APPENDIX C

WELL DEVELOPMENT LOGS

Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 796887
Form Completed by: Lee FLIPPEN
Well Developed by (person/firm): Lee Flippen / IT Corp.

Parcel No.: HR 77Q
Well No.: MW01
Date started: 10-5-01

Monitoring Well Information

Development Method: Surge + purge
Development Equipment: whale pumps, 12v. Battery
Horiba U-10 #4014, Aquafast II #2079, Heron #2089
Casing Diameter: 2" .163

Beginning Measurments
Depth to Water (ft): 6.77 TOC
Total depth of Well (ft): 53.9 ft TOC

PID 2.4 BZ 1.1

screened = 33.3 - 53.3 ft.

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date) (Purge Rate, Pump Position, Misc.)
09:20	Ø	6.77	5.67	.111	999+	4.54	18.0	Red	Depth 51 ft. PR .75 gpm
09:35	11.25	37.20	5.80	.085	999+	4.01	20.9	Red	" Depth 51 ft. PR .35 gpm
09:50	16.50	37.42	5.70	.092	999+	3.96	19.3	Red	Depth 51 ft. PR .3 gpm
10:05	21.0	39.65	5.63	.083	999+	4.33	18.9	Red	Depth 51 ft. PR .3 gpm
10:20	25.5	41.84	5.64	.085	999+	4.15	19.8	Red	Depth 51 ft. PR .2 gpm
10:35	28.5	42.08	5.61	.065	999+	4.23	19.5	Red	Depth 49 ft PR .2 gpm
10:50	31.5	43.50	5.58	.068	999+	4.56	21.3	Red	Depth 51 ft PR .1 gpm

TD - DTW = WC x 2'/4' well = One PV x 5 = Min PV + H20 to install well = Minimum H20 to remove

53.9 - 6.77 = 47.13 x .163 = 7.68 x 5 = 38.4 + 85g = 123.4g

OC'd 10/10/01 [illegible]

Parcel No.: HR 77Q
Well ID: MW01
Date: 10-5-01
Lee FLIPPEN

10-8-01 PID 0.7 BZ 0.0 BTW = 6.2 ft WC = 47.7 ft.

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
10:55	Pumps	stopped	working	– Bottom	whale	pump is	Dead – Replaced	pump	Changed Damaged pump And restarted parameters
11:50	31.5	41.20	5.55	.064	999+	4.57	21.9	Red	Depth 50 ft. PR .25
12:05	35.25	44.08	5.53	.056	999+	5.50	20.4	Red	" "
12:20	39.0	Below 1ST Pump	5.45	.052	999+	4.86	21.2	Red	Depth 53 ft. PR .2 gpm — 2hrs.
12:25				Pumps stopped –	Well	Dry			Well Dry – wait 20 min. And check W.L.
12:45	39.0	42.90	Well	Did not	Recharge	80% = 10.4 ft/20 min			= .52 ft/min Recharge Rate 10-5-01 ~~Lee Flippen~~
10-8-01 09:45	39.0	6.20	5.14	.064	78	6.51	16.2	cloudy	Depth 33 ft. PR .25 gpm
10:00	42.75	20.38	5.66	.062	246	6.30	17.2	cloudy	Depth 35 ft. PR .25 gpm
10:15	46.5 LF 10-8 46.8	26.20	5.61	.053	326	6.95	17.4	cloudy	Depth 37 ft PR .20
10:17	Pumps	stopped	–		~~260~~ LF 10-8				– stopped parameter to repair whale pump rig –
11:10	46.5 LF 10-8 46.5	28.5	5.55	.039	260	6.38	18.1	cloudy	Depth 37 ft. PR .25 gpm
11:25	50.25	33.2	5.50	.049	300	6.47	18.2	cloudy	Depth 39 ft. PR .25 gpm
11:40	54.0	36.58	5.56	.051	356	6.65	18.3	cloudy	– Moved to 51 ft. – Depth 41 ft. PR .25 gpm — 3hrs.

Parcel No.: HR77Q
Well ID: MW01
Date: 10-8-01

10-9-01 PID 0.0 BZ 0.0 WC=46.27 DTW = 7.63

Time 24hr	54.0 Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
3hrs 11:55	57.75	38.81	5.49	.047	999+	6.72	18.2	Red	Depth 51 ft PR .25 gpm
12:10	61.5	42.02	5.57	.055	886	6.50	18.3	Red	Depth 51 ft PR .20 gpm
12:25	64.5	46.02	5.40	.047	999+	5.84	18.1	Red	" "
4hrs 12:40	67.5	Below Top pump	5.37	.047	999+	5.11	18.0	Red	" "
12:55	70.5	"	5.38	.047	999+	5.01	18.0	Red	" "
13:00	Well Ran Dry - wait 20 min.								well Dry — wait 20 min. And check recharge Rate.
13:20	70.5	42.43	Well did not recharge 80%						Recharge Rate = 11.47 ft / 20 min = .57 ft/min. ~~[illegible]~~ 10-8-01
10-9-01 08:25	70.5	7.63	4.81	.088	1416	7.34	16.4	Red	Depth 43 ft. PR .25 gpm
08:40	74.25	24.30	5.26	.043	549	7.24	17.4	cloudy	Depth 45 ft. PR .25 gpm
08:55	78.0	33.52	5.33	.043	328	6.96	17.0	cloudy	Depth 47 ft PR .25 gpm
5hrs 09:10	81.75	37.70	5.35	.044	1287	6.97	17.4	cloudy	Depth 49 ft. PR .25 gpm
09:25	85.5	40.71	5.45	.043	1615	6.81	17.6	cloudy	Depth 51 ft. PR .20 gpm
09:40	88.5	Below pump	5.29	.039	999+	6.39	17.5	Red	Depth 53 ft. PR .2 gpm

Parcel No.: HR 77Q MW01
Well ID: MW 01
Date: 10-8-01

Time 24hr	88.5 Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
4hrs 09:55	91.5	Below Pump	5.33	.041	999+	6.46	17.6	Red	Depth 53 ft. PR .10 gpm
10:00	91.5	Well Ran Dry							3rd time Well Ran Dry
:									Well Development Completed ~~[illegible]~~ 10-8-01
:									5 3/4 hrs. Development Time
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Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 796887.11020300 K.H. 10/31/01
Form Completed by: J. Alexander
Well Developed by (person/firm): J. Alexander / IT Corp. K.H. 10/31/01

Parcel No.: HR 77Q
Well No.: MW02
Date started: 10 29 01

Monitoring Well Information

Development Method: surge + pump
Development Equipment: Grunfos, Horiba U10, Orion turbidimeter, WL indicator
Casing Diameter: 4"

Beginning Measurments
Depth to Water (ft): 1.89' bTOC
Total depth of Well (ft): 102.20' bTOC

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date) (Purge Rate, Pump Position, Misc.)
10:50	Ø	1.89	6.20	.165	>999	4.56	18.2	red opaque	1.5 gpm
11:05	22.5	21.82	5.69	.085	>999	4.00	17.7	"	1.5 gpm
11:20	45	31.15	5.59	.056	>999	5.47	18.1	"	1.5 gpm
11:35	67.5	35.10	5.57	.053	>999	5.62	18.8	red cloudy	1.5 gpm
11:50	90	38.32	5.58	.049	>999	6.07	18.7	"	1.5 gpm
12:05	112.5	40.25	5.58	.050	>999	6.23	19.0	"	1.5
13:45	112.5	2.70	5.53	.034	>999	6.37	18.2	"	2.5 gpm

TD - DTW = WC x 2' (4') well = One PV x 5 = Min PV + H20 to install well = Minimum H20 to remove

102.2 - 1.89 = 100.31 x .653 = 65.5 gal x 5 = 327.5 gal + 300 gal = 627.5

QC'd [signature] 10/31/01

Parcel No.: HR 77Q
Well ID: MW02
Date: 10 29 01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
14:00	150	32.45	5.49	.046	318	6.71	18.1	cloudy	1 gpm 4 ft off bottom
14:15	187.5	42.20	5.35	.041	79	6.46	17.3	Sl. cloudy	1 gpm 6 ft "
14:30	202.5	42.15	5.11	.026	15.9	6.44	17.5	clear	1 gpm 8 ft "
14:45	217.5	40.92	5.15	.025	7.2	6.09	17.5	"	1 gpm 10 ft "
15:00	232.5	40.80	5.15	.026	6.3	7.00	17.5	"	" 12 ft "
15:15	247.5 ~~232.5~~	40.85	5.16	.026	5.1	7.44	17.5	"	" 14 ft "
15:30	262.5	40.82	5.15	.025	6.2	6.80	17.4	"	" 14 ft "
15:45	277.5	40.87	5.19	.025	5.4	6.32	17.4	"	" 16 ft "
16:00	297.5	40.90	5.19	.025	7.2	6.67	17.4	"	" 18 ft "
10/30 08:40	297.5	1.90	4.94	.078	8.0	7.44	16.7	clear	1.5 gpm 20 ft "
08:55	320	22.02	5.32	.042	7.6	7.29	16.6	"	1 gpm 20 ft "
09:10	335	27.25	5.25	.031	4.8	7.26	16.6	"	1 gpm 20 ft "

Parcel No.: HR 77Q
Well ID: MW02
Date: 10 30 01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
09:25	350	29.18	5.18	.027	2.6	7.41	17.3	clear	1 gpm 20ft off bottom
09:40	365	30.48	5.22	.026	2.7	7.94	16.9	"	" " "
09:55	380	31.52	5.16	.025	2.6	7.51	17.3	"	" " " "
10:10	395	33.08	5.18	.027	2.3	7.65	17.2	"	" " " "
10:25	410	33.78	5.13	.025	1.9	7.47	17.6	"	" " " "
10:40	425	35.35	5.18	.028	0.9	7.64	17.8	"	" " " "
10:55	440	36.32	5.16	.025	0.0	6.85	17.9	"	" " " "
11:10	455	36.66	5.12	.024	1.0	7.64	18.2	"	" " " "
11:25	470	38.25	5.16	.025	1.6	7.66	18.1	"	" " " "
11:40	485	38.95	5.14	.025	1.0	7.85	18.2	"	" " " "
11:55	500	39.24	5.09	.025	0.9	7.56	18.2	"	" " " "
12:10	515	39.54	5.11	.023	1.0	7.90	18.4	"	" " " "

HR

Parcel No.: 77 Q
Well ID: MW02
Date: 10 30 01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
12:25	530	39.62	5.10	.023	1.2	7.46	18.6	Clear	1gpm 20 ft off bottom
12:40	545	39.60	5.11	.022	1.0	7.64	18.7	"	" " "
12:55	560	39.54	5.09	.022	0.7	8.13	18.6	"	" " "
14:30	560	4.25	5.12	.021	0.7	8.17	18.9	"	" " "
14:45	575	20.26	5.03	.027	0.6	7.76	18.2	"	" " "
15:00	590	26.53	5.06	.027	1.4	7.62	18.2	"	" " "
15:15	605	29.95	5.04	.025	1.2	7.37	18.2	"	" " "
15:30	620	32.28	5.01	.024	1.0	7.22	18.2	"	" " "
15:45	635	34.19	4.99	.024	1.2	7.20	18.2	"	" " "
:	Volume	requirement			met.	Stabilization	and		
:	low	turbidity.		Collect	photo	sample.			
:						10	30 01		

Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 800486 035 ITE05
Form Completed by: Zach Parham
Well Developed by (person/firm): Zach Parham / IT

Parcel No.: 77Q
Well No.: HR-77Q-MW03
Date started: 9.13.01

Monitoring Well Information

Development Method: surge/purge
Development Equipment: whale pump/hose, Turbidity meter, Horiba U-10, water level meter, PID
Casing Diameter: 2"

Beginning Measurments
Depth to Water (ft): 6.76' btoc
Total depth of Well (ft): 27.95' btoc

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date) (Purge Rate, Pump Position, Misc.)
10:40	0.0	6.76'	5.98	0.220	>999	9.07	27.81	muddy	began development on 9.13.01. PR=0.75 gpm, pump at bottom of well.
10:55	11.25	17.76'	5.91	0.118	>999	7.81	22.28	muddy	—
11:10	22.5	21.75'	6.03	0.098	>999	7.11	22.87	muddy	PR=0.375 gpm
11:25	28.12	23.01'	5.78	0.063	>999	7.57	24.92	muddy	PR=0.25 gpm
11:40	33.74	23.40'	5.64	0.052	>999	7.65	24.90	muddy	—
11:55	39.36	23.53'	5.61	0.046	>999	7.54	25.97	muddy	stopped pump
14:25	39.36	9.40'	—	—	—	—	—	—	started pump @ PR=0.25 gpm pump at 25.95' btoc

TD - DTW = WC x 2'/4' well = One PV x 5 = Min PV + H20 to install well = Minimum H20 to remove

27.95' - 6.76' = 21.19' x 0.163 = 3.45 gal x 5 = 17.27 gal + 13 gal = 30.27 gal.

