APPENDIX C

WELL DEVELOPMENT LOGS

Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 796887
Form Completed by: L. Flippen / Jose Maturell
Well Developed by (person/firm): IT Corp. L. Flippen, J. Maturell

Parcel No.: HR 114Q
Well No.: MW01
Date started: 4-30-01

4-30-01 PID 3.4 BKGrd 0.0

Monitoring Well Information

Development Method: Purge/Surge
Development Equipment: whale Pump

Casing Diameter: 2" .163

Beginning Measurments
Depth to Water (ft): 8.54 ft
Total depth of Well (ft): 50.44

Screen Interval - 28.8 - 48.8

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.)
4-30-01 13:25	Ø	8.54	5.79	.092	~~608~~ 687	1.80	18.2	orange	P.R. .75 GPM / P.D. 47.44
13:40	11.25	30.89	5.51	.067	45	2.30	18.4	clear	P.R. .75 ~~.87~~ GPM
13:55	22.5	31.86	5.22	.036	69	2.26	18.2	clear	P.R. .75 GPM
14:10	24.67 ~~33.75~~	34.04	5.44	.053	431	2.36	19.0	light Tan	P.R. ~~.75 GPM~~ .145 GPM
14:25	~~45.26~~ 84	35.05	5.49	.057	825	~~2.40~~ 2.28	17.9	orange	P.R. ~~.75 GPM~~ .145 GPM
14:40	29.01 ~~56.25~~	41.93	5.48	.063	999+	0.67	18.6	~~light~~ Dark Orange	41.93 W.L. stopped by top of pump P.R. .145 GPM
14:55	29.61 ~~31.10~~	"well	ran	dry"	stopped pump.				

TD - DTW = WC x 2'/4' well = One PV x 5 = Min PV + H20 to install well = Minimum H20 to remove
50.44 - 8.54 = 41.9 x .163 = 6.83 x 5 = 34.15 + 300 gal. = 334.15

Parcel No.: ~~116Q~~ HR 114Q
Well ID: MW01
Date: 4.30.01

	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
45min	15:15	29.01	38.'							well did not recharged to 80%. recharge rate 4' per 20min.
5-1-01 OM	08:50	29.01	9.'	4.93	.076	158	4.30	17.1	cloudy	P.I.D. 3.4 Backrg. 0.0. P.R. .75 GPM PD 46 ft
24	09:05	~~3.0 11.25~~ 40.26	31.16	5.12	.032	87	4.49	16.8	clear	P.R. .24 GPM
	09:20	43.86	33.22	5.06	.024	191	4.83	17.3	cloudy Tan	P.R. .24 GPM.
	09:35	45.94	34.24	5.16	.024	182	3.83	17.6	cloudy Tan	P.R. .14 GPM.
1.45hr.	09:50	48.06	36.72	5.18	.024	390	3.67	17.9	Cloudy Tan	P.R. .22 GPM.
36	10:05	51.36	36.8	5.20	.026	447	3.40	18.4	Cloudy Tan	P.R. .14 GPM
	10:20	53.46	39.52	5.21	.028	145	2.60	18.5	cloudy	P.R. .14 GPM.
	10:35	~~see Comments 55.56~~	see comments →	5.25	.032	999+	2.58	18.7	Orange	W.L. below top of whale pump. P.R. .12 GPM.
2.45hr.	10:50	Pump stopped pulling water - waiting 20min for recharge								
4hrs	11:10	water did not recharge 80%								Recharge rate 3.8 ft/min
5-2-01	09:15	53.46	9.10	5.17	.088	76	5.68	17.3	clear	PID 0.0 BKGrd 0.0 – 5-2-01 PD 30 ft PR .25 – Surged Well
	09:30	57.2	13.49	5.25	.035	36	5.98	18.3	clear	PD 30 ft PR .25

Parcel No.: HR114Q
Well ID: MW 01
Date: 5-2-01

PID 0.0 BKGrd 0.0

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
09:45	60.95	18.49	5.29	.030	16.9	5.54	18.7	clear	Moved Pump to 32ft + Surged PD 32 PR .25 .33ft/min.
10:00	64.7	20.20	5.35	.035	230	5.61	18.8	orange ~~clear~~	PD 32 PR .25
10:15	68.45	20.91	5.26	.027	42	5.54	19.3	clear	PD 32 PR .25
5hrs 10:30	72.2	21.41	5.21	.025	37	5.57	19.5	clear	Moved Pump + Surged PD 34 PR .20
10:45	75.2	21.68	5.32	.038	152	5.31	20.2	orange	PD 34 PR .20
11:00	78.2	22.40	5.20	.027	48	5.18	20.0	clear	Changed Battery PD 34 PR .20
11:15	81.2	23.01	5.24	.027	16.3	4.81	20.0	clear	PD 34 PR .25
6hrs 11:30	84.95	23.31	5.14	.028	10.5	5.01	20.7	clear	Moved Pump + Surged PD 36 PR .25
11:45	88.7	23.79	5.24	.033	201	4.69	21.0	orange	PD 36 PR .20
12:00	91.7	24.99	5.22	.029	88	4.50	20.2	clear	PD 36 PR .20
12:15	94.7	25.93	5.29	.031	42	4.42	20.7	clear	PD 36 PR .20
7hrs 12:30	97.7	26.22	5.19	.032	15.6	4.51	20.9	clear	PD 36 PR .20
12:45	100.7	26.44	5.26	.031	13.4	4.48	20.5	clear	PD 36 PR .20

Parcel No.: HR 114 Q
Well ID: MW 01
Date: 5-2-01

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
13:00	103.7	26.72	5.19	.033	9.3	4.57	20.8	clear	PD 36 ~~gt~~ PR. 20
13:15	106.7	26.88	5.20	.030	5.5	4.46	20.8	clear	-8 hrs. Development Time- Well Development Complete
13:39	124.7								Took 1 l. water Sample Purged well to Dry PR. 75 x 24 5-2-01 [signature]
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5 hrs

Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 796887 11020300
Form Completed by: Karl Kachelman
Well Developed by (person/firm): Karl Kachelman + Lee Flippen/IT

Parcel No.: HR-114Q
Well No.: MW02
Date started: 3/7/01

Monitoring Well Information

Development Method: Surge + Purge
Development Equipment: Grundfos Rdi-Flo Pump + Controller, Horiba, DRT, Water Level Indicator
Casing Diameter: 2"

Beginning Measurments
Depth to Water (ft): 7.4 ft.
Total depth of Well (ft): 117.4 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.)
09:45	0	7.40							Surge, .5 GPM Pump @ 114' bgs
10:00	7.5	44.77	7.89	.241	1000+	.31	15.6	Brown	Surge
10:15	15	57.05	9.85	.267	295	1.35	17.2	Tan	Surge .7 GPM 112' bgs
10:30	25.5	80.00	11.26	.582	335	1.16	17.7	tan	Pump @ 112' bgs, 1 GPM
10:45	26	81.60	10.84	.395	280	1.94	17.7	tan	.25 GPM 110' bgs
11:00	29.75	80.91	7.12	.139	187	1.58	18.2	tan	
11:15	33.50	80.94	6.78	.140	102	2.91	18.3	Cloudy	.30 GPM Pump @ 108' bgs

