l
As	<0.01	0.05
Ba	<0.1	1
Cd	<0.1	0.01
Cr	<0.1	0.05
~~Pb~~	~~0.5~~	~~0.05~~
Hg	<0.0015	0.002
NO_3-N	<0.11	10
Ag	<0.1	0.05

11-17-80

CONTAMINANT	WELL CONC.	MCL

POTOMAC FMI MONITOR WELL 29-DOWNGRADIENT
PIGEON PT.

ORIGINAL (Red)

CONTAMINANT	WELL CONC. (mg/l)	MCL (mg/l)
As	–	0.05
Ba	–	1
Cd	<0.1	0.01
Cr	<0.1	0.05
Pb	<0.1	0.05
Hg	<0.0015	0.002
NO_3-N	—	10
Ag	—	0.05

6-16-80

CONTAMINANT	WELL CONC. (mg/l)	MCL (mg/l)
As		0.05
Ba	<0.1	1
Cd	<0.1	0.01
Cr	<0.1	0.05
Pb	<0.1	0.05
Hg	<0.0015	0.002
NO_3-N	<0.11	10
Ag	<0.1	0.05

8-26-80

CONTAMINANT	WELL CONC.	MCL
As	<0.01	0.05
Ba	<0.1	1
Cd	<0.1	0.01
Cr	<0.1	0.05
Pb	<0.1	0.05
Hg	<0.0015	0.002
NO_3-N	<0.11	10
Ag	<0.1	0.05

11-18-80

CONTAMINANT	WELL CONC.	MCL

WELL: 32A

PIGEON POINT- NSWF-1

DATE:	11/20/80									
Benzene, ug/l	<1									
Ethlybenzene, ug/l										
Methlyene Chloride, ug/l										
Tetrachloloethylene, ug/l	<1.0									
Toluene, ug/l	<0.5									
Trichloroethylene, ug/l	<1.									
Vinyl Chloride	<0.5									
Chloroform	<5.									

ORIGINAL (Red)

WELL: 41 A

PIGEON POINT- NSWF-1

DATE:	8/31/82	8/31/82								
Benzene, ug/l	<1.	<2.0								
Ethlybenzene, ug/l	9.	<2.0								
Methylene Chloride, ug/l	2.	<1.0								
Tetrachloloethylene, ug/l	6.	<1.0								
Toluene, ug/l	6.	<2.0								
Trichloroethylene, ug/l	ND	<1.0								
Chlorobenzene	7.	<1.0								
	Brandt	DNREC								

ORIGINAL (Red)

WELL: 41

PIGEON POINT- NSWF-1

DATE:	11/21/80	11/21/80	3/16/84							
Benzene, ug/l	<1.0	<1.0	<1.							
Ethlybenzene, ug/l			<1.							
Methlyene Chloride, ug/l			10.							
Tetrachloloethylene, ug/l	<1.0	<1.0	<1.							
Toluene, ug/l	<0.5	<0.5	<1.							
Trichloroethylene, ug/l	<1.0	<1.0	<1.							
Vinyl Chloride	<0.5	<0.5								
Chloroform	<5	<5								

ORIGINAL (Red)

ORGANIC COMPOUNDS

Well 148 DATE 8/4/82

Chloromethane, ug/l.	<10
Bromomethane, ug/l.	<10
Vinyl Chloride, ug/l.	<10
Chloroethane, ug/l.	<10
Methylene Chloride, ug/l.	<10
Trichlorofluoromethane, ug/l	<10
1,1- Dichloroethane, ug/l.	<10
trans-1,2- Dichloroethylene ug/l.	<10
Chloroform, ug/l.	<10
1,2 - Dichloroethane, ug/l.	<10
1,1,1-Trichloroethane, ug/l	<10
Carbon Tetrachloride, ug/l.	<10
Bromodichloromethane, ug/l	<10
1,2-Dichloropropane, ug/l.	<10
trans-1,3-Dichloropropene ug/l.	<10
Trichloroethylene, ug/l.	<10
Dibromochloromethane, ug/l.	<10
cis-1,3-Dichloropropene ug/l.	<10
1,1,2-Trichloroethane, ug/l	<10
Benzene, ug/l.	48
2-Chloroethylvinyl Ether ug/l.	<10
Bromoform, ug/l.	<10
Tetrachloroethylene, ug/l.	<10
1,1,2,2-Tetrachloroethane ug/l.	<10
Toluene, ug/l	54
Chlorobenzene, ug/l.	<10
Ethylbenzene, ug/l.	20
Acrylonitrile, mg/l.	
1,1-Dichloroethylene, ug/l.	<10

ORIGINAL (Red)