Reviewed by [illegible] 09/18/01

Parcel No.: 77Q
Well ID: HR-77Q-MW03
Date: 9.13.01 / 9.14.01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
14:40	43.11	14.89'	5.66	0.044	384	11.54	23.87	cloudy	—
14:55	46.86	17.79'	5.91	0.049	844	11.44	23.17	cloudy	—
2hr 15:10	50.61	19.13'	5.81	0.048	308	9.27	23.06	cloudy	pump lowered to bottom of well.
15:25	54.36	20.02'	5.62	0.044	282	8.77	23.22	cloudy	—
15:40	58.11	20.89'	5.61	0.043	196	8.44	23.19	cloudy	surged well for 5 min. 9.17.01
15:55	61.86	21.16'	5.49	0.037	387	8.65	23.14	cloudy	—
3hr 16:10	65.61	21.36'	5.58	0.034	135	8.00	22.98	cloudy	—
16:25	69.36	21.64'	5.50	0.035	102	8.03	22.12	clear/cloudy	shut down development for 9.13.01
09:20	69.36	6.96'	—	—	—	—	—	—	began development for 9.14.01 surged well, pump @ bottom, PR=.25 gpm
09:35	73.11	13.38'	5.22	0.031	229	4.10	23.7	muddy	—
09:50	76.86	14.20'	5.41	0.033	233	4.42	24.2	muddy	pump raised to 22.95' toc
4hr 10:05	80.61	17.15'	5.48	0.038	258	4.89	24.1	muddy	—
10:20	84.36	19.10'	5.46	0.038	206	4.95	24.6	muddy	—

Parcel No.: 77Q
Well ID: HR-77Q-MW03
Date: 9.14.01 / 9.17.01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
10:35	88.11	20.72	5.43	0.038	168	4.51	25.0	clear/cloudy	pump lowered to 25.95' btoc.
10:50	91.86	21.49	5.35	0.030	285	4.14	25.0	cloudy/muddy	—
5hr 11:05	95.61	22.31'	5.35	0.030	373	4.07	24.5	muddy	pump lowered to bottom of well.
11:20	99.36	23.35'	5.23	0.025	678	3.28	24.4	muddy	End of development for 9.14.01
11:05	99.36	7.04'	—	—	—	—	—	—	began development for 9.17.01. Pump @ 25' btoc. PR=0.132 gpm
11:20	101.34	14.30'	5.42	0.044	190	3.32	25.8	cloudy	—
11:35	103.32	13.30'	5.44	0.036	117	3.78	25.8	clear/cloudy	—
6hr 11:50	105.30	13.34'	5.50	0.039	63	3.08	25.3	clear	—
12:05	107.28	13.91'	5.59	0.037	71	3.17	26.8	clear	raised pump to 22' btoc.
12:20	109.26	14.48'	5.66	0.038	175	3.70	26.6	cloudy	—
12:35	111.24	15.66'	5.75	0.038	161	3.79	26.8	cloudy	—
7hr 12:50	113.22	16.36'	5.71	0.038	118	3.85	26.5	cloudy ~~mi~~ (3P 9.17.01)	—
13:05	115.20	16.83'	5.61	0.037	82	3.84	25.8	clear	—

Parcel No.: 770
Well ID: HB-770-MW03
Date: 9.17.01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
13:20	117.18	17.27'	5.59	0.035	64	3.49	26.6	clear	
13:35	119.16	17.61'	5.57	0.034	86	3.51	25.4	clear	
1hr 13:50	121.14	17.86'	5.54	0.035	65	3.76	24.2	clear	
14:05	123.12	18.43'	5.51	0.034	78	3.34	23.4	clear	Ended development. Took 1L photo sample
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Jacob Barton 9.17.01

Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 796887
Form Completed by: R. Goins
Well Developed by (person/firm): R. Goins / IT Corp

Parcel No.: HR-77Q
Well No.: MW04
Date started: 9/17/01

Monitoring Well Information

Development Method: Surge and Purge
Development Equipment: Whale pump, 210 gal poly Tank, Horiba U-10, Orion Turbidity Meter, Water level meter, PID
Casing Diameter: 2 in

Beginning Measurments
Depth to Water (ft): 18.36' TOC
Total depth of Well (ft): 29.96' TOC

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date) (Purge Rate, Pump Position, Misc.)
11:25	—	18.36	5.59	0.104	999	3.54	21.8	chalky (tan)	0.33' from bottom 0.92 gal/min
11:32	6.44	—	—	—	—	—	—	—	Well is dry
08:44	6.44	21.04	5.67	0.099	999	4.41	20.5	chalky (tan)	9/18/01 0.5' from bottom 0.143 gal/min
08:55	8.01	—	—	—	—	—	—	—	0.13 gal/min
08:59	8.53	23.62	5.82	0.083	999	5.83	20.8	chalky (tan)	0.13 gal/min raised pump 1 ft
09:14	10.48	25.50	5.87	0.091	999	6.12	21.2	"	0.125 gal/min
09:29	12.36	27.35	5.80	0.101	999	5.85	22.3	"	0.125 gal/min lowered pump to 0.5' from bottom

TD - DTW = WC x 2'/4' well = One PV x 5 = Min PV + H20 to install well = Minimum H20 to remove

29.96 - 18.36 = 11.60 x 0.163 = 1.9 gal x 5 = 9.5 + 12 gal = 21.5 gal

Parcel No.: HR-TTQ
Well ID: MW04
Date: 9/18/01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
09:35	13.11	—	—	—	—	—	—	—	0.12 gal/min
09:40	13.71	—	—	—	—	—	—	—	Well is dry
12:17	13.71	26.4	5.86	0.086	999	5.49	27.2	chalky (tan)	0.05 gal/min
12:26	14.16	—	—	—	—	—	—	—	0.03 gal/min
12:32	14.35	27.45	5.88	0.089	999	5.23	26.5	chalky (tan)	0.03 gal/min
12:47	14.80	28.09	5.85	0.084	999	5.61	27.3	"	0.03 gal/min
13:02	15.25	28.41	5.98	0.088	999	5.75	27.6	"	0.02 gal/min
13:03	15.27	—	—	—	—	—	—	—	Well is dry
13:55	15.27	26.60	6.10	0.095	999	6.03	26.5	chalky (tan)	Collected photo sample w/poly bailer
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Final Entry
Reynold Morris 9/18/01

Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: ~~796887~~ OKA 800468
Form Completed by: Lee FLIPPEN
Well Developed by (person/firm): Lee FLIPPEN / IT Corp.

Parcel No.: HR 78Q
Well No.: MW01
Date started: 10-3-01

Monitoring Well Information

Development Method: Surge + purge
Development Equipment: whale pumps, Horiba U-10 #5441, Aquafas T II #2079, Heron Water Finder no #
Casing Diameter: 2" .163

Beginning Measurments
Depth to Water (ft): 16.98 ft. TOC
Total depth of Well (ft): 40.25 ft TOC

PID 1.8 BZ 0.0 Screen 22.8 - 37.8 ft.

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date) (Purge Rate, Pump Position, Misc.)
									- Surged Entire Screen -
13:45	Ø	16.98	5.50	.125	999+	.05	21.5	TAN	Depth 37 ft. PR .75 gpm
14:00	11.25	31.58	5.38	.073	999+	1.96	19.3	TAN	Depth 37 ft. PR .75 gpm
14:15	22.5	Below 1st Pump	5.59	.083	999+	1.24	19.3	TAN	Depth 37 ft. PR .3 gpm
14:30	27.0	34.1	5.45	.059	999+	.96	23.1	TAN	Depth 37 ft. PR .2 gpm
1 hr. 14:45	30.0	31.20	5.36	.043	999+	2.08	21.9	TAN	Depth 37 ft. PR .3 gpm
15:00	34.5	30.68	5.28	.034	301	4.81	20.1	TAN	Depth 37 ft. PR .3 gpm
15:15	39.0	30.23	5.25	.033	87	4.38	19.3	cloudy	Depth 37 ft. PR .3 gpm

TD - DTW = WC x 2'/4' well = One PV x 5 = Min PV + H20 to install well = Minimum H20 to remove

40.25 - 16.98 = 23.27 x .163 = 3.79 x 5 = 18.95 + 50g = 68.95 g

acid [illegible]
10/4/01

Parcel No.: HR78Q
Well ID: MW01
Date: 10-3-01

10-4-01 PID 9.8 BZ 0.0, 20min PID 1.8 BZ 0.0, WC = 23.27 ft. Lee FLIPPEN

	Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
	15:30	43.5	31.03	5.22	.031	94	4.31	18.9	Clear	Depth 37 ft. PR. 3 gpm
2hrs	15:45	48.0	31.38	5.16	.029	77	4.17	18.5	Clear	Depth 37 ft. PR. 3 gpm
	16:00	52.5	31.51	5.11	.027	42	4.06	18.3	Clear	-stopped parameters- ~~Lee Flippen~~ 10-3-01
	10-04-01 —	PID =	9.8	BZ 0.0,	20min.	PID = 1.8	BZ =	0.0		WC = 23.27 ft.
	09:00	52.5	16.88	4.84	.054	136	4.92	18.2	Clear	Depth 22.5 ft. PR. 3 gpm
	09:15	57.0	21.02	5.27	.027	60	4.34	19.0	Clear	Depth 24.5 ft. PR. 3 gpm
	09:30	61.5	Below Top pump	5.28	.024	39	4.49	19.1	Clear	Depth 26.5 ft. PR. 3 gpm
3hrs	09:45	66.0	23.58	5.30	.025	55	4.26	18.8	Clear	Depth 28.5 ft PR. 3 gpm
	10:00	70.5	24.63	5.27	.024	55	4.17	18.6	Clear	- Target P.V. Reached - Depth 28.5 ft PR. 3 gpm
	10:15	75.0	25.42	5.26	.023	25	4.37	18.7	Clear	Depth 30.5 ft. PR. 3 gpm
	10:30	79.5	25.77	5.25	.023	24	4.26	18.8	Clear	" "
4hrs	10:45	84.0	25.85	5.26	.023	12.5	4.23	18.6	Clear	Depth 30.5 ft. PR. 3 gpm
	11:00	88.5	25.83	5.25	.023	9.0	4.21	19.0	Clear	Depth 32.5 ft. PR. 3 gpm

Parcel No.: HR 78 Q
Well ID: MW 01
Date: 10-4-01
Lee FLIPPEN

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
11:15	93.0	25.54	5.23	.021	66	4.07	18.5	Clear	Depth 32.5 ft PR .3 gpm
11:30	97.5	25.10	5.24	.022	19.7	3.95	19.5	Clear	" "
11:45	102.0	24.90	5.24	.022	15.5	4.03	19.9	Clear	Depth 32.5 PR .3 gpm
12:00	106.5	24.83	5.24	.022	11.0	3.90	20.0	Clear	Depth 34.5 PR .3 gpm
12:15	111.0	24.69	5.28	.022	10.1	4.07	21.6	Clear	Depth 34.5 PR .3 gpm
12:30	115.5	24.76	5.24	.022	5.7	4.44	20.3	Clear	Depth 34.5 PR .3 gpm
12:45	120.0 LF ~~112.0~~	24.77	5.24	.022	2.7	4.45	20.7	Clear	Depth 34.5 PR .3 gpm
13:00	124.5	24.72	5.23	.022	1.5	4.42	21.2	Clear	Took 1 l. Photo Sample — Well Development Completed. ~~[illegible]~~ 10-4-01
:	— 6¼ hrs development Time. —								
:									
:									
:									
:									

hrs

6 hrs

~~[illegible]~~ 10-4-01

Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 796887
Form Completed by: Lee FLIPPEN
Well Developed by (person/firm): Lee FLIPPEN / IT Corp

Parcel No.: HR78Q
Well No.: MW02
Date started: 10-11-01

Monitoring Well Information

Development Method: surge + purge
Development Equipment: GroundFos pump + control
Box # 13944, Horiba U-10 # 4014, Aquafas III # 2085, Heron # 2089
Casing Diameter: 4" .653

Beginning Measurments
Depth to Water (ft): 13.95 ft. TOC
Total depth of Well (ft): 98.72 ft. TOC

PID. 0.0 BZ 0.0 screen 75-95 ft WC = 84.77 ft

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date) (Purge Rate, Pump Position, Misc.)
10:25	Ø	13.95	6.00	.186	25	5.63	18.0	cloudy	Depth 94 ft. PR 1.8 gpm
10:40	27.0	56.40	5.94	.175	73	5.74	18.2	cloudy	Depth 94 ft. PR 1.8 gpm
10:55	54.0	74.12	6.06	.196	105	5.70	19.0	cloudy	Depth 94 ft. PR 1.0 gpm
11:10	69.0	80.08	5.60	.078	1443	4.99	18.7	cloudy	Depth 94 ft. PR 1.0 gpm
11:25	84.0	83.64	—	well	RAN	Dry	—	cloudy	- wait 20 min. And recheck water level -
11:45	84.0	74.58	—	well Did not recharge 80%				(30.9 ft.	w.L.) Recharge Rate = 1.207 ft/min.
10-17-01 10:35	84.0	14.03	5.24	.120	331	5.61	16.6	cloudy	Depth 95 ft. PR .5 gpm

TD - DTW = WC x 2'/4' well = One PV x 5 = Min PV + H20 to install well = Minimum H20 to remove

98.72 - 13.95 = 84.77 x .653 = 55.35 x 5 = 276.75 + 150 g = 426.75 g

QC'd. [signature] 10/25/01

D:\FTMC\DEVELOPMENTLOG.DOC
11/17/00

.80 x 84.77 = 67.82 ft 98.72 - 67.82 = 30.9 ft. WL

Parcel No.: HR78Q
Well ID: MW02
Date: 10-17-01

Time 24hr	Purge Volume (gal) 84.0	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
10:50	91.5	26.17	5.55	.076	571	6.14	16.7	cloudy	Depth 95 ft. PR 1.0 gpm
11:05	106.5	32.60	5.56	.073	154	5.85	16.8	cloudy	Depth 95 ft. PR 1.0 gpm
11:20	121.5	37.58	5.53	.070	134	6.16	17.4	cloudy	Depth 95 ft. PR 1.0 gpm
hrs 11:35	136.5	41.22	5.53 ~~LF 10-17-01~~	.066	99	6.16	17.2	cloudy	Depth 95 ft. PR 1.0 gpm
11:50	151.5	46.26	5.50	.061	89	6.51	17.4	cloudy	Depth 95 ft. PR 1.0 gpm
12:05	166.5	49.61	5.47	.057	80	6.02	17.8	cloudy	Depth 95 ft. PR 1.0 gpm
12:20	181.5	54.09	5.46	.055	74	6.62	17.7	cloudy	Depth 95 ft. PR 1.0 gpm
hrs 12:35	196.5	58.43	5.47	.056	76	6.22	18.1	cloudy	Depth 95 ft. PR 1.0 gpm
12:50	211.5	61.51	5.48	.057	81	6.83	18.2	cloudy	Depth 95 ft. PR 1.0 gpm
13:05	226.5	64.85	5.48	.056	109	6.18	18.3	cloudy	Depth 95 ft. PR 1.0 gpm
13:20	241.5	67.71	5.47	.056	237	6.31	18.6	cloudy	Depth 95 ft. PR 1.0 gpm
hrs 13:35	256.5	68.97	5.47	.058	250	5.83	18.8	cloudy	Depth 95 ft. PR 1.0 gpm
13:50	271.5	72.88	5.48	.066	457	6.10	18.8	cloudy	Depth 95 ft. PR .5 gpm