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

117.4 - 7.4 110 X .163 = 17.9 X 5 = 90 + 85 = 17.5 GAL

Parcel No.: HR-1149
Well ID: MW02
Date: 3/7/01

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
11:30	38	87.55	10.14	.320	182	2.64	19.0	cloudy	106' bgs
11:45	42.5	88.60	9.25	.341	84	3.55	19.8	cloudy	.2GPM
12:00	45.5	88.75	8.12	.218	54	2.56	21.3	clear	.6GPM 104' bgs
12:15	54.5	94.50	11.07	.507	160	1.84	19.0	cloudy	well shaken up moving pump up & down
12:30	57.5	95.85	9.10	.142	803	1.16	20.5	tan	
12:45	60.5	96.72	7.25	.163	230	2.11	22.6	cloudy	
13:00	63.5	102.47	6.46	.124	149	2.66	22.6	cloudy	106' bgs
13:15	66.5	106.00	6.22	.088	226	3.12	20.7	cloudy	
13:30	69.5	105.55	5.99	.063	10001	4.45	20.7	tan	110' bgs
13:45	72.5	105.15	6.16	.125	992	4.24	20.0	tan	
14:00	75.5	105.10	6.30	.131	10001	2.52	20.1	brown	
14:15	78.5	106.34	9.28	.245	10001	0.31	19.8	brown	Pump unable to pump
14:30	—	108.10	—	—	—	—	—	—	well recharging

Parcel No.: HR-1140
Well ID: MW02
Date: 3/7/01

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
14:45		105.25							well recharging
15:00	78.5	103.00	10.56	.299	1000+	1.41	17.3	~~Redd~~ Brown	Restart Purging 110' bgs .2GPM
15:15	81.5	106.42	8.85	.070	1000+	5.64	19.3	Brown	
15:30	84.5	110.35	7.16	.152	1000+	4.89	21.4	Brown	
15:45	87.5	114.62	10.73	.374		0.98	21.2	Brown	Drained well
08:45	87.5	12.85	Started Purging - 3/8/01						3/8/01 Pump @ 115' bgs .5GPM
09:00	95	36.42	5.41	.087	264	8.35	14.2	Tan	.2 GPM
09:15	98	50.95	5.83	.062	93	8.26	17.3	Cloudy	110' bgs
09:30	101	63.22	5.89	.067	70	8.79	19.1	Cloudy	105' bgs
09:45	104	78.05	5.90	.071	69	8.35	20.4	Cloudy	
10:00	107	85.48	6.01	.074	116	6.52	20.6	Cloudy	100' bgs
10:15	110	92.17	5.98	.062	85	6.46	19.9	Cloudy	98' bgs
10:30	113	92.80	5.78	.052	76	5.94	21.2	Cloudy	

Parcel No.: HR-114 ϕ
Well ID: MW02
Date: 3/8/01

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
10:45	116	93.60	5.64	.037	180	5.52	20.0	Cloudy	.1GPM Lost Flow- Restart
11:00	119	94.78	5.54	.031	294	6.06	20.8	Cloudy	
11:15	122	95.61	5.55	.032	557	5.77	21.3	Cloudy	
11:30	125	96.40	5.52	.034	280	6.98	20.9	Cloudy	
11:45	128	97.82	5.58	.054	381	6.21	20.2	Cloudy	Lost Flow- Restart
12:00	131	98.88	5.65	.061	304	6.07	21.5	Cloudy	
12:15	134	99.75	5.80	.043	220	6.01	22.6	Cloudy	
12:30	137	101.37	5.82	.053	220	6.51	21.4	Cloudy	
12:45	140	103.90	6.00	.056	187	5.86	22.3	Cloudy	
13:00									Well recharging
13:15									"
13:30									"
13:45									"

Parcel No.: HR-114R
Well ID: MW-02
Date: 3/8/01

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
14:00	140	100.86	6.02	.047	186	7.91	19.3	cloudy	.100 gpm Restart Purging 110' bgs
14:15	143	102.67	5.84	.057	500	7.20	21.6	brown	.10 gpm
14:30	144.5	104.05	5.90	.050	461	5.63	20.5	tan	
14:45	146	103.80	5.96	.049	413	6.64	20.8	tan	
15:00	147.5	105.00	5.93	.047	198	7.48	21.7	cloudy	
15:15	149	105.50	5.81	.048	201	7.70	22.2	cloudy	107' bgs
15:30	150.5	105.25	5.91	.049	197	7.41	21.6	cloudy	
15:45	152	105.00	5.95	.052	199	7.86	21.7	cloudy	
16:00	153.5	104.32	5.90	.046	79	7.38	21.0	cloudy	Lost Flow - Restart
16:15	155	104.30	5.72	.046	69	6.60	22.2	cloudy	Lost Flow
16:30	—	—	—	—	—	—	—	—	Drained well
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Parcel No.: HR-114Q
Well ID: MW-02
Date: 3/9/01

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
08:30	155	12.44	5.12	.057	136	6.94	14.4	cloudy	.25 GPM 96' bgs
08:45	158.75	31.75	5.53	.043	124	7.46	15.7	cloudy	
09:00	162.50	37.12	5.54	.040	123	6.82	15.7	cloudy	
09:15	166.25	42.43	5.57	.038	116	6.76	16.1	cloudy	
09:30	170	46.65	5.60	.039	74	6.78	15.9	cloudy	.2 GPM Getting Cleaner
09:45	173	54.73	5.60	.042	50	6.25	16.8	clear	Pump @ 96' bgs
10:00	176	56.32	5.67	.039	41	6.17	16.0	clear	
10:15	179	59.50	5.73	.045	34	6.23	16.5	clear	.1 GPM
10:30	180.5	63.12	5.76	.049	32	6.19	16.5	clear	
10:45	182	63.22	5.74	.052	30	6.08	16.7	clear	
11:00	183.5	63.75	5.76	.047	26	6.14	16.4	clear	Losing flow - restarted
11:15	185	64.04	5.77	.050	24	6.11	16.6	clear	Trying hard to maintain flow
11:30	186.5	64.17	5.73	.050	24	6.17	16.4	clear	well developed. Sample Collected.

Groundwater Well Development Log

Fort McClellan , Alabama

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

Parcel No.: HR-114Q
Well No.: MW03
Date started: 2/19/01

Monitoring Well Information

Development Method: Surge/purge
Development Equipment: Whale ~~Water~~ 2/19/01 Pump

Casing Diameter: 2"

Beginning Measurments
Depth to Water (ft): ~~38.74'~~ 13.56' (TOC)
Total depth of Well (ft): 38.74' (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.)
10:14	—	13.56	4.72	0.081	740	7.12	15.8	cloudy	1.5 gal/min, Pump@33' TOC
10:29	18	21.92	5.68	0.046	523	6.42	16.1	cloudy	1.0 gal/min @ 1020
10:44	33	23.20	5.85	0.045	839	6.39	16.3	cloudy	
10:59	48	21.48	5.95	0.040	500	6.55	16.7	cloudy	
11:14	74	21.58	5.95	0.040	240	6.73	17.3	cloudy	
11:29	89	21.68	6.02	0.038	154	6.78	16.9	Slightly Cloudy	Pump moved up 1 foot @ 1120
11:44	104	21.73	5.98	0.037	78	6.54	17.0	Slightly Clear	

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

38.74' - 13.56' = 25.18* 0.163 = 4.10 x 5 = 20.52 + 35 gal 55.52 gal

Parcel No.: HP-114Q
Well ID: MW03
Date: 2/19/01

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)
11:59	119	21.82	5.95	0.037	40	6.94	17.3	slightly clear	
12:14	134	22.50	5.98	0.035	74	6.66	17.6	slightly cloudy	rate slowed to 0.25 gal/min @ 1214
12:29	141.5	21.18	5.96	0.035	24	6.87	17.6	clear	
12:44	149	21.54	5.98	0.033	16	6.89	17.6	clear	
12:59	156.5	20.37	5.73	0.033	13	6.54	17.5	clear	
13:14	164	20.40	5.60	0.032	12	6.60	17.2	clear	
13:29	171.5	21.34	5.65	0.032	7.3	6.32	17.4	clear	
13:44	179.0	20.92	5.70	0.032	6.4	6.62	17.2	clear	
13:59	186.5	20.89	5.61	0.032	6.5	6.43	16.9	clear	
14:14	194	22.15	5.71	0.032	8.3	6.11	16.7	clear	
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Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 796887
Form Completed by: Jacob Purcell
Well Developed by (person/firm): Jacob Purcell IT CORP.

Parcel No.: 115Q
Well No.: HR-115Q-MW01
Date started: 02/14/01

Monitoring Well Information

Development Method: WHALE PUMP
Development Equipment: WHALE PUMP, HORIBA, DRT

Casing Diameter: 2"

Beginning Measurments
Depth to Water (ft): 7.85
Total depth of Well (ft): 30.80

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)
14:20	10	12.93	5.27	.022	999+	7.18	15.4	PINK	SURGED
14:35	25	12.24	5.32	.021	80.1	7.25	16.1	CLEARING	SURGED
14:50	58	12.29	5.36	.023	77.6	7.21	15.9	CLEARING	
15:05	84	12.46	5.40	.025	81.9	7.29	16.7	CLEARING	PUMP @ TOP OF SCREEN
15:20	110	12.49	5.36	.021	80.4	7.19	16.2	CLEARING	PUMP @ MID SCREEN
15:35	140	12.51	5.37	.022	78.4	7.23	16.5	CLEARING	PUMP RUNNING WIDE OPEN
15:50	172	12.56	5.40	.025	120	7.29	17.1	CLOUDY	SURGED

TD - DTW = WC x 2"/4" well = ONE PV x 5 = MIN PV + H_2O TO INSTALL WELL = MINIMUM H_2O to REMOVE
30.80 - 7.85 = 22.95 x .163 = 3.74 x5 = 18.7 + 100 = 118.7

Parcel No.: 115Q
Well ID: MW01
Date: 02/14, 02/15/01

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	200	13.31	5.15	.019	43.6	7.23	15.9	CLEAR	2 FT. FROM BOTTOM
16:20	220	13.42	5.01	.017	32.6	7.26	15.9	CLEAR	
08:25	230	11.68	4.86	.047	588	7.13	16.1	CLOUDY	02/15/01 (From this point on) SURGED
08:40	258	11.88	4.94	.020	35.6	7.21	14.9	CLOUDY	LIFT PUMP 1 FT.
08:55	285	12.31	4.91	.019	316	7.29	14.6	CLOUDY	SURGED
09:10	317	12.52	4.95	.019	46.2	7.21	14.3	CLEARING	
09:25	340	12.59	4.98	.017	47.5	7.30	15.0	CLOUDY	SURGED
09:40	367	12.98	4.97	.017	100	7.26	15.1	CLOUDY	
09:55	395	13.41	4.98	.017	11.6	7.29	15.2	CLEAR	
10:10	420	13.62	4.96	.016	10.9	7.25	15.3	CLEAR	
10:25	450	13.98	4.94	.015	120	7.19	15.6	CLOUDY	HAVE DRAWN IN SEDIMENTS
10:40	478	14.21	4.96	.016	15.5	7.26	15.1	CLEAR	
10:45	485	14.36	4.98	.015	14.6	7.28	15.3	CLEAR	

Parcel No.: 115Q
Well ID: mw01
Date: 02/15/01

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)
10 :50	492	14.42	4.94	.015	9.82	7.19	15.9	CLEAR	
10 :55	500	14.51	4.91	.016	8.71	7.23	15.1	CLEAR	
11 :00	510	14.55	4.94	.015	8.93	7.26	15.5	CLEAR	
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FINAL ENTRY

J. Purcell

Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 796887
Form Completed by: Jacob Purcell
Well Developed by (person/firm): Jacob Purcell IT CORP.

Parcel No.: 115 Q
Well No.: HR-115Q - MW02
Date started: 02/08/01

Monitoring Well Information

Development Method: Whale Pump
Development Equipment: Whale Pump, Horiba, ORT,

Casing Diameter: 2"

Beginning Measurments
Depth to Water (ft): 10.81
Total depth of Well (ft): 32.95

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)
15:35	5	23.21	5.91	.270	999+	7.35	18.5	grey	surged
15:50	8	23.65	5.48	.217	999+	7.62	18.9	grey	
16:05	11	24.21	5.67	.164	999+	7.68	18.7	grey/ clearing	
16:20	14	24.85	5.18	.154	149	7.40	19.1	Cloudy	
16:35	17	24.91	5.10	.149	46	7.54	19.1	Cloudy/ Clearing	
16:50	21	24.98	5.03	.151	48	7.61	19.2	Cloudy/ Clearing	Shut down for day
~~09:00~~ 09:15	23	16.21	4.02	.041	999+	4.20	16.5	Cloudy	02/09/01

TDI - DTW = WC
32.95 - 10.81 = 22.14 × .163 (2" well) = 3.6 WV × 5 = 18 gal + 40 (had used to wash all well) = 58 gal To Remove

Parcel No.: 115Q
Well ID: HR-115Q-MW02
Date: 02/09/01

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	25	18.91	4.55	.037	999+	4.88	16.7	Cloudy	02/09/01
09:45	27	19.76	4.87	.029	395	5.03	17.4	Cloudy	" turb taken w/ DRT
10:00	29	20.16	4.97	.025	225	9.85	17.8	Cloudy	"
10:15	31	20.96	4.92	.023	144	7.54	17.9	cloudy	"
10:30	33	21.15	4.98	.022	127	7.52	18.1	Cloudy	"
10:45	35	21.65	4.79	.021	140	7.36	19.1	Cloudy	"
11:00	39	21.68	4.88	.019	153	7.26	19.5	Cloudy	" opened valve to release sediment
11:15	42	23.76	4.80	.019	120	7.30	19.5	cloudy	"
11:30	45	23.89	4.92	.019	94.3	7.32	19.2	cloudy	"
11:45	49	23.96	4.90	.019	65.5	7.30	19.4	clearing	"
12:00	53	24.06	4.93	.019	56.0	7.33	19.7	Clearing	" opened valve to release sediment
12:15	57	25.21	4.95	.018	43.6	7.35	20.1	Clearing	"
12:30	60	25.61	4.97	.019	40	7.29	20.5	Clearing	"

Parcel No.: 115Q
Well ID: MW02
Date: (02/09)(02/12)(02/10)
02/14/01

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 (Date if different from start date)
12:45	63	25.99	4.96	.019	39	7.33	20.6	clearing	opened valve to release sediment 02/09/01
10:10	78	26.98	4.40	.064	32	5.60	13.4	clear	02/12/01
10:25	89	N/A	5.03	.025	255	5.50	13.8	Cloudy	02/12/01 well is almost dry H2O level indicator is on pump
16:00	93	13.29	5.17	.090	359	0.10	14.4	Cloudy	02/13/01
16:15	96	13.29	5.32	.037	239	0.10	13.7	Cloudy	"
16:30	99	13.29	5.16	.027	85	5.85	13.5	Cloudy	"
16:45	102	13.29	5.08	.029	64	6.26	13.4	Cloudy	"
17:00	107	13.29	5.12	.028	66	5.68	13.0	cloudy	"
09:05	110	11.01	5.17	.068	42.1	8.15	17.0	Clearing	12/14/01 Hit patch of sediment
09:20	113	11.15	5.24	.032	90.1	8.21	17.3	Cloudy	" raised pump 1ft.
09:35	117	1432	5.22	.031	90.3	8.29	17.1	cloudy	" opened valve
09:50	121	16.13	5.29	.032	92.0	8.19	16.9	Cloudy	"
10:05	125	17.96	5.21	.032	89.1	8.22	17.2	Clearing	"