Parcel No.: HR 78Q
Well ID: MW02
Date: 10-17-01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
14:05	279.0 ~~286.5~~ 10-17-01	76.95	5.55	.072	400	5.87	18.4	cloudy	Depth 95 ft. PR. 5 gpm
14:20	286.5	79.92	5.60	.078	327	5.89	18.6	cloudy	Depth 95 ft. PR. 5 gpm
14:35	294.0	84.49	5.52	.070	999+	5.43	18.4	cloudy	—Moved to 98.7 ft!— Depth 95ft PR. 5 gpm
14:50	301.5	96.38	5.39	.044	999+	5.21	17.6	TAN	Depth 98.7 ft. PR. 5 gpm
14:52	301.5	—Well	RAN	Dry					WAIT 20 min. And check W. L.
15:12	301.5	87.53	Well	Did NOT	recharge	80%			~~[illegible]~~ 10-17-01
13:45	301.5	14.34	5.26	.041	772	10.59	20.8	cloudy	~~[illegible]~~ 10 2401 resume @ .2 gpm pump 3' off bottom
14:00	304.5	18.88	5.06	.041	761	10.64	21.5	"	.125 gpm 3' off bottom
14:15	306.4	21.83	5.22	.041	626	9.16	22.3	"	.125 gpm 3' "
14:30	308	24.90	5.34	.040	601	10.23	21.7	"	.25 gpm 3' "
14:45	311.75	28.22	5.26	.041	554	11.26	21.3	"	.25 gpm 3' "
15:00	315.5	30.45	5.33	.039	515	11.45	21.2	"	.25 gpm 3' "
15:15	319.25	31.80	5.33	.039	488	10.93	21.3	"	.25 3' "

Parcel No.: 78Q
Well ID: HR 78Q MW02
Date: 10 24 01

	Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
	15:30	323	34.20	5.36	.036	474	11.21	20.9	Cloudy	.25 gpm 6' off bottom
	15:45	326.75	37.03	5.31	.037	505	11.73	20.1	"	.25 gpm 6' off bottom
	16:00	330.5	41.15	5.09	.035	554	11.66	19.9	"	.25 gpm 9' off bottom
	16:15	334.25	44.38	5.28	.038	686	10.97	20.1	"	.25 gpm 12' off bottom
	16:30	338	46.08	5.33	.035	680	10.78	20.2	"	.25 gpm 15' off bottom
1/24	16:45	341.75	46.85	5.20	.036	724	9.49	19.9	"	.25 gpm 15' off bottom
1/25	08:55	341.75	14.42	5.20	.041	527	7.62	16.0	"	.25 gpm " "
	09:10	345.5	21.72	5.18	.041	503	8.04	16.6	"	" " "
	09:25	349.25	24.92	5.14	.040	473	8.73	16.7	"	" " "
	09:40	353	27.82	5.13	.040	501	8.49	17.8	"	" 18' off bottom
1/25	11:20	353	21.54	5.27	.048	414	7.25	19.5	"	" "
	11:35	356.75	23.55	5.13	.048	398	7.73	20.5	"	" "

Parcel No.: 78Q
Well ID: HR 78QMW02
Date: 10 25 01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
11:50	360.5	25.92	5.10	.046	418	7.79	20.5	cloudy	.25 gpm 18 ft off bottom
12:05	364.25	29.08	5.12	.046	449	7.91	20.2	"	" " "
12:20	368	32.25	5.15	.046	471	7.78	20.1	"	" " "
12:35	371.75	33.52	5.14	.047	473	8.41	20.4	"	" " "
12:50	375.5	35.45	5.14	.047	514	9.03	20.1	"	" " "
13:05	379.25	38.00	5.14	.048	550	8.62	19.9	"	" " "
13:20	383	40.92	5.17	.052	708	7.65	19.3	"	" " "
13:25	384.25	Increasing flow rate to .5 gpm							
13:35	389.25	46.25	5.18	.050	767	8.29	19.0	cloudy	.5 gpm 15 ft off bottom
13:50	397	48.35	5.12	.052	780	8.76	19.1	"	" " "
14:05	404.5	51.25	5.17	.051	726	8.51	19.0	"	" " "
14:20	412	54.62	5.15	.044	666	8.70	18.4	"	increase to 1.5 gpm " "
14:35	427	74.35	5.11	.044	759	9.09	18.4	"	1.5 gpm 10 ft off bottom

12 hrs. developed. Volume requirments met. Collect photo sample.

Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 796887
Form Completed by: Justin Fisher
Well Developed by (person/firm): Justin Fisher / IT

Parcel No.: 78Q
Well No.: HR-78Q-MW03
Date started: 09/11/2001

Monitoring Well Information

Development Method: Bail, Purge/Surge
Development Equipment: 2.0L Poly Bailer, whale Pump, Water level Indicator, Turbidimeter, Horiba U-10
Casing Diameter: 2" PVC

Beginning Measurments
Depth to Water (ft): 5.80 ft. btoc * 6.51' btoc ☆
Total depth of Well (ft): 15.50 ft. btoc * 15.90' btoc ☆

*well not complete. Measurements taken as is ☆well now complete

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date) (Purge Rate, Pump Position, Misc.)
15:10	0	5.80	–	–	–	–	–	brown very muddy	PID=0.0. Pump will not purge water
15:20	miniscule	–	–	–	–	–	–	brown very muddy	without continuous surging. Shut down
09:05	0	6.51	5.55	0.126	>1000	1.08	22.7	brown very muddy	09/12/2001 1.0L Poly bailer
09:20	8L	6.73	5.70	0.122	>1000	1.13	22.9	brown very muddy	
09:28	16L	6.84	5.59	0.142	>1000	1.48	23.1	brown very muddy	16L = 4.23 gal Switch to whale pump
09:40	4.23 gal	–	–	–	–	–	–	brown very muddy	1.0 gpm Pump on btm
09:44	7.5	below pump	–	–	–	–	–	–	Flow slowing @ 0943, measure purge vol. in bucket. Well Dry

TD − DTW = WC x 2"/4' well = One PV x 5 = Min PV + H20 to install well = Minimum H20 to remove

15.50 − 5.80 = 9.70 x 0.163 = 1.58 x 5 = 7.9 gal + 11 gal lost = 18.9 gallons to remove

QC'd by [illegible] 09/18/01

Parcel No.: 78Q
Well ID: HR-78Q-MW03
Date: 09/12/2001

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
10:00	7.5	6.69	–	–	–	–	–	brown muddy	Resume @ 0.25gpm
10:30	15	7.01	5.40	0.130	200*	1.26	26.4	very cloudy	Pump @ 14.9' btoc @ 1035
10:45	18.75	7.00	5.29	0.123	47	0.98	25.5	clear	Pump @ 13.9' btoc @ 1050
11:00	22.50	7.01	5.39	0.127	78	1.02	25.7	cloudy	Large purge volume surpassed
11:15	26.25	7.00	5.44	0.125	16.2	1.54	27.2	clear	Pump @ 12.9' btoc @ 1120
11:30	30.00	7.02	5.51	0.127	13.1	2.10	26.6	clear	Pump @ 11.9' btoc @ 1135
11:45	33.75	7.02	5.46	0.127	9.3	1.68	26.9	clear	—
11:50	35.0	7.02	5.44	0.127	9.2	1.66	27.8	clear	—
11:55	36.25	7.02	5.53	0.126	7.2	1.83	27.6	clear	Readings within specified parameters, 3 consecutive readings Collect Photo Sample
12:00	37.50	–	–	–	–	–	–	–	Shut down Development Complete
:									
:									
:									

No Further Entries
Date 09/12/2001
Sub

*-Err on t4, +Err on t3
Same after calibration

Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 796887
Form Completed by: J. Fisher
Well Developed by (person/firm): J. Fisher / N. Baden

Parcel No.: 80Q
Well No.: HR-80Q-MW01
Date started: 07/20/2001

Monitoring Well Information

Development Method: bail
Development Equipment: 0.5L PVC bailer, water level indicator, Turbidimeter, Horiba U-10
Casing Diameter: 2" PVC

Beginning Measurments
Depth to Water (ft): 8.2 ft. btoc
Total depth of Well (ft): JF ~~10.0~~ ft. btoc 9.09' btoc
well was cut lower on 7/24/2001

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date) (Purge Rate, Pump Position, Misc.)
09:05	0	8.20	6.65	0.196	>1000	0.28	21.3	muddy brown	
09:15	0.75	DRY	–	–	–	–	–	–	Bailed Dry.
10:50	0.75	7.30	6.85	0.213	>1000	0.14	22.8	muddy brown	07/23/2001
11:05	1.75	DRY	–	–	–	–	–	–	Bailed Dry. 2nd Time
08:30	1.75	7.81	5.39	0.240	>1000	1.92	21.3	muddy brown	07/25/2001
08:34	2.25	DRY	–	–	–	–	–	–	Bailed Dry 3rd Time
:		Last Line Used					OKA		

TD - DTW = WC x (2"/4' well) = One PV x 5 = Min PV + H20 to install well = Minimum H20 to remove

10.0 - 8.2 = 1.8 x 0.163 = 0.29 x 5 = 1.47 + ~~30~~ 5 JF gallons to install = ~~31.47~~ 6.47 JF gallons to remove

Reviewed by [signature] 08/01/01

Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 796887
Form Completed by: N. Badon / J. Fisher
Well Developed by (person/firm): N. Badon / J. Fisher

Parcel No.: 80Q
Well No.: HR-80Q-MW02
Date started: 7/18/01

Monitoring Well Information

Development Method: Surge/Purge
Development Equipment: Whale pump, poly tubing

Casing Diameter: 2"

Beginning Measurments
Depth to Water (ft): 8.13' TOC
Total depth of Well (ft): 21.4' TOC

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date) (Purge Rate, Pump Position, Misc.)
15:20	—	8.13	5.51	0.121	+1000	3.74	20.4	orange cloudy	pump is on bottom 0.75gpm
15:35	11.25	20.00	5.35	0.073	+1000	1.82	18.9	milky brown	
15:42	purged well dry			1st dry					
08:05	11.25	8.25	start	pumping					7/19/01 pump on bottom 0.25gpm
08:10	12.5	11.44	5.55	0.102	604	4.22	19.2	cloudy	
08:25	16.25	11.70	5.57	0.057	275	4.94	19.0	cloudy	
08:40	20.00	11.90	5.55	0.050	87	5.04	19.2	cloudy	

TD - DTW = WC x 2'/4' well = One PV x 5 = Min PV + H20 to install well = Minimum H20 to remove

21.4 - 8.13 = 13.27 x 0.163 = 2.16 gal x 5 = 10.81 + .25 35.82 gallons

Reviewed by 08/01/01

Parcel No.: 80Q
Well ID: HR-80Q-MW02
Date: 07/19/2001

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
08:55	23.75	12.05	5.53	0.048	~~5.19~~ 68 JF	5.19	19.2	cloudy	
09:10	27.50	12.10	5.51	0.045	44	5.64	19.2	cloudy	
09:25	31.25	12.18	5.48	0.043	20	4.41	19.4	clear	
09:40	35.00	12.20	5.50	0.041	12.5	4.71	19.7	clear	
09:55	38.75	12.20	5.50	0.039	8.0	4.67	20.4	clear	Turs et purge vol. surpassed.
10:10	42.50	12.20	5.56	0.040	7.9	4.53	21.4	clear	
10:25	46.25	12.22	5.55	0.039	5.4	4.64	21.9	clear	Readings stable for 3 consec. collect photo sample
:			LAST	Line	Used				
:									
:									
:				OKA					
:									
:									

Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 796887
Form Completed by:
Well Developed by (person/firm): Reginald Fains / IT Corp

Parcel No.: HR-809
Well No.: MW03
Date started: 7/12/01

Monitoring Well Information

Development Method: Surge and Purge
Development Equipment: Whale pump, Hydrolab U-10, PID, Turbidity Meter, Water Level Meter
Casing Diameter: 2"

Beginning Measurments
Depth to Water (ft): 4.49' TOC
Total depth of Well (ft): 21.24' TOC

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date) (Purge Rate, Pump Position, Misc.)
16:24	—	4.49	5.83	0.157	999	2.89	31.2	cloudy (dark brown)	0.187 gal/min pump - 1ft from bottom of well
16:39	2.80	11.80	5.76	0.112	999	2.78	24.7	"	0.125 gal/min
16:54	4.625	12.93	5.28	0.010	999	1.46	24.9	"	
17:09	6.55	13.45	5.62	0.128	999	1.25	23.9	"	
17:24	8.425	14.32	5.51	0.123	999	1.98	23.3	"	1.15 gal/min
17:26	10.725	—	—	→	—	—	—	—	Well is dry
12:30	10.725	4.58	5.96	0.154	999	3.49	43.2	cloudy (dark brown)	7/13/01 0.125 gal/min 1 ft from bottom

TD - DTW = WC x 2'/4' well = One PV x 5 = Min PV + H20 to install well = Minimum H20 to remove

21.24 - 4.49 = 16.75 x 0.163 = 2.7 x 5 13.65 + 25 = 38.65 gallons

RC'D by [signature] 07/25/01

Parcel No.: HR-809
Well ID: MW03
Date: 7/16/01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
12:45	12.6	11.20	5.68	0.089	999	3.96	26.9	cloudy (dark O. brown)	
13:00	14.47	12.31	5.67	0.084	999	4.95	28.4	"	0.1 gal/min
13:15	15.97	13.10	5.80	0.086	881	5.35	29.0	"	
13:30	17.47	14.08	5.87	0.093	999	4.86	29.0	"	raised pump 1 ft from position
13:45	18.97	15.95	5.82	0.093	"	4.58	28.9	"	
14:00	20.47	16.79	5.88	0.081	"	5.65	29.3	"	
14:15	21.97	17.50	5.81	0.095	"	4.98	29.4	"	
14:30	23.47	18.23	5.75	0.088	"	4.83	30.1	"	lower pump 0.5 ft bottom
14:45	24.97	19.45	5.82	0.094	"	4.70	30.8	"	
15:00	26.47	20.23	5.90	0.087	"	4.92	31.0	"	
15:15	27.97	STOP	5.85	0.088	"	4.93	31.4	"	
15:18	28.27	—	—	—	—	—	—	—	Well is dry
11:00	30.145	15.8	5.61	0.83	+1000	1.42	24.4	Milky white	7/18/01 0.125 gpm pump 1 ft off bottom