Parcel No.: 115Q
Well ID: HR-115Q-MW02
Date: 02/14/01

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 (Date if different from start date)
10 :20	129	18.25	5.26	.034	59.8	8.23	17.8	Clearing	02/14/01
10 :35	133	19.36	5.19	.027	27.6	8.19	17.9	Clear	took " sample
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Final Entry
J Russell 02/14/01

Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 796987
Form Completed by: Brian Rhodes/ Mike May
Well Developed by (person/firm): Rhodes/May / IT

Parcel No.: 115
Well No.: HR 115-Q-MW03
Date started: 2-14-01

Monitoring Well Information

Development Method: Surge + Purge
Development Equipment: Whale Pump, Horiba, DRT, water level indicator
Casing Diameter: 2"

Beginning Measurments
Depth to Water (ft): 20.2' TOC
Total depth of Well (ft): 37.7' 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)
14 : 20	.5	23.42	6.05	.174	1K+	10.32	18.2	Brown	pump @ 34' bgs, .10gpm
14 : 35	2.0	25.76	5.98	.162	1K+	10.61	17.5	Brown	increase flow to .30gpm
14 : 50	6.5	26.20	5.89	.154	1K+	0.52	18.1	Brown	decrease flow to .20gpm
15 : 05	9.5	26.63	5.85	.157	920	0.27	17.9	TAN	
15 : 20	12.5	26.82	5.90	.175	1K+	0.51	18.0	TAN	pump @ 32' bgs
15 : 35	15.5	26.97	5.88	.169	963	0.81	17.9	TAN	
15 : 50	18.5	27.00	5.87	.161	482	0.12	17.7	Cloudy	

WC x 2" well
17.5 .163 = 2.85 x5 = 14.26 + 80 gal. = 94.26 gal. to be purged

Parcel No.: 115
Well ID: MW03
Date: 2-14-01

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 (Date if different from start date)
16 : 05	21.5	27.15	5.84	.155	216	0.83	17.7	Cloudy	
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09 : 20	24.5	20.00	5.87	.157	1Kt	0.98	15.7	Brown	pump @ 25.0' Bgs .10gpm
09 : 35	23.0	24.57	5.98	.175	1Kt	1.17	15.9	Brown	increase flow to .50gpm move pump to 32' bgs
09 : 50	26.5	30.02	5.99	.176	1Kt	1.71	16.1	Brown	.20 gpm
10 : 05	29.5	30.59	6.14	.180	1Kt	1.75	16.0	Brown	
10 : 20	32.5	30.20	6.15	.181	1Kt	1.69	16.1	Brown	pump @ 32' Bgs
10 : 35	35.5	30.05	6.07	.147	697	1.89	16.0	TAN	
10 : 50	38.5	29.94	6.14	.151	366	1.91	16.2	TAN	
11 : 05	41.5	29.17	6.25	.172	179	1.98	16.0	Cloudy	pump @ 30' Bgs
11 : 20	44.5	28.76	6.21	.149	127	1.81	15.7	Cloudy	Decrease to .10gpm
11 : 35	46.0	27.20	6.13	.181	89	1.79	16.0	Clear	
11 : 50	47.5	26.17	6.40	.197	80	1.65	16.1	Clear	pump @ 28' Bgs

Parcel No.: 115
Well ID: MW03
Date: 2-15-01

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 : 05	49.0	24.90	6.28	.167	71	.089	16.2	Clear	
12 : 20	50.5	24.45	6.34	.171	70	1.10	16.0	Clear	
12 : 35	52.0	23.98	6.47	.150	79	1.18	16.4	Clear	pump @ 25' bgs
12 : 50	53.5	23.79	6.50	.194	61	1.25	16.7	Clear	pump @ 29' bgs
13 : 05	55.0	23.64	6.51	.200	34	1.97	16.0	Clear	
13 : 20	56.5	23.47	6.47	.197	27	1.78	16.0	Clear	
13 : 35	58.0	23.15	6.53	.189	29	1.47	16.2	Clear	pump stops
15 : 00	58.0	21.97	6.79	.175	202	1.54	16.0	Cloudy	pump @ 29' bgs
15 : 15	59.5	23.40	6.79	.180	195	1.74	15.9	Cloudy	
15 : 30	61.0	23.97	6.99	.197	192	1.87	16.4	Cloudy	
15 : 45	62.5	22.98	7.05	.119	180	1.97	16.0	Cloudy	
16 : 00	64.0	22.71	7.15	.127	145	1.98	16.0	Cloudy	
16 : 15	65.5	22.65	7.08	.149	90	1.76	16.7	Cloudy	pump @ 32' bgs

Parcel No.: 115
Well ID: MW03
Date: 2-15-01

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)
16:30	67.0	22.42	7.10	.150	81	1.79	16.5	cloudy	
16:45	68.5	22.37	7.00	.147	37	1.97	16.0	clear	
17:00	70.0	22.18	6.79	.172	51	1.80	16.7	clear	
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08:00	70.0	20.0	6.45	.089	281	1.97	14.9	Cloudy	pump @ 29' bgs
08:15	71.5	21.98	6.72	.117	222	1.42	15.2	Cloudy	
08:30	73.0	22.10	7.15	.192	185	2.05	15.2	Cloudy	
08:45	74.5	22.27	7.07	.202	134	2.17	15.0	cloudy	
09:00	76.0	22.48	7.04	.198	121	2.15	15.4	Clouds	
09:15	77.5	22.57	7.00	.202	109	2.17	15.0	cloudy	
09:30	79.0	22.71	7.15	.197	88	2.08	15.7	Cloudy	
09:45	80.5	22.69	6.49	.186	66	2.09	15.9	Cloudy	
10:00	82.0	22.48	6.75	.192	42	2.08	16.0	Clear	

Parcel No.: 115
Well ID: MW03
Date: 2-18-01

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 (Date if different from start date)
10 :15	83.5	22.37	6.98	.179	47	2.10	16.5	Clear	TAKE Sample inc. 1 to 10 gp
10 :30	98.5	29.75	7.15	.197	125	2.09	16.0	Cloudy	
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Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 796887 110020300
Form Completed by: Karl Kachelman
Well Developed by (person/firm): Karl Kachelman / IT

Parcel No.: ~~HR-114Q~~ 115Q
Well No.: ~~HR-114Q-MW02~~ 115Q-MW05
Date started: 3/5/01

Monitoring Well Information

Development Method: Surge & Purge
Development Equipment: Grundfos Redi-Flo Pump, Horiba Turbidimeter, water Level Indicator
Casing Diameter: 2"

Beginning Measurments
Depth to Water (ft): 9.40
Total depth of Well (ft): 79.3

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.)
09:30	0	9.40	5.39	.064	628	6.69	14.0	tan	Pump @ 76' bgs Surge .6 GPM
09:45	9	18.63	5.46	.054	326	6.87	16.2	cloudy	Surge
10:00	18	28.82	5.38	.052	895	6.35	16.1	tan	Surge .5GPM 74' bgs
10:15	27	28.96	5.71	.065	634	6.08	16.2	tan	Surge
10:30	34.5	28.14	5.66	.048	489	6.01	16.7	cloudy	
10:45	42	28.40	5.45	.045	358	6.09	16.7	cloudy	72' bgs
11:00	49.5	28.51	5.39	.042	579	6.17	16.7	cloudy	

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

79.3 - 9.4 = 69.9 X .163 = 11.4 x 5 = 57 + 90 = 147 GAL

CH 3191151

Parcel No.: HR-~~1140~~ 1150
Well ID: ~~MW02~~ MW05
Date: 3/5/01

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	57	28.03	5.39	.041	680	6.08	16.3	Cloudy	70' bgs .4 GPM
11:30	63	25.58	5.36	.042	284	6.32	16.5	Cloudy	
11:45	69	25.70	5.35	.040	205	6.16	16.7	Cloudy	68' bgs
12:00	75	25.85	5.31	.040	193	6.18	16.5	Cloudy	
12:15	81	25.88	5.28	.038	200	6.21	16.8	Cloudy	66' bgs
12:30	87	26.00	5.25	.037	129	6.29	16.7	Cloudy	Getting clearer
12:45	93	26.08	5.23	.037	109	6.10	16.7	Cloudy	64' bgs
13:00	99	26.07	5.20	.036	95	6.12	16.8	Cloudy	
13:15	105	25.90	5.18	.036	98	6.36	17.0	Cloudy	62' bgs .2 GPM
13:30	108	26.31	5.13	.037	96	6.14	16.7	Cloudy	
13:45	111	26.38	5.17	.035	72	6.33	16.7	Cloudy	60' bgs
14:00	114	26.48	5.16	.035	77	6.09	16.6	Cloudy	
14:15	117	26.55	5.17	.034	70	6.16	16.6	Cloudy	58' bgs

Parcel No.: HR-~~1145~~ 115Q CH 3/19/01
Well ID: ~~MW02~~ MW05
Date: 3/5/01

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
14:30	120	26.58	5.15	.034	61	6.18	16.5	Cloudy	
14:45	123	26.61	5.13	.033	55	6.11	16.6	Cloudy	57' bgs
15:00	126	26.66	5.19	.033	55	6.08	16.4	Cloudy	.15 GPM
15:15	128.25	26.68	5.18	.033	54	6.13	16.6	Cloudy	
15:30	130.5	26.70	5.17	.033	46	6.10	16.7	Clear	
15:45	132.75	26.76	5.20	.034	53	6.17	16.4	Cloudy	
16:00	135	26.72	5.17	.034	50	6.20	16.5	Cloudy	
16:15	137.25	26.77	5.16	.033	46	6.24	16.7	Clear	
16:30	139.5	26.80	5.15	.032	45	6.18	16.5	Clear	
09:00	139.5	9.48	Started		Purging				Pump @ 76' bgs 3/6/01 .4 GPM
09:15	145.5	23.88	5.48	.050	509	6.08	17.8	Cloudy	
09:30	151.5	24.02	5.53	.045	338	6.14	17.3	Cloudy	
09:45	157.5	25.02	5.34	.037	503	6.06	17.6	Cloudy	.2 GPM Pump @ 70' bgs

Parcel No.: HR-~~HH~~ 1150 CH 3/19/01
Well ID: ~~MW07~~ MW05
Date: 3/6/01

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
10:00	160.5	25.11	5.27	.032	152	5.98	18.0	Cloudy	
10:15	163.5	25.52	5.22	.032	124	5.97	17.6	Cloudy	.15 GPM 64' bgs
10:30	165.75	25.26	5.17	.032	86	6.23	16.8	Cloudy	
10:45	168	25.33	5.16	.033	55	6.38	16.6	Clear	
11:00	170.25	25.38	5.15	.033	49	6.41	16.4	Clear	.10 GPM 58' bgs
11:15	171.75	25.32	5.17	.030	42	6.36	16.3	Clear	
11:30	173.25	25.27	5.16	.031	37	6.38	16.2	Clear	
11:45	174.75	25.15	5.17	.031	37	6.44	16.3	Clear	
12:00	176.25	25.02	5.18	.032	37	6.42	16.1	Clear	Well Developed Sample Collected
:									
:				Karl Kachelmann 3-6-01					
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TOTAL HRS: 10
TOTAL GAL Removed: 176.25

Groundwater Well Development Log

Fort McClellan , Alabama

Project Number: 7960887
Form Completed by: N. Baden
Well Developed by (person/firm): N. Baden

Parcel No.: HR-117Q
Well No.: MW08
Date started: 2/22/01

Monitoring Well Information

Development Method: ~~teflon~~ bailer / surge/pump
Development Equipment: teflon bailer / whale pump

Casing Diameter: 2"

Beginning Measurments
Depth to Water (ft): 26.54 (TOC)
Total depth of Well (ft): 36.6'

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	0.25	24.7	4.95	0.143	>1000	8.88	14.9	cloudy orange	
13:04	0.50	25.8	4.97	0.096	>1000	9.81	14.6	cloudy orange	
13:14	0.75	24.95	4.93	0.083	>1000	9.82	14.5	cloudy orange	
13:18	1.0	24.9	4.84	0.084	>1000	10.45	14.6	cloudy orange	
13:22	1.25	25	4.93	0.078	>1000	10.02	14.5	cloudy orange	
13:31	1.50	25	4.88	0.079	>1000	10.01	14.6	cloudy orange	
13:48	2.75	25.2	5.02	0.080	>1000	10.25	14.9	cloudy orange	~~well bailed dry~~ @ 2/22/01

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

36.6' - 26.54 = 10.06 x 0.163 = 1.64 x5 8.2 + 105 = 113.2

Parcel No.: HR-117Q
Well ID: MW08
Date: 2/22/01

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)
14:36	3.00 ~~0.25~~	24.7'	4.89	0.081	>1000	9.90	14.2	cloudy orange	
15:06	5.75 ~~5.00~~	25.65	5.01	0.080	>1000	9.96	14.1	cloudy orange	
15:38	8.50	25.65	5.02	0.080	>1000	10.04	14.0	cloudy orange	
16:23	10.75							cloudy orange	
2/23 10:15	10.75	N/A	4.99	0.047	>1000	7.77	15.2	cloudy	cannot use water level meter - water is below top of pump 2/23/01 Pump = 1' off bottom Pump rate 0.5 gpm
10:30	18.25	N/A	5.11	0.021	>1000	7.94	15.8	cloudy	2/23/01 flow rate 0.25 gpm after readings
10:45	22	N/A	5.17	0.020	>1000	7.64	16.3	cloudy	2/23/01
11:00	25.75	N/A	5.08	0.020	1042	7.42	16.7	cloudy	
11:15	27.5	N/A	5.21	0.019	274	7.31	17.1	cloudy	
11:30	31.25	N/A	5.07	0.020	439	7.73	17.3	cloudy	
11:45	35	N/A	5.00	0.019	168	7.02	16.7	cloudy	
2/27 09:15	38.75	N/A	4.92	0.048	808	6.95	15.0	cloudy	2/27/01 flow rate: 0.25 gpm Pump 1' off bottom