Parcel No.: HR-80Q
Well ID: MW03
Date: 7/18/01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
11 : 15	32.02	12.68	5.65	0.077	779	1.42	25.2	milky	
11 : 30	33.895	13.86	5.71	0.091	598	2.60	25.3	milky	
11 : 45	35.77	15.25	5.69	0.088	632	2.09	25.7	milky	
12 : 00	37.645	17.00	5.64	0.081	691	2.16	25.1	milky	
12 : 15	39.52	18.15	5.74	0.104	>1000	2.07	25.7	milky	
12 : 30	41.395	below pump	5.77	0.093	609	-2.72	23.8	milky	Lowered pump to bottom
12 : 45	—	—	—	—	purged	dry	3rd time	—	—
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Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 796887
Form Completed by: Reginald Goins
Well Developed by (person/firm): R. Goins / IT Corp

Parcel No.: HR-80Q
Well No.: MW04
Date started: 7/9/01

Monitoring Well Information

Development Method: Surge and Purge
Development Equipment: Whale pump, PID, Horiba U-D, Turbidity Meter, 300 gallon tank
Casing Diameter: 2"

Beginning Measurments
Depth to Water (ft): 6.53' TOC
Total depth of Well (ft): 26.02' TOC

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date) (Purge Rate, Pump Position, Misc.)
12:24	—	6.53	9.83	0.580	>1000	4.05	23.5	cloudy (brown)	pump lift from bottom 0.5 gal/min
12:30	3 gal	17.23	9.35	0.303	560	3.86	23.6	"	0.25 gal/min
12:45	6.75	17.82	8.18	0.167	>1000	3.66	23.8	"	0.187 gal/min
12:56	9.55	—	—	—	—	—	—	—	problem w/ pump
13:14	9.55	15.15	8.91	0.225	901	2.98	26.8	"	
13:29	12.35	18.74	8.28	0.161	>1000	2.45	26.7	"	raised pump 2ft from position
13:44	15.16	21.35	9.19	0.292	>1000	3.50	26.5	"	Lower pump 1ft from position

TD - DTW = WC x 2'/4' well = One PV x 5 = Min PV + H20 to install well = Minimum H20 to remove

26.02 - 6.53' = 19.49 x 0.163 = 3.18 x 5 = 15.9 + 30 gal = 45.9 gals

QC'd by [signature] 07/17/01

Parcel No.: HR-800
Well ID: MW04
Date: ~~7/10/04~~ RG ~~7/10/01~~ RG ~~7/10/01~~ 7/13/01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
13:59	17.96	22.80	8.66	0.228	6.25	3.95	27.9	cloudy (beige)	
14:14	20.77	BTOP	7.11	0.171	>1000	4.39	26.0	cloudy (beige)	BTOP - Water level is beneath top of pump. Lower pump 0.5 ft from bottom
14:29	23.57	BTOP	8.78	0.202	>1000	4.15	27.1	cloudy (beige)	
14:39	25.44	—	—	—	—	—	—	—	Well is dry
09:30	25.44	7.02	9.93	0.548	799	6.43	20.6	cloudy (tan)	7/10/01 Pump is 2 ft from bottom of well 0.187 gal/min
09:45	28.25	13.9	8.88	0.207	172	6.60	20.6	pt. cloudy (clearing)	0.10 gal/min
10:00	29.75	15.2	8.56	0.177	138	5.97	21.4	"	
10:15	31.25	17.3	8.45	0.163	106	6.11	21.6	"	rate pump 1 ft from position
10:30	32.75	18.40	6.80	0.094	684	5.47	23.1	cloudy (tan)	0.125 gal/min
10:45	34.62	20.45	6.83	0.115	>1000	5.47	21.9	"	
11:00	36.49	21.55	7.13	0.123	>1000	5.12	22.0	"	
11:15	38.36	22.55	6.72	0.118	>1000	6.23	21.7	"	Lower pump 1 ft from bottom
11:30	40.23	23.55	6.91	0.128	>1000	5.99	21.7	"	0.10 gal/min

Parcel No.: HR-80Q
Well ID: mw04
Date: ~~7/11/01~~ 7/13/01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
11:45	41.73	29.25	6.80	0.136	>1000	5.68	21.4	"	"
12:00	43.23	BTOP	6.71	0.124	>1000	5.43	21.5	"	"
12:15	44.73	BTOP	6.63	0.129	~~>1000~~ 853	5.58	21.6	"	"
12:20	45.23	—	—	—	—	—	—	—	well went dry.
09:35	45.23	7.65	9.72	0.415	999	5.81	21.0	cloudy (dark tan)	7/11/01 pump 1ft from bottom 0.187 gal/min
09:50	48.03	12.85	7.94	0.161	213	4.98	22.0	slightly (cloudy)	7/13/01 ~~0.125 gal/min~~ raised pump 1ft from position
10:05	50.83	21.80	7.64	0.099	915	5.68	22.8	cloudy (tan)	~~0.1 gal/min~~ ~~0.125 gal/min~~
10:20	52.70	23.29	6.52	0.096	908	5.69	23.2	"	~~at~~ dropped pump 1ft from position. 0.10 gal/min
10:35	54.2	24.33	7.68	0.126	899	5.23	24.5	"	pump at 0.5ft from bottom 0.187 gal/min
10:45	56.07	BTOP	—	—	—	—	—	—	Well is dry
11:15	—	—	—	—	—	—	—	—	Collected photo sample w/ poly bailer, Final turb: 815 NTU
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:									07/17/01

Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 796887
Form Completed by: Justin Fisher
Well Developed by (person/firm): Justin Fisher / IT

Parcel No.: 80Q
Well No.: HR-80Q-MW05
Date started: 07/12/2001

Monitoring Well Information

Development Method: Purge/Surge
Development Equipment: Whale Pump, Horiba-U10, water level indicator, Turbidimeter
Casing Diameter: 2" PVC

Beginning Measurments
Depth to Water (ft): 4.71 ft. btoc
Total depth of Well (ft): 15.83 ft. btoc

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date) (Purge Rate, Pump Position, Misc.)
10:50	0	4.71	–	–	–	–	–	brown muddy	Pump on btm. 0.25 gpm
10:58	2	8.68	–	–	–	–	–	brown muddy	Pump down. Go get another
13:45	2	4.29	5.69	0.099	>1000	2.41	24.8	brown muddy	0.25 gpm. Pump on btm
13:53	4	6.28	–	–	–	–	–	brown muddy	Pump down. Repair or get another
15:30	4	–	–	–	–	–	–	brown muddy	0.5 gpm Pump on btm
15:45	10.5	below pump	–	–	–	–	–	brown muddy	well Dry @ 1545. 0.375 gpm @ 1040 | <80% recharge after 20 min. Recharge overnight
09:15	10.5	4.75	–	–	–	–	–	brown muddy	0.5 ft off btm 0.25 gpm

TD - DTW = WC x (2")/4" well = One PV x 5 = Min PV + H20 to install well = Minimum H20 to remove

15.83 - 4.71 = 11.12 x 0.163 = 1.81 x 5 = 9.06 + 30 gallons to install = 39.06 gallons to remove

QC'd by [signature] 07/25/01

Parcel No.: 80Q
Well ID: HR-80Q-MW05
Date: 07/13/2001

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
09:30	14.25	below pump	—	—	—	—	—	—	Well dry, 2nd Time
08:45	14.25	4.87	—	—	—	—	—	—	0.125 gpm, Pump 1 inch off btm
09:00	16.125	5.47	5.55	0.086	715	2.02	20.5	murky	
09:15	17.125	5.51	5.61	0.065	226	1.28	20.6	cloudy	Flow Rate = 0.067 gpm, Stopped 0920
11:15	17.125	4.93	—	—	—	—	—	—	Pump @ 14.83' btoc Resume @ 0.125 gpm
11:30	19	5.82	5.70	0.061	468	2.12	21.9	very cloudy	Pump @ 13.83' @ 1135
11:45	20.875	5.75	5.59	0.066	194	1.45	21.5	cloudy	Pump @ 12.83' @ 1150
12:00	22.75	5.90	5.48	0.069	183	1.57	21.3	cloudy	
12:15	24.625	6.29	5.33	0.074	197	1.22	21.2	cloudy	Pump @ 11.83' @ 1220
12:30	26.50	6.19	5.31	0.068	221	1.85	20.9	cloudy	Shut down.
13:50	26.50	5.03	—	—	—	—	—	—	Resume @ 0.125 gpm
14:05	28.375	5.92	5.70	0.062	79	1.48	22.2	cloudy	
14:20	30.25	5.90	5.30	0.060	64	1.02	21.7	cloudy	Pump @ 10.83' @ 1425

Parcel No.: 80Q
Well ID: HR-80Q-MW05
Date: 07/16/2001

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
14:35	32.125	5.98	5.24	0.064	90	0.96	21.5	cloudy	
14:50	34	6.00	5.29	0.064	77	1.68	21.4	cloudy	
15:05	35.875	6.03	5.35	0.064	148	1.34	21.1	cloudy	Pump now @ 9.83' btoc
15:20	37.75	6.03	5.36	0.066	107	1.23	20.9	cloudy	Pump now @ 8.83' btoc
15:35	39.625	6.05	5.52	0.063	74	1.26	21.2	cloudy	Target Purge Volume reached. Pump now @ 7.83' btoc
15:50	41.5	6.05	5.68	0.062	73	1.41	21.5	cloudy	
16:05	43.375	6.05	5.67	0.062	70	1.15	21.3	cloudy	Pump now @ 6.83' btoc
16:20	45.25	6.05	5.70	0.061	66	1.23	21.3	cloudy	
16:35	47.125	6.04	5.68	0.061	67	1.24	21.2	cloudy	
16:50	49	6.04	5.69	0.061	69	1.16	21.2	cloudy	Last Reading of day.
14:20	4.9	4.99	–	–	–	–	–	–	07/17/2001 0.125 gpm Pump @ 7' btoc
14:35	50.875	6.02	5.64	0.103	294	2.03	22.0	cloudy	
14:50	52.75	6.23	5.63	0.070	212	1.24	21.8	cloudy	

Parcel No.: 80Q
Well ID: HR-80Q-MW05
Date: 07/17/2001

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
15:05	54.625	6.27	5.62	0.066	199	1.27	21.7	cloudy	
15:20	56.50	6.33	5.74	0.061	214	1.26	21.4	cloudy	
15:35	58.375	6.40	5.77	0.061	211	1.31	21.2	cloudy	
15:50	60.25	6.45	5.82	0.063	245	1.38	21.2	cloudy	
16:05	62.125	6.48	5.82	0.062	225	1.47	21.3	cloudy	
16:20	64	6.49	5.81	0.062	220	1.51	21.3	cloudy	
16:35	65.875	6.50	5.75	0.062	217	1.52	21.0	cloudy	
16:50	67.75	6.51	5.74	0.062	210	1.53	21.0	cloudy	8 hrs. reached. Development Collect Photo Sample. Complete
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Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 796887
Form Completed by: R. Gains
Well Developed by (person/firm): Reginald Gains (IT Corp)

Parcel No.: HR-809
Well No.: MW06
Date started: 7/10/01

Monitoring Well Information

Development Method: Surge and Purge
Development Equipment: Whale Pump, PID, Horiba U-10, Turbidity Meter, 300 gal tank
Casing Diameter: 2"

Beginning Measurments
Depth to Water (ft): 11.4' TOC
Total depth of Well (ft): 31.15' TOC

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date) (Purge Rate, Pump Position, Misc.)
14:11	—	11.4	5.40	0.036	999	6.14	27.9	cloudy (tan)	0.15 gal/min pump 1ft from bottom
14:26	2.34	16.1	5.19	0.036	999	5.38	27.0	"	0.125 gal/min
14:41	4.21	17.1	5.44	0.037	286	3.58	26.0	pt. cloudy (tan)	
14:56	6.09	17.9	5.39	0.032	197	2.99	24.9	pt. cloudy (tan)	
15:11	7.97	18.45	5.52	0.031	253	3.98	25.6	"	
15:26	9.85	18.70	5.43	0.031	204	4.72	24.9	"	0.187 gal/min
15:41	12.65	20.10	5.29	0.029	491	5.02	23.9	"	raised pump 1ft from position @ 1551

TD − DTW = WC x 2'/4' well = One PV x 5 = Min PV + H20 to install well = Minimum H20 to remove

31.15 − 11.4 = 19.75 x 0.163 = 3.22 x 5 = ~~16.5~~ 16.1 (gal) + 25 gal = 41.1 gals

D:\FTMC\DEVELOPMENTLOG.DOC
11/17/00

QC'd by 07/17/01

Parcel No.: HR-80Q
Well ID: MW06
Date: 7/13/01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
15:56	15.45	21.35	5.26	0.028	999	4.85	22.3	cloudy (tan)	
16:11	18.25	22.60	5.33	0.027	536	4.62	23.2	cloudy (tan)	
16:26	21.05	23.02	5.40	0.028	720	5.20	22.9	"	rate = 0.25 gal/min
16:41	24.80	24.20	5.36	0.027	999	4.85	22.7	"	Lower pump 1/2 foot from bottom
16:56	28.55	24.90	5.46	0.029	999	5.16	22.8	"	0.187 gal/min
17:11	31.35	25.21	5.23	0.030	999	5.35	23.0	"	stop pumping.
14:08	31.35	12.1	5.35	0.026	999	7.25	25.6	cloudy (tan)	7/11/01 pump is 1 ft from bottom 0.125 gal/min
14:23	33.22	18.85	5.42	0.025	576	6.63	25.8	cloudy (tan)	raised pump 1 ft from position @ 1426
14:38	35.10	19.75	5.36	0.024	380	6.74	26.9	pt. cloudy (tan)	raised pump 1 ft from position
14:53	36.98	20.1	5.35	0.027	999	6.87	27.1	cloudy (tan)	
15:08	38.85	20.3	5.34	0.023	763	6.85	26.8	cloudy (tan)	rate = 0.167 gal/min
15:23	41.35	21.5	5.23	0.024	688	6.92	26.5	cloudy (tan)	
15:30	43.02	—	—	—	—	—	—	—	malfunction w/ pump

Parcel No.: HR-809
Well ID: MW66
Date: 7/13/01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
17:00	43.02	15.6	5.21	0.024	999	7.14	28.2	Cloudy (tan)	pump 4ft from bottom 0.125 gal/min
17:15	44.89	17.7	5.17	0.026	845	6.91	26.9	Cloudy (tan)	0.06 gal/min
17:30	45.79	17.0	5.14	0.023	552	6.69	26.3	"	raised pump 4ft from position @ 17:21
17:45	46.69	16.6	5.14	0.023	517	6.79	26.1	"	0.5 gal/min Lowered pump 0.5 ft from bottom.
18:00	54.19	29.5	5.24	0.022	489	6.64	26.3	"	
18:08	58.19	—	—	—	—	—	—	—	Well is dry
09:42	58.19	14.3	4.83	0.070	879	7.57	26.6	Cloudy (tan)	7/12/01 pump 4ft from bottom 0.1 gal/min
09:57	59.69	16.22	5.21	0.026	372	8.68	24.8	slightly cloudy (tan)	1ft from position
10:12	61.19	17.23	5.27	0.026	536	9.10	25.0	"	
10:27	62.69	17.82	5.25	0.026	201	8.75	25.5	"	1ft from position
10:42	64.19	18.40	5.24	0.026	527	9.45	26.6	"	
10:57	65.69	18.07	5.27	0.024	207	8.58	27.4	"	raised pump 2ft from position top of screen.
11:12	67.19	18:00	5.21	0.026	885	7.95	27.9	Cloudy (tan)	

Parcel No.: HR-80Q
Well ID: MW06
Date: 7/13/01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
11:27	~~18.09~~ 68.69	18.01	5.22	0.024	955	8.91	28.5	Cloudy (tan)	
11:42	70.19	18.70	5.23	0.021	701	9.18	28.1	"	lower pump left from position
11:57	71.69	18.80	5.06	0.026	474	8.55	28.3	pt cloudy (tan)	
12:12	73.19	18.90	5.20	0.027	202	9.25	28.9	~~pt~~ cloudy (tan)	
12:27	74.69	19.00	5.15	0.027	187	8.78	29.3	slight cloudy (tan)	
12:42	76.19	19.10	5.18	0.028	58	9.13	29.8	slightly clear	Collected photo sample 8hr period finished.
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07/17/01

Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 800486
Form Completed by: Jeff Alexander
Well Developed by (person/firm): Jeff Alexander IT corp.