Parcel No.: HR-117Q
Well ID: MW08
Date: 2/27/01

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	42.5	N/A	5.09	0.025	751	6.72	15.7	cloudy	2/27/01
09:45	46.25	N/A	5.12	0.020	397	6.75	16.7	cloudy	
10:00	50	N/A	5.15	0.021	149	7.47	17.0	cloudy	
10:15	53.75	N/A	5.13	0.020	129	7.46	16.8	cloudy	
10:30	57.5	N/A	5.13	0.020	153	6.97	16.6	cloudy	
10:45	61.25	N/A	5.12	0.021	185	7.05	16.4	cloudy	
11:00	65.0	N/A	5.06	0.020	160	7.45	16.4	cloudy	
11:15	68.75	N/A	5.12	0.021	849	6.85	16.5	cloudy brownish	
11:30	72.5	N/A	5.13	0.021	261	7.22	16.3	cloudy	
11:45	76.25	N/A	5.12	0.021	~~16~~ 139	6.82	16.2	cloudy	
12:00	80	N/A	5.14	0.021	131	7.32	16.1	cloudy	
12:15	83.75	N/A	4.98	0.020	283	7.33	15.8	cloudy	

Parcel No.: HP-117Q
Well ID: MW08
Date: 2/27/01

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)
12:30	87.50	N/A	5.01	0.020	329	7.15	15.3	cloudy	2/27/01
12:45	91.25	N/A	5.06	0.021	493	7.47	15.6	cloudy	
13:00	95.0	N/A	5.06	0.021	460	6.87	15.7	cloudy	
13:15	98.75	N/A	5.09	0.021	342	6.98	16.1	cloudy	
13:30	102.5	N/A	5.08	0.021	223	6.78	16.0	cloudy	
13:45	106.25	N/A	5.13	0.022	280	7.47	16.1	cloudy	
14:00	110.0	N/A	5.12	0.026	255	6.95	16.0	cloudy	
14:15	113.75	N/A	5.18	0.021	282	7.09	16.1	cloudy	
14:30	117.5	N/A	5.12	0.020	143	7.35	15.9	cloudy	
14:45	120.38	N/A	5.18	0.021	163	7.21	16.2	cloudy	
15:00	122.28	N/A	5.09	0.021	163	6.75	16.1	cloudy	
15:15	124.16	N/A	5.11	0.022	94	7.30	15.8	cloudy	

Parcel No.: HR-117Q
Well ID: MW08
Date: 2/27/01

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	126.04	N/A	5.20	0.022	72	7.29	14.8	Cloudy	Sample collected for photography
:		Last Entry -- Well Developed, TAW SOP Time Limit							
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Groundwater Well Development Log

Fort McClellan , Alabama

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

Parcel No.: HR-151Q-
Well No.: MW01
Date started: 2/22/01

Monitoring Well Information

Development Method: Surge/purge
Development Equipment: whale pump

Casing Diameter: 2"

Beginning Measurments
Depth to Water (ft): 8.79
Total depth of Well (ft): 57.0

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.)
11:45	2.5	~~4.86~~ 30.31	~~4.538~~ 4.86	~~>999~~ 0.038	+999	6.25	17.2	Grey	0.5gpm, surged 1' from TD
12:00	10.0	~~4.91~~ 33.05	4.91	0.043	+999	6.51	16.9	Brown	0.5gpm surged 1' from TD
12:15	17.5	33.98	4.97	0.036	+999	6.64	16.7	brownish	0.5gpm raised pump 3FT.
12:30	25.0	39.52	4.83	0.030	+999	6.21	16.9	brownish	0.5gpm ran pump length of screen
12:45	32.5	43.91	5.03	0.032	+999	6.43	17.2	brownish	0.5gpm
13:00	40.0	42.79	4.23	0.013	+999	7.26	17.0	brownish	0.5gpm, well recharging
13:15	47.5	43.05	4.31	0.013	+999	6.94	17.1	brownish	0.4gpm

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

LOGGED

Parcel No.: HR-151Q
Well ID: MW01
Date: 2/22/01

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)
13:30	54.0	43.09	4.40	0.014	+999	7.10	16.9	brownish	0.4 gpm pump 1ft off bottom
13:45	60	42.98	4.31	0.013	+999	6.85	16.9	brownish	~~0.75~~ .4 ~~0.4~~ gpm
14:00	66	42.94	4.36	0.012	619	7.94	17.0	cleaning cloudy	"
14:15	72	42.84	4.45	0.012	540	8.08	17.0	Cleaing cloudy	"
14:30	78	42.61	4.26	0.012	317	8.15	16.8	cleaning cloudy	"
14:45	84	42.68	4.23	0.012	400	8.17	16.5	cloudy	"
15:00	90	42.69	4.28	0.012	153	8.06	16.1	Clearing	"
16:20	92	36.12	4.68	0.015	170	8.51	15.9	cloudy	~~1~~.01
16:35	98	40.13	4.53	0.013	215	8.25	15.9	Cloudy	~~1~~.04
09:45	98	~~40~~ 2/28/01 6.85	4.78	0.046	>1000	4.39	15.3	brown	2/28/01 0.25 gpm pump 1ft off bottom
10:00	101.75	18.0	4.82	0.020	179	5.87	15.9	cloudy brownish	
10:15	105.50	24.26	4.68	0.018	112	6.22	15.9	cloudy	

Parcel No.: HR-151Q
Well ID: ~~AAW08~~ MW01 CH 3/19/01
Date: 2/28/01

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)
10:30	109.25	26.35	4.60	0.016	>1000	7.72	16.4	~~26.35~~ 2/28/01 brown	0.25gpm pump 1' off bottom
10:45	113.0	27.5	4.63	0.015	261	6.27	16.6	cloudy	
11:00	116.75	27.36	4.57	0.014	144	5.87	16.7	slightly cloudy	
11:15	120.5	26.74	4.55	0.012	182	7.07	16.9	slightly cloudy	
11:30	124.25	26.80	4.49	0.013	44	5.60	17.3	clear	
11:45	128	28.87	4.48	0.013	>1000	7.45	17.1	brown	ran pump up screen pump 5ft off bottom
12:00	131.75	31.72	4.53	0.014	>1000	7.21	17.1	cloudy brownish	
12:15	135.5	31.26	4.57	0.013	218	5.75	17.4	cloudy	
12:30	139.25	31.63	4.54	0.012	356	6.23	17.2	cloudy	
12:45	143	33.45	4.57	0.014	130	5.87	17.1	cloudy	
13:00	146.75	31.88	4.53	0.012	92	5.91	17.3	cloudy	
13:15	150.5	31.1	4.64	0.011	42	6.68	17.0	clear	

Parcel No.: HR-151Q
Well ID: ~~MW08~~ MW01 CH 3/19/01
Date: 2/28/01

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)
13:45	154.25	31.65	4.58	0.012	26	7.05	17.0	clear	
14:00	158	31.95	4.45	0.012	26	6.57	16.8	Clear	
14:15	161.75	32.2	4.41	0.012	33	6.62	16.9	clear	
14:30	165.5	32.64	4.42	0.011	25	5.66	16.9	clear	
14:45	169.25	31.75	4.47	0.011	27	6.76	16.8	clear	
15:00	173	31.46	4.45	0.011	14.5	6.44	16.8	clear	
15:15	176.75	30.~~15~~ 47	4.42	0.010	8.6	5.88	16.8	clear	
15:30	180.5	30.15	4.47	0.010	12.7	6.73	16.8	clear	
15:35	184.25	29.75	4.36	0.010	25	5.81	16.7	clear	
15:45	188.0	28.82	4.34	0.010	34	6.40	16.7	clear	Sample collected for photography NTU's: 14.6
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:									

Groundwater Well Development Log

Fort McClellan , Alabama

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

Parcel No.: HR-201Q
Well No.: MW01
Date started: 2/20/01

Monitoring Well Information

Development Method: Surge/Purge
Development Equipment: whale pump

Casing Diameter: 2"

Beginning Measurments
Depth to Water (ft): 23.56' (TOC)
Total depth of Well (ft): 47.1' (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.)
10:30	1.25	24.52	4.73	0.052	>1000	5.87	16.6	Murky reddish orange	0.25 gallons/minute pump in ~~[illegible]~~ bottom
10:45	5.0	25.85	4.82	0.018	~~>1000~~ 530 2/20/01	6.09	16.8	cloudy orange tint	
11:00	8.75	25.81	4.81	0.017	>1000 ~~530~~ 2/20/01	5.62	16.7	cloudy	
11:15	12.5	25.90	4.76	0.018	62	5.91	16.8	Slightly Cloudy	
11:30	16.25	26.0	4.78	0.018	15.1	6.28	16.6	Clear	Moved pump up ~~two~~ feet after taking parameters
11:45	20	25.91	4.81	0.018	127	6.19	16.8	Cloudy	
12:00	23.75	25.95	4.74	0.020	44	5.72	17.0	clear	

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

47.1 23.56 = 23.54 x 0.163 = 3.84 x 5 = 19.19 + 85 = 104.19 gallons

3.75

Parcel No.: HR-201Q
Well ID: MW01
Date: 2/20/01

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)
12:15	27.5	26.0	4.71	0.019	8.3	6.12	17.3	clear	
12:30	31.25	26.2	4.80	0.018	229	5.65	17.4	cloudy	pump moved up 2' ~~off bottom~~ for a total of 5' off bottom @ 1227
12:45	35	25.5	4.93	0.018	41	5.81	17.5	clear	
13:00	38.75	26.1	4.86	0.020	21	6.04	17.3	clear	
13:15	42.5	25.95	4.87	0.017	67	5.99	17.5	clear	
13:30	46.25	25.89	4.93	0.017	6.2	6.07	17.9	clear	
13:45	50	25.9	4.93	0.017	1.6	5.67	18.1	clear	
14:00	53.75	25.88	4.90	0.017	1.4	5.83	17.8	clear	
14:15	59	28.1	4.92	0.017	103	6.25	17.2	cloudy orange first	increased flow rate to 1gal/min @ 1413
14:30	74	29.6	4.79	0.016	>1000	6.22	17.1	cloudy	
14:45	89	29.87	~~3.92~~ 4.78 2/20/01	0.016	739	7.01	17.0	cloudy	
~~14~~ 15:00 2/20/01	104	31.34	4.78	0.016	152	6.33	16.9	cloudy	

Parcel No.: HR-201Q
Well ID: MW01
Date: 2/20/01

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)
15:15	116.75	27.64	4.84	0.015	284	6.07	17.0	Cloudy	decreased flow rate to 0.25gpm @ 1512
15:30	120.5	26.31	4.83	0.017	36	6.33	17.2	clear	
15:45	124.25	26.31	4.79	0.016	11.9	6.01	17.1	clear	
16:00	128	26.32	4.77	0.016	7.2	6.45	17.0	clear	
16:15	131.75	26.28	4.69	0.016	3.6	6.02	17.0	clear	
16:30	135.5	26.52	4.80	0.015	4.6	6.48	17.0	clear	Sample collected for photography
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Groundwater Well Development Log

Fort McClellan , Alabama

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

Parcel No.: HR-201Q
Well No.: MW02
Date started: 2/21/01

Monitoring Well Information

Development Method: Surge/Purge
Development Equipment: Whale pump

Casing Diameter: 2"

Beginning Measurments
Depth to Water (ft): 38.58' (TOC)
Total depth of Well (ft): 52.30' (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.)
09:30	—	38.85	5.76	0.438	>1000	8.40	19.9	Cloudy orange	pump rate 0.25 gal/min pump 1' off bottom
09:45	3.75	41.15	5.74	0.406	>1000	8.49	19.2	Cloudy orange	
10:00	7.50	41.25	5.80	0.401	>1000	8.71	19.5	orange	
10:18	12.75	41.1	5.82	0.374	902	9.19	18.6	orange	pump stopped for 3 minutes 1015-1018 0.5 gpm
10:30	18.75	43.23	5.79	0.370	>1000	9.33	18.5	orange	
10:45	26.25	43.25	5.77	0.309	>1000	9.49	18.2	orange	0.25 gal/min @ 1045
11:00	~~42.75~~ 54.75	43.23	5.71	0.230	650	9.45	18.3	orange	

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

52.30 - 38.85 = 13.45 X 0.163 = 2.19 * 5 = 10.95 + 100 = ~~100.0~~ 110.95

Parcel No.: HR-201Q
Well ID: MW02
Date: 2/21/01

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)
11:15	58.50	42.7	5.63	0.208	59	9.03	18.3	cloudy	
11:30	62.25	42.31	5.62	0.200	9.2	9.07	18.2	clear	
11:45	66.0	42.5	5.62	0.195	589	9.34	18.4	cloudy orange	Moved pump up 3' @ 1140
12:00	69.75	42.51	5.59	0.181	14.7	8.60	18.9	clear	
12:15	75.50	42.6	5.55	0.171	4.7	8.83	18.6	clear	
12:30	77.25	42.51	5.56	0.168	4.5	8.99	18.9	clear	
12:45	81.0	42.59	5.54	0.161	1.9	8.92	18.6	clear	1257 moved pump up 2'
13:00	84.75	42.6'	5.49	0.149	373	8.82	18.7	cloudy	
13:15	88.5	42.58	5.49	0.141	90	8.94	18.5	slightly cloudy	
13:30	92.25	42.61'	5.46	0.138	7.9	9.10	18.5	clear	
13:45	96	42.62	5.46	0.136	8.9	9.34	18.4	clear	
14:00	99.75	42.53	5.47	0.132	3.3	9.04	18.5	Clear	

Parcel No.: HR-201Q
Well ID: MW02
Date: 2/21/01

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	103.5	42.34	5.45	0.128	5.7	9.20	18.2	clear	
14:30	107.25	42.17	5.42	0.123	17.2	9.34	18.4	clear	
14:45	111.0	42.12	5.45	0.120	6.4	9.48	18.1	clear	
15:00	114.75	42.13	5.44	0.118	1.9	9.44	18.3	clear	sample collected for photography
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APPENDIX D

SURVEY DATA

Appendix D

Survey Data
Former Large Caliber Weapons Range, Parcel 114Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location	Northing	Easting	Ground Elevation (ft amsl)	Top of Casing Elevation (ft amsl)
HR-114Q-GP01	1162081.12	661018.74	879.37	NA
HR-114Q-GP02	1162228.86	661262.42	920.67	NA
HR-114Q-GP03	1161736.89	661426.35	942.22	NA
HR-114Q-GP04	1162106.67	661580.59	976.07	NA
HR-114Q-GP04E	1162106.46	661590.16	978.98	NA
HR-114Q-GP04N	1162113.95	661576.52	974.21	NA
HR-114Q-GP04S	1162096.76	661583.96	975.76	NA
HR-114Q-GP04W	1162102.97	661572.62	973.44	NA
HR-114Q-MW01	1162496.61	660568.59	841.70	843.52
HR-114Q-MW02	1162448.05	660996.92	863.93	865.83
HR-114Q-MW03	1162147.83	660807.57	836.43	838.73
HR-114Q-SW/SD01	1162659.67	660955.45	NA	NA
HR-115Q-MW01	1161819.38	660363.94	803.53	805.78
HR-115Q-MW02	1161657.80	660446.95	806.54	808.78
HR-115Q-MW03	1161527.82	660361.16	816.14	818.09
HR-115Q-MW05	1161519.28	660531.57	817.63	819.86
HR-117Q-MW08	1162204.07	662083.15	995.54	997.39
HR-151Q-MW01	1161743.77	660683.79	815.21	817.33
HR-201Q-MW01	1162372.46	660515.70	841.79	843.39
HR-201Q-MW02	1162559.55	660786.52	863.16	865.33

Horizontal coordinates referenced to the U.S. State Plane Coordinate System, Alabama East Zone, North American Datum of 1983 (NAD83).