Parcel No.: Rng 27 Parcel 85Q
Well No.: HR-85Q-MW01
Date started: 10.8.01

Monitoring Well Information

Development Method: Surge + pump
Development Equipment: whale pump, Horiba U10 Orion turbidity, DO indicator
Casing Diameter: 2"

Beginning Measurments
Depth to Water (ft): 8.35 btoc
Total depth of Well (ft): 55.0 btoc

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date) (Purge Rate, Pump Position, Misc.)
12.55	Ø	6.50	—	—	—	—	—	—	1.0 gpm surge
13:00	5g	30.55	8.02	.091	>999	2.76	22.8	Or. mud	slow to on bottom .25gpm
13:15	8.75	38.15	9.62	.320	>999	2.36	24.4	"	1 ft off bottom .25gpm
13:30	12.5	38.15	8.85	.239	>999	1.91	25.5	"	↑ 2 ft off bottom .25 gpm
13:45	16.25	38.18	8.13	.199	>999	1.68	25.6	"	↑ 3ft off bottom .25 gpm
14:00	20	38.71	7.23	.129	>999	3.21	25.4	"	↑ 4 ft .25gpm
14:15	23.75	39.85	6.51	.108	>999	3.64	26.4	"	↑ 5 ft .25 gpm

TD - DTW = WC x 2'/4' well = One PV x 5 = Min PV + H20 to install well = Minimum H20 to remove

55.0 - 8.35 = 46.65 x .163 = 7.604 x 5 = 38.02 g + 100 g = 138.02 gal.

10/24/01

Parcel No.: 85Q Rng 27
Well ID: HR 85Q MW01
Date: 10 8 01

	Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
	14:30	27.5	40.96	6.58	.110	920	2.97	26.4	or. muddy	↑6ft. .25gpm
	14:45	31.25	41.70	6.57	.115	958	1.74	25.7	"	↑7ft. .25gpm
	15:00	35g	41.85	had to lower pump. It had stopped						
	:	possibly due to drop in head pressure as Dfw dropped								
	15:15	38.75	43.25	6.02	.102	>999	2.52	23.3	or. mud	3ft off bottom .25gpm
	15:30	42.5	43.49	5.81	.104	>999	2.78	26.2	"	↑3ft. .25gpm
	15:45	46.25	43.72	5.89	.095	>999	1.85	21.4	"	↑3ft. .25gpm
	16:00	50g	44.65	5.61	.081	>999	1.87	20.2	"	.25gpm
10/8	16:00	STOP PUMP FOR DAY 10 8 01							—	
10/9	08:45	50g	12.95	—	—	—	—	—	—	Start @ 1gpm; surge
	08:50	55g	30.62	—	—	—	—	—	—	slow to .25gpm
	09:00	57.5	35.55	5.52	.072	>999	3.40	17.0	or. mud	raise to 8ft above bottom; .25gpm

Parcel No.: 85Q
Well ID: HR 85Q MW01
Date: 10 9 01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
09:15	61	38.40	5.79	.078	>999	4.09	17.8	or. cloudy	↑ 9ft. .25 gpm
09:30	64.75	40.15	6.14	.085	>999	4.14	19.2	"	↑ 10ft. .25 gpm
09:45	68.5	41.82	5.97	.074	>999	5.13	19.6	"	↑ 11ft. .25 gpm
10:00	72.25	[42.55]	5.92	.072	>999	4.18	19.8	or. cloudy	lower to .25 gpm 3ft. off bottom
9/9 10:15	Stop pump due to dropping water level. allow recharge.								
9/11 08:55	76	8.50	—	—	—	—	—	—	1gpm
09:00	81	19.50	—	—	—	—	—	slow to	.5 gpm 20ft off bottom
09:10	88.5	29.29	5.82	.096	885	3.45	20.6	or. cloudy	slow to .25 gpm
09:22	—	31.72	rate has stopped lower pump to 5ft off bottom						
09:30	92.25	35.52	5.58	.026	>999	4.13	21.3	or. cloudy	.25 gpm 5ft off bottom
09:45	96	37.50	5.94	.065	946	2.35	21.2	"	" "
09:46	rate has slowed again					—	—		

Parcel No.: Rng 27 85Q
Well ID: HR 85Q MW01
Date: 10 11 01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
09:47	rate	has	stopped.	possibly	failed	pump	(see	Logbook # 16)	
10:20	restart	@	.25 gpm	5 ft	off	bottom			
10:25	97.25	38.90	6.04	.069	>999	3.02	19.8	or. v. cloudy	.25 gpm 7' 5' off bottom
10:40	101	40.03	5.98	.074	>999	4.17	21.0	"	"
10:55	104.75	41.04	6.13	.069	>999	3.93	21.2	"	"
11:10	108.5	42.78	6.28	.067	>999	4.73	21.8	v. cloudy	"
11:25	112.5	43.82	6.45	.067	>999	4.48	22.2	or. cloudy	"
11/11 11:40	—	44.29 STOP	pump	due	to	zero	flow		rate slowed to zero
11/22 11:07	112.5	6.12	5.52	.102	>999	8.00	22.84	or. br. opaque	2gpm .5' off bottom
11:12	122.5	31.56	—	—	—	—	—	"	2gpm .5' off bottom
11:18	134.5	49.20	5.73	.091	>999	5.12	21.3	"	
11:22	142.5	~~42.37~~ 10/24/01	DTW	@	Top of	pump,	pump	@ bottom	of well. Shut off pump.

11 52 — 42.31 not much recovery after 30 min. —

Parcel No.: Ray 27 85Q
Well ID: HR 85Q MW01
Date: 10 22 01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
08:10	142.5	8.69	5.69	.065	>999	1.71	18.9	or. muddy	1.75 gpm 1ft
08:16	153	26.30						"	" water-level only
08:20	157	40.85	5.65	.057	>999	2.40	19.8	"	1gpm 1ft
08:27	164	top of pump	5.65	.055	697	5.50	18.9	"	1gpm on bottom
08:27	well	gone dry.	sample	colected	just	before.			
:									
:									
:									
:									
:									
:									
:									

10 22 01

Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 800486 0351TE05 ~~29~~
Form Completed by: Jeff Alexander
Well Developed by (person/firm): Jeff Alexander ITgroup

Parcel No.: 85Q
Well No.: HR 85Q MW02
Date started: 10 1 01

Monitoring Well Information

Development Method: surge and pump
Development Equipment: Horiba U10, Grundfos pump, Orion turbidimeter, WL indicator
Casing Diameter: 4"

Beginning Measurments
Depth to Water (ft): 9.45 bTOC
Total depth of Well (ft): 102.90 bTOC

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date) (Purge Rate, Pump Position, Misc.)
12:20	—	8.30	—	—					5ft off bottom
12:30	10g	18.40	5.78	.247	999	7.49	19.3	br. or. muddy	1gpm
12:32	surge + moving pump through screened interval							—	2gpm
12:35	40	34.90	—	—	—	—	—	—	slow to 1gpm
12:45	50	52.70	7.79	.889	999	7.99	20.2	cloudy	1gpm
12:47	52	slow	to	0.5	gpm				
13:00	58.5	56.22	8.86	.354	630	6.74	22.8	cloudy	.5gpm

TD - DTW = WC x 2'/(4') well = One PV x 5 = Min PV + H20 to install well = Minimum H20 to remove

102.9 - 9.45 = 93.45 x .653 = 61.023 x 5 = 305.114 + 725 gal. = 1030.11 gal.

DC'd 10/9/01 [illegible]

Parcel No.: 8SQ Rng 27
Well ID: 8SQ MW07
Date: 10/1/01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
13:15	66	57.25	8.95	.342	388	7.14	24.2	cloudy	.5 gpm
13:30	73.5	57.96	7.79	.284	269	6.30	24.5	"	"
13:45	81	58.20	7.30	.224	198	6.36	24.3	"	"
14:00	88.5	58.36	6.96	.197	169	5.79	24.8	"	"
14:15	96	59.42	6.47	.175	154	5.41	23.5	"	"
14:30	103.5	60.96	6.54	.154	140	5.69	23.3	"	"
14:45	111	62.88	6.40	.152	126	5.75	23.3	"	"
15:00	118.5	63.45	6.23	.161	147	5.38	23.6	"	"
15:15	126	63.28	6.48	.174	164	5.91	23.7	"	"
15:30	—	63.42	6.13	.176	167	5.64	23.3	"	"
15:40	STOP							10.1.01	
14:05	~~68.44~~ 131	10/10/01	—	—	—	—	—	br muddy	~2 gpm 5 ft off bottom
14:10	141	10/10/01 28.30	—	—	—	—	—	—	slow to 1gpm

10-1

10-3

Parcel No.: Rng 27 85Q
Well ID: HR 85Q MW02
Date: 10 3 01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
14:15	146	30.14	5.77	.114	378	5.76	22.6	cloudy	Slow to .5gpm
14:20	148.5	33.12	5.41	.103	338	4.61	22.2	"	.5gpm
14:35	156	35.70	5.49	.105	415	5.25	22.9	"	"
14:50	163.5	37.34	5.53	.108	372	4.95	24.3	"	"
15:05	171	39.73	5.51	.105	313	4.65	24.4	"	"
15:20	178.5	39.90	6.07	.103	338	4.74	25.2	"	"
15:35	186	42.62	6.06	.098	299	5.42	23.3	"	"
15:50	193.5	45.05	6.13	.093	281	5.32	22.9	"	"
16:05	202	48.47	5.92	.097	261	5.57	21.7	"	"
10/3 16:20	209.5	49.00	6.12	.101	266	4.95	21.8	"	"
10/4 ~~16~~ 08:25	209.5	11.15	—	—	—	—		Or. muddy	2gpm ~8ft. off bottom
08:30	218.5	18.85	—	—	193	—	—	v. cloudy	2gpm

Parcel No.: Rng 27 85Q
Well ID: HR 85Q MW02
Date: 10 4 01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
08:40	228.5	30.66	4.97	.120	213	5.08	17.7	cloudy	slow to .75 gpm
08:55	239.75	35.62	5.47	.077	157	5.21	18.8	"	
09:10	251	39.09	5.98	.075	167	5.67	19.5	"	
09:15	→ reduce rate to 0.5 gpm →								
09:25	254.75	42.65	5.88	.079	199	4.63	20.1	cloudy	.5 gpm
09:40	262.25	43.18	6.02	.085	187	5.39	21.2	"	"
09:55	269.75	44.20	6.14	.085	186	5.46	21.8	"	"
10:10	277.25	45.42	6.15	.079	190	5.24	22.4	"	"
10:25	284.75	45.80	6.01	.077	186	5.57	23.0	"	"
10:40	288.5	46.80	6.04	.074	173	5.23	22.1	"	rate has dropped to 0.25 gpm
10:55	292.25	46.90	5.97	.073	179	5.34	22.4	"	.25 gpm
11:10	296	46.75	6.04	.073	190	5.04	22.2	"	.25 gpm

Parcel No.: Rng 27 85Q
Well ID: HP85Qmw02
Date: 10 4 01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
11:25	299.7	46.95	5.97	.071	179	5.02	23.8	cloudy	.25 gpm
11:40	307.25	47.00	5.98	.064	175	4.94	24.8	"	"
11:55	311	47.00	5.94	.067	168	4.65	26.1	"	"
12:10	314.75	47.02	5.94	.064	165	4.80	25.3	"	"
12:25	318.5	42.09	5.94	.062	155	5.12	26.0	"	"
12:40	322.25 ~~381.08~~	101.01 47.04	5.95	.061	149	4.91	26.2	"	"
12:55	326	47.00	5.69	.060	146	4.26	26.5	"	"
13:10	329.75	47.15	6.08	.058	136	4.63	27.2	sl. cloudy	"
13:25	333.5	47.18	5.87	.056	131	5.01	25.7	"	"
13:40	337.25	47.26	5.77	.055	133	4.87	26.1	"	"
13:55	341	47.29	5.62	.055	123	4.52	26.2	"	"
14:10	344.75	47.32	5.69	.055	119	4.41	26.0	"	"

Parcel No.: 27 85Q
Well ID: HR 85Q MW02
Date: 10 4 01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
14:25	348.5 ~~232.17~~ 10/10/01	47.42	5.74	.056	125	4.31	27.1	"	
14:30	—	—	—	—	—	—	—	—	raise pump to 10 ft. off bottom
14:40	348.5	47.89	5.97	.052	86	4.84	26.4	sl. cloudy	.25gpm ↑ 10'
14:55	352.25	47.90	5.36	.051	80	4.76	26.6	clearing	11' off bottom
15:10	356	47.85	5.77	.051	76	4.77	25.4	"	12' off bottom
15:25	359.75	47.86	5.38	.051	83	4.75	26.0	"	raise to 13' off bottom
15:40	363.5	48.88	5.85	.049	77	4.59	26.2	"	↓
15:55	367.25	48.05	5.62	.047	78	4.39	24.3	"	.25gpm ↑ 13'
10/4 16:05	STOP PUMPING FOR DAY								10 4 01
10/5 08:45	369.75	11.62	—	—	—	—	—	—	Start @ .5gpm 14' off bottom
09:00	377.25	18.54	4.65	.049	80	5.29	19.1	mostly clear	raise to 15' off bottom
09:15	384.75	20.70	5.33	.048	76	5.31	19.9	"	.25gpm ↑ 16'

Parcel No.: Rng 27 85a
Well ID: HR85aMW02
Date: ~~10/4/01~~ 10/5/01 K.H. 10/11/01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
09:30	388.5	23.50	5.42	.046	73	5.25	19.9	Murky Clear	.25gpm ↑17'
09:45	392.25	24.18	5.66	.045	73	5.34	22.0	"	.25gpm ↑18'
10:00	396	25.25	5.69	.046	75	5.24	24.0	"	.25gpm ↑19'
10:15	399.75	26.31	5.59	.048	126	4.58	23.1	"	.25gpm ↑20'
10:30	403.5	27.02	5.61	.040	97	5.09	23.6	"	" "
10:45	407.25	27.84	5.72	.045	79	5.49	23.2	"	" "
11:00	411	28.65	5.73	.045	72	5.06	25.6	"	" "
11:15	414.75	31.64	5.84	.061	88	5.81	24.0	"	" "
11:30	418.5	31.06	5.78	.047	86	5.33	25.2	"	" "
:		Photo sample collected 1130 10501							
:									
:									

Groundwater Well Development Log

Fort McClellan , Alabama

Project Number:
Form Completed by: Jeff Alexander
Well Developed by (person/firm): Jeff Alexander / ET Corp

Parcel No.: 85Q
Well No.: MW03
Date started: 10 ~~23~~ 01
22 ~~#~~ 10/25/01

Monitoring Well Information

Development Method: surge + pump
Development Equipment: whalepump, *WL indicator, Horiba u10, Orion turb mtr
Casing Diameter: 2"

Beginning Measurments
Depth to Water (ft): 7.07 ' bTOC
Total depth of Well (ft): 18.08 ' bTOC

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date) (Purge Rate, Pump Position, Misc.)
14:55	Ø	7.07	5.41	.043	>999	3.50	25.21	br. muddy	1gpm surging w/ pump
15:10	7.5	7.29	5.43	.044	>999	10.94	22.56	"	.25 gpm 2' off bottom
15:25	~~8~~ 15	8.30	5.30	.033	>999	6.35	21.56	br. cloudy	.5 gpm 6' off bottom
15:40	22.5	8.93	5.41	.036	>999	4.91	20.51	tan cloudy	.5gpm 6' off bottom
15:55	30	9.45	5.40	.043	>999	3.18	20.43	"	.5gpm 6' off bottom
16:10	37.5	9.99	5.57	.037	>999	4.33	20.20	"	.5gpm 6' off bottom
16:10	STOP pump for day								

TD - DTW = WC x 2'/4' well = One PV x 5 = Min PV + H20 to install well = Minimum H20 to remove

18.08 - 7.07 = 11.01 x .163 = 1.8 gal x 5 = 9 gal + 0 gal = 9 gal

QC'd [signature] 10/25/01

D:\FTMC\DEVELOPMENTLOG.DOC
11/17/00

*WL = water level K.H. 10/26/01

Parcel No.: 85Q
Well ID: HR 85Q MW03
Date: 102301

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
1/2/3 08:50	37.5	7.05	4.94	.034	>999	4.74	19.8	br. muddy	.3 gpm .5' off bottom
09:05	42	7.32	5.03	.025	661	4.72	19.8	br. v. cloudy	.3 gpm
09:20	46.5	7.36	5.16	.026	612	4.10	20.1	br. cloudy	.3 gpm 102301
09:35	51	7.39	5.20	.027	566	3.98	20.5	tan cloudy	" 1.5' off bottom
09:50	55.5	7.42	5.28	.016	530	4.15	21.3	"	" 2.5' off bottom
10:05	60	7.43	5.19	.027	521	3.45	21.6	"	" 3.5' off bottom
10:20	64.5	7.44	5.29	.028	467	3.69	22.2	"	" 3.5' off bottom
10:35	69	7.47	5.32	.028	461	3.77	22.0	"	" 3.5' off bottom
12:05	69 (lunch)	7.10	5.33	.027	373	5.31	23.2	"	.45 gpm 4.5' off bottom
12:20	76.5	7.45	5.33	.027	621	4.52	24.0	"	.3 gpm 5.5' off bottom
12:35	81	7.45	5.32	.027	606	5.22	23.9	"	.3 gpm 6.5' off bottom
12:50	85.5	7.46	5.36	.028	531	5.36	24.3	"	.3 gpm 7.5' off bottom

Parcel No.: 85Q
Well ID: HR 85Q MW03
Date: 10 23 01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
13:05	90	7.47	5.33	.028	464	4.88	24.3	tan cloudy	.3 gpm 8.5' off bottom
13:20	94.5	7.49	4.86	.028	430	4.50	22.9	"	.3 gpm "
13:35	99	7.49	4.99	.027	398	5.21	23.5	"	" "
13:50	103.5	7.~~3~~49	5.16	.027	390	4.29	23.6	"	" "
14:05	105	7.29	5.30	.027	384	4.21	25.6	"	.1 gpm "
14:20	106.5	7.29	5.36	.027	323	4.24	26.6	"	" "
14:35	108	7.30	5.32	.027	280	4.57	26.2	"	" "
14:50	109.5	7.30	5.31	.027	261	3.67	26.1	"	" "
15:05	111	7.29	5.21	.028	250	3.04	25.7	"	" "
15:20	112.5	7.31	5.26	.028	238	3.25	25.7	"	" "
15:35	114	7.30	5.28	.029	231	3.14	26.1	"	"
15:50	115.5	7.31	5.27	.030	224	2.99	25.9	"	" " "

Parcel No.: 85Q
Well ID: HR 85Q MW03
Date: 10 23 01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
16:05	117	7.31	4.92	.030	219	3.25	24.7	Cloudy	.1 gpm 8.5' off bottom
16:20	118.5	7.31	5.15	.029	214	3.15	24.6	"	" "
16:35	120	7.31	5.23	.029	213	3.39	24.5	"	" "
16:50	121.5	7.31	5.05	.029	216	2.99	23.7	"	" "
17:05	123	7.30	4.78	.030	210	2.29	23.1	"	" "
Finish devel. 8-hr. and volume met. Collect photo sample -									
:									
:									
:									
:									
:									
:									

10 23 01

Groundwater Well Development Log

Fort McClellan, Alabama

Project Number: 796887
Form Completed by: Justin Fisher
Well Developed by (person/firm): Justin Fisher / IT

Parcel No.: 85Q
Well No.: HR-85Q-MW05
Date started: 09/10/2001 / 9-11-01 / 9-12-01

Monitoring Well Information

Development Method: Purge/Surge
Development Equipment: Whale Pump, Water level indicator
Turbidimeter, Horiba U-10 Water Quality Meter
Casing Diameter: 2" PVC

Beginning Measurments
Depth to Water (ft): 3.99 ft. btoc
Total depth of Well (ft): 14.35 ft. btoc

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date) (Purge Rate, Pump Position, Misc.)
10:45	0	3.99	5.66	0.124	>1000	0.29	24.8	brown muddy	1.0 gpm, Pump on btm PID=0.0ppm
10:53	8	below pump	–	–	–	–	–	–	Well pumped dry, Monitor recharge
11:03	8	5.76	–	–	–	–	–	–	>80% recovery, Continue development
11:06	8	5.14	–	–	–	–	–	–	Resume purging 0.25gpm
11:30	14	5.16	5.19	0.055	>1000	2.83	25.7	brown muddy	0.5gpm @ 1135
11:45	20.25	6.11	5.26	0.041	455	2.67	25.2	very cloudy	Target Volume reached, Pump @
12:00	27.75	8.15	5.27	0.044	>1000	2.52	25.1	tan very cloudy	12.35' btoc @ 1150 @ 12.35' @ 1205

TD − DTW = WC x 2'/4' well = One PV x 5 = Min PV + H20 to install well = Minimum H20 to remove

14.35 − 3.99 = 10.36 x 0.163 (2" casing) = 1.69 gal. x 5 = 8.44 + 12 gal loss in installation = 20.44 gal. to remove

Reviewed by [signature] 09/18/01

Parcel No.: 85Q
Well ID: HR-85Q-MW05
Date: 09/10/2001

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments
12:15	35.25	9.93	5.23	0.044	799	2.57	24.8	tan very cloudy	—
12:18	36.75	—	—	—	—	—	—	—	Pump down Flow stopped, Surge well, open valve full
12:20	36.75	—	—	—	—	—	—	—	Flow Restored. Pump on btm. 1.0 gpm
12:24	40.75	—	—	—	—	—	—	—	Well dry. Allow to recover
12:34	40.75	5.84	—	—	—	—	—	brown muddy	Pump @ 10.35 ft. btoc Resume purging @ 0.25 gpm
12:55	46	4.82	5.34	0.041	200	3.68	27.2	very cloudy	0.167 gpm @ 1300
13:10	48.92	5.07	5.25	0.042	91	2.56	27.0	cloudy	—
13:25	51.42	4.74	—	—	—	—	—	—	Flow ceased. Surged well.
13:30	51.42	—	—	—	—	—	—	—	Flow restored. 0.167 gpm. Pump at 11.35' btoc
13:45	53.92	4.59	5.17	0.042	211	1.41	26.5	cloudy	—
14:00	56.42	4.82	5.08	0.040	190	2.01	25.2	cloudy	—
14:15	58.92	4.80	5.05	0.042	155	2.28	26.4	cloudy	—
14:30	61.42	4.80	5.23	0.042	93	1.44	26.4	cloudy	—

Parcel No.: 85Q
Well ID: HR-85Q-MW05
Date: 09.10.01 / 9.11.01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
14:35	61.42	4.80'	—	—	—	—	—	—	Pump @ 9.35' btoc.
14:45	63.92	4.81'	5.17	0.041	65	1.40	26.2	clear/cloudy	—
15:00	66.42	4.82'	5.16	0.042	59	1.47	26.3	clear	—
15:05	66.42	4.82'	—	—	—	—	—	—	Pump @ 8.35' btoc.
15:15	68.92	4.82'	5.22	0.042	51	1.56	26.3	clear	—
15:30	71.42	4.76'	5.08	0.042	47	2.06	26.0	clear	—
15:45	73.92	4.75'	5.25	0.042	42	0.89	26.4	clear	—
16:00	76.42	4.76'	5.17	0.042	39	1.26	26.3	clear	—
16:05	76.42	4.76'	—	—	—	—	—	—	Pump @ 7.35' btoc.
16:15	78.92	4.55'	5.30	0.042	45	2.92	26.9	clear	—
16:30	81.42	4.58	5.31	0.042	44	2.92	26.4	clear	last reading of day for 9.10.01.
16:35	82.25	—	—	—	—	—	—	—	Shut down pump for 9.10.01

Water Quality Equipment Used see page 1

Comments

Parcel No.: 85Q
Well ID: HR-85Q-MW05
Date: 9.11.01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
09:10	82.25	4.02'	—	—	—	—	—	—	9.11.01 began purging at 0.125gpm pump @ 7.35' btoc
09:25	84.13	4.54'	5.05	0.076	296	1.85	25.2	cloudy	—
09:38	—	—	—	—	—	—	—	—	pump shut down
09:50	—	—	—	—	—	—	—	—	unable to restart pump
14:00	85.75	4.0'	—	—	—	—	—	—	restarted pumping @ 0.25gpm pump @ 13.35' btoc
14:15	89.50	5.04'	5.36	0.049	461	1.98	26.9	cloudy	pump raised to 10.35' btoc
14:30	93.25	5.13'	5.22	0.045	169	1.24	27.5	cloudy	—
14:45	97.00	5.22'	5.25	0.045	124	1.00	27.0	cloudy	—
15:00	100.75	5.24'	5.20	0.050	98	1.30	25.0	cloudy	—
15:15	104.50	5.29'	5.20	0.050	117	1.40	26.0	cloudy	—
15:30	108.25	5.32'	5.20	0.050	126	1.10	26.0	cloudy	pump raised to 9.35'
15:45	112.0	5.32'	5.10	0.050	98	0.90	25.0	cloudy	—

Water Quality Equipment Used see page 1

Comments

Parcel No.: 85Q
Well ID: HR-85Q-MW05
Date: 9.11.01/9.12.01

Time 24hr	Purge Volume (gal)	Water Level (ft) (TOC)	pH (std units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved oxygen (mg/L)	Temperature (°C)	Clarity (color)	Comments (Date if different from start date)
16:00	115.75	5.23'	5.20	0.050	120	1.20 9.11.01	25.0	cloudy	shut down for 9.11.01.
09:05	115.75	4.05'	—	—	—	—	—	—	began pumping well for 9.12.01 at 0.132gpm w/ pump 9.35' bmc.
09:20	117.73	4.59'	5.13	0.051	75	1.98	24.8	clear	—
09:35	119.71	4.60'	5.42	0.051	30	1.57	24.6	clear	—
09:50	121.69	4.63'	5.48	0.048	21	1.88	25.1	clear	—
10:05	123.67	4.65'	5.57	0.050	19	2.05	25.0	clear	—
10:20	125.65	4.68'	5.57	0.047	20	1.81	27.2	clear	—
10:35	127.63	4.55'	5.63	0.046	18	1.58	28.2	clear	Ended well development. 1 L poly photo sample taken.
:									NOT used
:									
:									
:									

Water Quality Equipment Used see page 1

Comments

APPENDIX D

SURVEY DATA

Appendix D

Survey Data
Bains Gap Road Ranges
Fort McClellan, Calhoun County, Alabama

Sample Location	Northing	Easting	Ground Elevation (ft amsl)	Top of Casing Elevation (ft amsl)
Range 24 Upper, Parcel 80Q				
HR-80Q-GP01	1169375.02	681781.24	1054.27	NA
HR-80Q-GP02	1169302.49	681735.87	1065.68	NA
HR-80Q-GP03	1169303.27	681848.33	1047.07	NA
HR-80Q-GP04	1169057.68	681524.06	1026.29	NA
HR-80Q-GP05	1168764.33	682123.86	1008.49	NA
HR-80Q-GP06	1168620.68	682234.70	1025.52	NA
HR-80Q-GP07	1168365.41	682049.21	1036.48	NA
HR-80Q-GP08	1168243.75	681643.00	1011.54	NA
HR-80Q-GP09	1169922.06	680872.88	954.29	NA
HR-80Q-GP10	1169903.88	681276.88	964.65	NA
HR-80Q-GP11	1169728.43	680978.74	957.07	NA
HR-80Q-GP12	1169698.14	681599.74	1023.63	NA
HR-80Q-GP13	1169566.58	681066.05	993.43	NA
HR-80Q-GP14	1169428.24	680950.89	974.80	NA
HR-80Q-GP15	1169370.63	681496.23	1046.64	NA
HR-80Q-GP16	1169167.26	681093.20	964.53	NA
HR-80Q-GP17	1168820.27	681412.90	980.90	NA
HR-80Q-GP18	1168839.83	681829.01	992.70	NA
HR-80Q-GP19	1169006.75	681963.35	997.34	NA
HR-80Q-GP20	1168914.75	681946.85	1000.23	NA
HR-80Q-GP21	1168765.70	681998.05	1010.22	NA
HR-80Q-GP22	1168843.86	682132.81	1018.63	NA
HR-80Q-GP23	1169405.34	682277.45	1063.52	NA
HR-80Q-GP24	1169226.66	682382.97	1073.81	NA
HR-80Q-GP25	1169065.35	682628.59	1042.30	NA
HR-80Q-GP26	1168747.74	682659.01	1036.53	NA
HR-80Q-GP27	1168259.25	682441.29	1070.15	NA
HR-80Q-DEP01	1168875.06	681565.47	1011.94	NA
HR-80Q-DEP02	1168602.65	681423.76	1011.92	NA
HR-80Q-SW/SD02	1168983.94	681617.92	1011.93	NA
HR-80Q-SW/SD03	1169119.59	681952.99	1011.94	NA
HR-80Q-SW/SD04	1168843.85	681510.56	1011.60	NA
HR-80Q-SW/SD06	1168188.30	681924.17	1011.95	NA
HR-80Q-SW/SD07	1164617.19	681928.98	1050.77	NA
HR-80Q-MW02	1168987.93	681902.43	995.96	998.03
HR-80Q-MW03	1168961.59	681793.72	990.20	992.29
HR-80Q-MW04	1168715.50	681686.53	990.13	992.19

Appendix D

Survey Data
Bains Gap Road Ranges
Fort McClellan, Calhoun County, Alabama

Sample Location	Northing	Easting	Ground Elevation (ft amsl)	Top of Casing Elevation (ft amsl)
HR-80Q-MW05	1168913.66	681521.41	978.81	980.52
HR-80Q-MW06	1168560.44	681683.18	1008.33	1010.50
Range 21, Parcel 77Q				
HR-77Q-SS01	1169452.49	680524.16	929.55	NA
SAR-77-SS01	1169783.73	680079.73	925.68	NA
SAR-77-SS02	1169804.08	680149.47	932.32	NA
SAR-77-SS03	1169833.39	680260.76	934.91	NA
SAR-77-SS04	1169857.52	680380.98	938.17	NA
SAR-77-SS05	1169884.39	680503.41	941.51	NA
SAR-77-SS06	1169916.55	680667.72	943.16	NA
SAR-77-SS07	1169716.87	680093.39	924.51	NA
SAR-77-SS08	1169772.05	680331.05	932.84	NA
SAR-77-SS09	1169822.81	680568.07	939.19	NA
SAR-77-SS10	1169851.13	680682.05	942.50	NA
SAR-77-SS11	1169676.83	680169.52	925.88	NA
SAR-77-SS12	1169725.35	680404.43	933.29	NA
SAR-77-SS13	1169778.97	680639.33	940.26	NA
SAR-77-SS14	1169654.87	680360.03	930.88	NA
SAR-77-SS15	116976.55	680472.55	934.23	NA
SAR-77-SS16	1169586.76	680313.01	929.99	NA
SAR-77-SS17	1169638.35	680548.69	936.73	NA
SAR-77-SS18	1169487.69	680149.16	NR	NA
SAR-77-SS19	1169513.08	680268.25	924.97	NA
SAR-77-SS20	1169536.69	680384.55	928.75	NA
SAR-77-SS21	1169590.61	680620.46	935.44	NA
SAR-77-SS22	1169613.56	680737.55	937.73	NA
SAR-77-SS23	1169410.24	680350.12	927.26	NA
SAR-77-SS24	1169447.69	680525.54	931.78	NA
SAR-77-SS25	1169485.98	680702.67	NR	NA
SAR-77-SS26	1169277.62	680319.67	930.37	NA
SAR-77-SS27	1169332.60	680553.47	936.72	NA
SAR-77-SS28	1169382.09	680786.43	NR	NA
SAR-77-SS29	1169207.45	680273.04	929.87	NA
SAR-77-SS30	1169260.18	680507.80	934.30	NA
SAR-77-SS31	1169309.34	680742.25	941.05	NA
SAR-77-SS32	1169134.99	680228.12	928.88	NA
SAR-77-SS33	1169188.77	680462.15	935.87	NA
SAR-77-SS34	1169240.68	680696.78	941.62	NA

Appendix D

Survey Data
Bains Gap Road Ranges
Fort McClellan, Calhoun County, Alabama

Sample Location	Northing	Easting	Ground Elevation (ft amsl)	Top of Casing Elevation (ft amsl)
SAR-77-SS35	1169045.49	680368.42	936.40	NA
SAR-77-SS36	1169084.21	680544.61	940.74	NA
SAR-77-SS37	1169121.12	680720.68	945.94	NA
SAR-77-SS38	1168868.99	680408.32	943.97	NA
SAR-77-SS39	1168919.27	980643.39	950.86	NA
SAR-77-SS40	1168960.45	680818.96	954.09	NA
SAR-77-SS41	1168794.38	680363.15	NR	NA
SAR-77-SS42	1168849.74	680596.94	NR	NA
SAR-77-SS43	1168887.11	680773.41	NR	NA
SAR-77-SS44	1168725.86	680317.47	NR	NA
SAR-77-SS45	1168777.63	680551.95	NR	NA
SAR-77-SS46	1168817.22	680727.04	NR	NA
SAR-77-SS47	1168855.28	680903.66	NR	NA
SAR-77-SS48	1168459.00	680498.78	NR	NA
SAR-77-SS49	1168510.49	680733.17	NR	NA
SAR-77-SS50	1168562.14	680967.67	NR	NA
SAR-77-SS51	1168257.39	680420.37	NR	NA
SAR-77-SS52	1168309.05	680654.77	NR	NA
SAR-77-SS53	1168360.54	680889.20	NR	NA
HR-77Q-DEP01	1168843.44	680598.37	946.46	NA
SAR-77-SW/SD15	1169465.73	680189.98	NR	NA
SAR-77-SW/SD16	1169474.05	680409.99	NR	NA
SAR-77-SW/SD17	1169583.50	680678.32	NR	NA
SAR-77-SW/SD18	1169746.76	680792.37	NR	NA
SAR-77-SW/SD19	1169375.21	680759.02	NR	NA
SAR-77-SW/SD20	1169087.11	680923.99	NR	NA
SAR-77-SW/SD21	1168796.97	681025.44	NR	NA
SAR-77-SW/SD22	1168488.39	680926.83	NR	NA
SAR-77-SW/SD23	1168667.70	680626.11	NR	NA
SAR-77-SW/SD24	1168846.37	680598.81	NR	NA
SAR-77-SW/SD25	1168778.80	680279.10	NR	NA
HR-77Q-MW01	1168961.11	680694.32	948.73	950.71
HR-77Q-MW02	1168937.58	680701.72	951.07	953.31
HR-77Q-MW03	1169459.76	680544.44	932.55	934.67
HR-77Q-MW04	1168917.00	680049.53	941.66	943.72
Range 22, Parcel 78Q				
HR-78Q-SS01	1169284.53	679462.02	915.99	NA
SAR-78-SS01	1169594.73	679228.37	913.60	NA

Appendix D

Survey Data
Bains Gap Road Ranges
Fort McClellan, Calhoun County, Alabama

Sample Location	Northing	Easting	Ground Elevation (ft amsl)	Top of Casing Elevation (ft amsl)
SAR-78-SS02	1169637.27	679354.62	915.81	NA
SAR-78-SS03	1169686.58	679580.76	919.03	NA
SAR-78-SS04	1169727.69	679761.26	921.55	NA
SAR-78-SS05	1169758.51	679981.46	923.04	NA
SAR-78-SS06	1169544.14	679292.86	909.44	NA
SAR-78-SS07	1169581.42	679472.23	913.67	NA
SAR-78-SS08	1169625.07	679682.76	915.92	NA
SAR-78-SS09	1169669.99	679894.70	919.46	NA
SAR-78-SS10	1169455.29	679250.11	906.51	NA
SAR-78-SS11	1169489.54	679397.68	908.82	NA
SAR-78-SS12	1169529.33	679609.40	912.85	NA
SAR-78-SS13	1169574.28	679805.32	916.65	NA
SAR-78-SS14	1169623.17	680007.83	920.31	NA
SAR-78-SS15	1169413.01	679307.13	905.40	NA
SAR-78-SS16	1169454.50	679498.60	909.65	NA
SAR-78-SS17	1169499.70	679725.82	914.43	NA
SAR-78-SS18	1169545.78	679939.99	918.16	NA
SAR-78-SS19	1169273.19	679269.56	NR	NA
SAR-78-SS20	1169259.91	679354.72	NR	NA
SAR-78-SS21	1169278.76	679464.10	915.84	NA
SAR-78-SS22	1169209.13	679527.38	NR	NA
SAR-78-SS23	1169255.22	679588.31	NR	NA
SAR-78-SS24	1169309.13	679640.66	NR	NA
SAR-78-SS25	1169325.76	679702.16	923.26	NA
SAR-78-SS26	1169357.01	679830.26	720.68	NA
SAR-78-SS27	1169294.29	679830.50	NR	NA
SAR-78-SS28	1169231.79	679940.66	NR	NA
SAR-78-SS29	1169323.19	680047.69	NR	NA
SAR-78-SS30	1169448.19	680056.28	NR	NA
SAR-78-SS31	1168954.44	679809.41	NR	NA
SAR-78-SS32	1168974.76	680060.97	NR	NA
SAR-78-SS33	1168746.63	679971.91	NR	NA
SAR-78-SS34	1169371.10	679898.72	916.14	NA
SAR-78-SS35	1169331.03	679635.48	911.21	NA
SAR-78-SS36	1168607.08	679944.81	NR	NA
HR-78Q-SW/SD01	1169367.54	679619.12	907.17	NA
SAR-78-SW/SD10	1169315.71	679351.07	NR	NA
SAR-78-SW/SD11	1169835.02	679350.63	NR	NA
SAR-78-SW/SD12	1169342.39	679594.53	NR	NA

Appendix D

Survey Data
Bains Gap Road Ranges
Fort McClellan, Calhoun County, Alabama

Sample Location	Northing	Easting	Ground Elevation (ft amsl)	Top of Casing Elevation (ft amsl)
SAR-78-SW/SD13	1169394.99	679907.27	NR	NA
SAR-78-SW/SD14	1169419.53	680017.33	NR	NA
HR-78Q-MW01	1169324.11	679799.25	927.79	929.52
HR-78Q-MW02	1169311.09	679793.63	926.21	928.38
HR-78Q-MW03	1169377.82	679374.17	905.61	907.71
Range 27, Parcel 85Q				
HR-85Q-SS01	1168805.79	678320.76	882.19	NA
HR-85Q-SS02	1168903.56	678933.50	904.11	NA
SAR-85-SS01	1169200.92	678024.71	NR	NA
SAR-85-SS02	1169180.87	678132.66	877.68	NA
SAR-85-SS03	1169218.74	678215.87	879.46	NA
SAR-85-SS04	1169311.60	678683.48	890.19	NA
SAR-85-SS05	1169321.89	678753.74	892.55	NA
SAR-85-SS06	1169359.39	678946.96	897.72	NA
SAR-85-SS07	1169116.60	678146.93	876.89	NA
SAR-85-SS08	1169171.66	678459.54	883.48	NA
SAR-85-SS09	1169203.94	678633.07	886.59	NA
SAR-85-SS10	1169259.66	678891.64	893.46	NA
SAR-85-SS11	1169033.33	678239.86	878.95	NA
SAR-85-SS12	1169048.27	678316.13	880.61	NA
SAR-85-SS13	1169106.12	678539.48	884.39	NA
SAR-85-SS14	1169145.99	678759.17	890.15	NA
SAR-85-SS15	1169164.10	678857.40	900.80	NA
SAR-85-SS16	1169197.93	679005.27	NR	NA
SAR-85-SS17	1169266.69	679129.34	NR	NA
SAR-85-SS18	1168933.36	678196.60	NR	NA
SAR-85-SS19	1168858.82	678316.38	879.26	NA
SAR-85-SS20	1168955.78	678506.02	NR	NA
SAR-85-SS21	1168981.19	678764.61	NR	NA
SAR-85-SS22	1169024.54	679012.75	NR	NA
SAR-85-SS23	1169142.63	679169.70	NR	NA
SAR-85-SS24	1168622.45	678048.62	NR	NA
SAR-85-SS25	1168688.22	678290.77	NR	NA
SAR-85-SS26	1168768.93	678607.66	NR	NA
SAR-85-SS27	1168858.62	679020.22	NR	NA
SAR-85-SS28	1168640.38	678456.69	NR	NA
SAR-85-SS29	1168697.19	678772.09	NR	NA
SAR-85-SS30	1168740.59	679165.68	NR	NA

Appendix D

Survey Data
Bains Gap Road Ranges
Fort McClellan, Calhoun County, Alabama

Sample Location	Northing	Easting	Ground Elevation (ft amsl)	Top of Casing Elevation (ft amsl)
SAR-85-SS31	1168487.92	678272.84	NR	NA
SAR-85-SS32	1168538.74	678651.01	NR	NA
SAR-85-SS33	1168597.04	679024.70	NR	NA
SAR-85-SS34	1168804.26	678319.26	NR	NA
SAR-85-SS35	1168837.62	6780507.97	NR	NA
SAR-85-SS36	1168868.49	678724.37	NR	NA
SAR-85-SS37	1168887.12	678777.69	NR	NA
SAR-85-SS38	1168906.95	678935.90	NR	NA
HR-85Q-SW/SD01	1169010.16	678677.74	883.71	NA
HR-85Q-SW/SD02	1169140.89	678383.99	882.35	NA
SAR-85-SW/SD01	1168975.51	677849.39	NR	NA
SAR-85-SW/SD02	1168918.02	678213.43	NR	NA
SAR-85-SW/SD03	1169138.19	678365.17	NR	NA
SAR-85-SW/SD04	1169173.33	678543.86	NR	NA
SAR-85-SW/SD05	1169007.31	678691.44	NR	NA
SAR-85-SW/SD06	1169236.77	678862.55	NR	NA
SAR-85-SW/SD07	1169128.78	678936.36	NR	NA
SAR-85-SW/SD08	1169261.39	679099.89	NR	NA
SAR-85-SW/SD09	1168925.27	679149.25	NR	NA
HR-85Q-MW01	1168968.43	678235.30	878.67	880.69
HR-85Q-MW02	1168972.89	678244.91	879.20	881.32
HR-85Q-MW03	1169153.40	678902.80	892.95	895.16
HR-85Q-MW05	1169116.13	678657.45	887.20	889.12

Horizontal coordinates referenced to the U.S. State Plane Coordinate System, Alabama East Zone, North American Datum of 1983 (NAD 83).

Elevations referenced to the North American Vertical Datum of 1988 (NAVD 1988).

ft amsl - feet above mean sea level.
NA - not applicable.
NR - not recorded.

APPENDIX E

VARIANCE REPORTS

INTERNATIONAL TECHNOLOGY CORPORATION	**Variance No:** PARCEL80QSEPT01.VR1 **Linked w/NC No:** x **Date of Issue:** 9/17/01 **Page _1 of 1__**
Project Name: **Fort McClellan** – CK10 \ WAD 11	Project Number: 796887.11020300

-Variance Report -

I.Description: (by the person identifying the change)

FINAL SITE-SPECIFIC FIELD SAMPLING PLAN, SITE-SPECIFIC SAFETY AND HEALTH PLAN, AND SITE-SPECIFIC UNEXPLODED ORDNANCE SAFETY PLAN ATTACHMENTS – RANGE 24 UPPER, PARCEL 80Q

The Final Site-Specific Field Sampling Plan (FSSFSP) proposed the collection of surface water samples and sediment samples at sample locations HR-80Q-SW/SD01 and HR-80Q-SW/SD05. The two surface water samples and two sediment samples were not collected. Depositional soil samples were collected at these locations.

Identified by: Greg Sylvester, Risk Assessment Specialist	Date: 9/17/01

II. Justification for Variance:

The FSSFSP proposed a surface water sample and sediment sample at sample locations HR-80Q-SW\SD01 and HR-80Q-SW\SD05. Surface water and sediment were not present in the drainage ditch. Several attempts were made to collect a surface water sample and sediment sample, but all attempts were unsuccessful. Therefore, depositional soil samples HR-80Q-DEP01 and HR-80Q-DEP02 were collected at those locations to determine the presence or absence of contamination.

III. Applicable Document/Work Plan: (by the person identifying the change)

Final Site-Specific Field Sampling Plan, Site Specific Safety and Health Plan, and Site-Specific Unexploded Ordnance Safety Plan Attachments: Range 24 Upper, Parcel 80Q, June 2001.

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

- Signatures -

Requested by: Jeffrey Tarr, PG - IT Site Manager Jeffrey J. Tarr	9-18-2001 Date
Approved by: COE	9/25/01 Date
Project Manager Approval: Jeanne Yacoub	9/27/01 Date
QA Approval: Randall L. McBride	9-19-01 Date

INTERNATIONAL TECHNOLOGY CORPORATION	**Variance No:** PARCEL80QAUGUST01.VR1 **Linked w/NC No:** x **Date of Issue:** 8-13-2001 **Page _1 of 1__**
Project Name: **Fort McClellan** – CK10	Project Number: 796887.11020300

-Variance Report -

I.Description: (by the person identifying the change)

FINAL SITE-SPECIFIC FIELD SAMPLING PLAN, RANGE 24 UPPER PARCEL 80Q

The Final Site-Specific Field Sampling Plan (FSSFSP) proposed a surface soil sample, subsurface soil sample, and groundwater sample at sample location HR-80Q-MW04. Sample location HR-80Q-MW04 was moved approximately 70 feet south of its proposed location.

Identified by: Jeffrey Tarr, PG – IT Site Manager	Date: 8-13-01

II. Justification for Variance:

The FSSFSP proposed sample location HR-80Q-MW04 in the central western area of possible foxholes and \ or defensive positions, south of the boundary of Parcel 80Q and south of an intermittent stream. During a site walk by IT personnel, an impact area was observed approximately 70 feet south of proposed sample location HR-80Q-MW04. Therefore, a decision was made by the IT Site Manager to relocate the sample location within the impact area, approximately 70 feet south of the proposed sample location. Soil and groundwater samples were successfully collected at that location. Relocating sample location HR-80Q-MW04 will more accurately determine the presence or absence of soil and groundwater contamination.

III. Applicable Document/Work Plan: (by the person identifying the change)

Final Site-Specific Field Sampling Plan, Site-Specific Safety and Health Plan and Site-Specific Unexploded Ordnance Plan Attachments, Range 24 Upper, Parcel 80Q, June 2001.

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

- Signatures -

Requested by: Jeffrey Tarr, PG - IT Site Manager Jeffrey J. Tarr	8-20-2001 Date
Approved by: Stanley E. Sanott	8-22-01 Date
Project Manager Approval: Jeanne Yacoub	8/20/01 Date
QA Approval: Randall L. McBride	8/23/01 Date

INTERNATIONAL TECHNOLOGY CORPORATION	**Variance No:** PARCEL71Q75Qand85Q OCTOBER01.VR1
	Linked w/NC No: x
	Date of Issue: 10-18-01
	Page _1 of 1__
Project Name: **Fort McClellan** – CK11	Project Number: 800486

-Variance Report -

I.Description: (by the person identifying the change)

FINAL SITE-SPECIFIC FIELD SAMPLING PLAN, RANGES AT IRON MOUNTAIN ROAD AND RANGES AT BAINS GAP ROAD: SKEET RANGE PARCEL 69(Q), RANGE 19 PARCEL 75(Q), RANGE 13 PARCEL 71(Q), RANGE 12 PARCEL 70(Q), RANGE 21 PARCEL 77(Q), RANGE 22 PARCEL 78(Q) AND RANGE 27 PARCEL 85(Q)

The Final Site-Specific Field Sampling Plan (FSSFSP) proposed a bedrock well and groundwater sample at sample locations HR-71Q-MW02, HR-75Q-MW02 and HR-85Q-MW04. Proposed bedrock monitoring wells HR-71Q-MW02, HR-75Q-MW02 and HR-85Q-MW04 were not installed and groundwater samples were not collected.

Identified by: James Dendy, Geologist	Date: 10-18-01

II. Justification for Variance:

During air rotary drilling at proposed locations HR-71Q-MW02, HR-75Q-MW02 and HR-85Q-MW04, bedrock was not encountered and groundwater was not present. The IT Technical Lead and IT Site Manager made a decision after consultation with the Base Closure Team including the U.S. Army Corps of Engineers, Alabama Department of Environmental Management, U.S. Environmental Protection Agency and Fort McClellan to discontinue drilling operations if bedrock was not encountered within 100 feet below ground surface (bgs). The decision to stop drilling was based upon the fact that the likelihood of lead contamination being present in groundwater at depths greater than 100 feet bgs was extremely minimal. Therefore, drilling operations were stopped and groundwater samples were not collected.

III. Applicable Document/Work Plan: (by the person identifying the change)

Final Site-Specific Field Sampling Plan, Site-Specific Safety and Health Plan and Site-Specific Unexploded Ordnance Safety Plan Attachments: Ranges at Iron Mountain Road and Ranges at Bains Gap Road, August 2001.

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

- Signatures -

Requested by: Jeffrey Tarr, PG - IT Site Manager	10-18-2001 Date
Approved by: Stanley E. Smith, USACE	11-1-01 Date
Project Manager Approval: Jeanne Yacoub	10/24/01 Date
QA Approval: Randall L. McBride	10-20-01 Date

INTERNATIONAL TECHNOLOGY CORPORATION	**Variance No:** PARCEL85QOCTOBER01.VR1
	Linked w/NC No: x
	Date of Issue: 10-23-01
	Page _1 of 1__
Project Name: **Fort McClellan** – CK11	Project Number: 800486.03SITE05

-Variance Report -

I.Description: (by the person identifying the change)

FINAL SITE-SPECIFIC FIELD SAMPLING PLAN, RANGES AT IRON MOUNTAIN ROAD AND RANGES AT BAINS GAP ROAD: SKEET RANGE PARCEL 69(Q), RANGE 19 PARCEL 75(Q), RANGE 13 PARCEL 71(Q), RANGE 12 PARCEL 70(Q), RANGE 21 PARCEL 77(Q), RANGE 22 PARCEL 78(Q) AND RANGE 27 PARCEL 85(Q)

The Final Site-Specific Field Sampling Plan (FSSFSP) proposed two monitoring wells HR-85Q-MW03 and HR-85Q-MW04 at the base of a steep hillside, south of Cane Creek and at the eastern end of Range 27. These two wells were relocated approximately 200 feet north of their proposed location.

Identified by: James Dendy, Drill Supervisor	Date: 10-23-01

II. Justification for Variance:

The FSSFSP proposed monitoring wells HR-85Q-MW03 and HR-85Q-MW04 between the base of a steep hillside and Cane Creek. The proposed location was unsafe for the drill rig to access. Several attempts were made to provide a safe access corridor to and from the proposed location, but all attempts were unsuccessful due to the steep hillside, distance of access, and rough terrain. Therefore, a decision was made by the IT Project Manager to relocate the two wells approximately 200 feet north of their proposed location and north of Cane Creek. After the two wells were relocated, they were successfully installed at that location.

III. Applicable Document/Work Plan: (by the person identifying the change)

Final Site-Specific Field Sampling Plan, Site-Specific Safety and Health Plan and Site-Specific Unexploded Ordnance Safety Plan Attachments: Ranges at Iron Mountain Road and Ranges at Bains Gap Road, August 2001.

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

- Signatures -

Requested by: Jeffrey Tarr, PG - IT Site Manager Jeffrey J. Tarr	10-23-2001 Date
Approved by: Stanley E. Barrett, USACE	10-24-01 Date
Project Manager Approval: Jeanne Yacoub	11/7/01 Date
QA Approval: Randall L. McBride	11-5-01 Date

INTERNATIONAL TECHNOLOGY CORPORATION	**Variance No:** PARCEL77QJANUARY02.VR1
	Linked w/NC No: x
	Date of Issue: 1-16-02
	Page _1 of 1__
Project Name: **Fort McClellan** – CK11	Project Number: 800486

-Variance Report -

I.Description: (by the person identifying the change)

FINAL SITE-SPECIFIC FIELD SAMPLING PLAN, RANGES AT IRON MOUNTAIN ROAD AND RANGES AT BAINS GAP ROAD: SKEET RANGE PARCEL 69(Q), RANGE 19 PARCEL 75(Q), RANGE 13 PARCEL 71(Q), RANGE 12 PARCEL 70(Q), RANGE 21 PARCEL 77(Q), RANGE 22 PARCEL 78(Q) AND RANGE 27 PARCEL 85(Q)

The Final Site-Specific Field Sampling Plan (FSSFSP) proposed residuum monitoring well HR-77Q-MW04 on the southern end of Range 21, Parcel 77(Q). Residuum monitoring well HR-77Q-MW04 was moved approximately 500 feet northwest of the proposed location.

Identified by: Steven Moran, PG – IT Project Manager	Date: 1-16-02

II. Justification for Variance:

The FSSFSP inadvertently proposed residuum monitoring well HR-77Q-MW04 in an endangered species area on the southern end of Range 21. Therefore, the IT Project Manager made a decision to relocate monitoring well HR-77Q-MW04 approximately 500 feet northwest of the proposed location. Monitoring well HR-77Q-MW04 was successfully installed at that location and a groundwater sample collected for chemical analysis. This variance will not alter the scope or intent of the Site Characterization at Range 21.

III. Applicable Document/Work Plan: (by the person identifying the change)

Final Site-Specific Field Sampling Plan, Site-Specific Safety and Health Plan and Site-Specific Unexploded Ordnance Safety Plan Attachments: Ranges at Iron Mountain Road and Ranges at Bains Gap Road; Skeet Range Parcel 69(Q), Range 19 Parcel 75(Q), Range 12 Parcel 70(Q), Range 13 Parcel 71(Q), Range 21 Parcel 77(Q), Range 22 Parcel 78(Q) and Range 27 Parcel 85(Q), August 2001.

Distribution List:
1. Jeanne Yacoub, IT Project Manager
2. Steve Moran, IT Technical Lead
3. Jeffrey Tarr, IT Site Manager
4. Randy McBride, IT QA Officer
5. Mr. Ellis Pope, US Army Corps of Engineers
6. Mr. Ross McCollum, US Army Corps of Engineers

- Signatures -

Requested by: Jeffrey Tarr, PG - IT Site Manager Jeffrey J. Tarr	1-16-2002 Date
Approved by: COE	1-16-2002 Date
Project Manager Approval: Jeanne Yacoub	1/22/02 Date
QA Approval: Randy McBride	1/21/02 Date