Elevations referenced to the North American Vertical Datum of 1988 (NAVD88).

ft amsl - Feet above mean sea level
NA - Not applicable.

APPENDIX E

SUMMARY OF VALIDATED ANALYTICAL DATA

Summary of Validated Surface Soil Analytical Data
Ranges West of Iron Mountain Road (Parcel 114Q)
Fort McClellan, Alabama

Report Date: 01/25/03

	Location Code:	HR-114Q-GP01			HR-114Q-GP02			HR-114Q-GP03			HR-114Q-GP04		
	Associated Site:	HR-114Q			HR-114Q			HR-114Q			HR-114Q		
	Sample No:	JJ0008			JJ0010			JJ0012			JJ0014		
	Sample Date:	11-DEC-00			11-DEC-00			11-DEC-00			01-FEB-01		
User Test Group	*Sample Depth:*	0 - 1			0 - 1			0 - 1			0 - 1		
Lab Method													
Parameter	*Units*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*
METALS													
SW6010B													
Aluminum	mg/kg	4660			6220			5500			4070		J
Antimony	mg/kg	10.9	U	UJ	11.5	U	UJ	11.4	U	UJ	11	U	UJ
Arsenic	mg/kg	2.35			2.1			1.46			1.1	J	J
Barium	mg/kg	10.2			24			33.3			16.9		
Beryllium	mg/kg	.0783	J	J	.139	J	J	.159	J	J	.109	J	J
Cadmium	mg/kg	.543	U	U	.573	U	U	.571	U	U	.552	U	U
Calcium	mg/kg	84.2	J	J	116			222			57.7	J	J
Chromium	mg/kg	7.29			12.7			3.7			3.14		
Cobalt	mg/kg	.945	J	J	1.21	J	J	.455	J	J	.488	J	J
Copper	mg/kg	8.37			18.8			4.5			6.58		
Iron	mg/kg	9020		J	8350		J	3100		J	2860		J
Lead	mg/kg	38.3			385			57.2			635		
Magnesium	mg/kg	113			153			228			147		
Manganese	mg/kg	40.5			25.1			133			23.1		
Nickel	mg/kg	1.01	J	J	1.69	J	J	2.39			1.17	J	J
Potassium	mg/kg	543	U	U	573	U	U	571	U	U	141	J	J
Selenium	mg/kg	.46	J	J	.548	J	J	.592	J	J	1.1	U	U
Silver	mg/kg	1.09	U	U	1.15	U	U	1.14	U	U	1.1	U	U
Sodium	mg/kg	109	U	U	115	U	U	114	U	U	110	U	U
Thallium	mg/kg	2.17	U	U	2.29	U	U	2.28	U	U	2.21	U	U
Vanadium	mg/kg	10.3			17.5			6.4			6.92		J
Zinc	mg/kg	21.9		J	22		J	18.7		J	15.6		J
SW7471A													
Mercury	mg/kg	.109	U	U	.115	U	U	.114	U	U	.11	U	U
NITROAROMATICS													
SW8330													
1,3,5-Trinitrobenzene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
1,3-Dinitrobenzene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
2,4,6-Trinitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
2,4-Dinitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U

Summary of Validated Surface Soil Analytical Data
Ranges West of Iron Mountain Road (Parcel 114Q)
Fort McClellan, Alabama

Report Date: 01/25/03

	Location Code:	HR-114Q-GP04E			HR-114Q-GP04N			HR-114Q-GP04S			HR-114Q-GP04W		
	Associated Site:	HR-114Q			HR-114Q			HR-114Q			HR-114Q		
	Sample No:	JJ0019			JJ0017			JJ0018			JJ0020		
	Sample Date:	17-MAY-02			17-MAY-02			17-MAY-02			17-MAY-02		
User Test Group	*Sample Depth:*	0 - 1			0 - 1			0 - 1			0 - 1		
Lab Method													
Parameter	*Units*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*
METALS													
SW6010B													
Aluminum	mg/kg												
Antimony	mg/kg												
Arsenic	mg/kg												
Barium	mg/kg												
Beryllium	mg/kg												
Cadmium	mg/kg												
Calcium	mg/kg												
Chromium	mg/kg												
Cobalt	mg/kg												
Copper	mg/kg												
Iron	mg/kg												
Lead	mg/kg	3360			2700			2810			2990		
Magnesium	mg/kg												
Manganese	mg/kg												
Nickel	mg/kg												
Potassium	mg/kg												
Selenium	mg/kg												
Silver	mg/kg												
Sodium	mg/kg												
Thallium	mg/kg												
Vanadium	mg/kg												
Zinc	mg/kg												
SW7471A													
Mercury	mg/kg												
NITROAROMATICS													
SW8330													
1,3,5-Trinitrobenzene	mg/kg												
1,3-Dinitrobenzene	mg/kg												
2,4,6-Trinitrotoluene	mg/kg												
2,4-Dinitrotoluene	mg/kg												

Summary of Validated Surface Soil Analytical Data
Ranges West of Iron Mountain Road (Parcel 114Q)
Fort McClellan, Alabama

Report Date: 01/25/03

	Location Code:	HR-114Q-MW01			HR-114Q-MW02			HR-114Q-MW03		
	Associated Site:	HR-114Q			HR-114Q			HR-114Q		
	Sample No:	JJ0001			JJ0003			JJ0005		
	Sample Date:	11-DEC-00			11-DEC-00			11-DEC-00		
User Test Group	*Sample Depth:*	0 - 1			0 - 1			0 - 1		
Lab Method *Parameter*	*Units*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*
METALS										
SW6010B										
Aluminum	mg/kg	5390			5700			9120		
Antimony	mg/kg	11.2	U	UJ	11.5	U	UJ	12.7	U	UJ
Arsenic	mg/kg	.851	J	B	1.32		B	2.59		
Barium	mg/kg	18.3			24.3			61.4		
Beryllium	mg/kg	.107	J	J	.0865	J	J	.549	J	J
Cadmium	mg/kg	.558	U	U	.576	U	U	.635	U	U
Calcium	mg/kg	65.3	J	J	203			149		
Chromium	mg/kg	5			8.28			8.2		
Cobalt	mg/kg	.771	J	J	2.3	U	U	2.79		
Copper	mg/kg	1.11	J	J	2.71			13.3		
Iron	mg/kg	3460		J	5930		J	7970		J
Lead	mg/kg	3.82			13.5			31.9		
Magnesium	mg/kg	188			109	J	J	201		
Manganese	mg/kg	16.5			47			399		
Nickel	mg/kg	2.01	J	J	1.34	J	J	2.17	J	J
Potassium	mg/kg	558	U	U	576	U	U	138	J	B
Selenium	mg/kg	1.12	U	U	1.15	U	U	1.27	U	U
Silver	mg/kg	1.12	U	U	1.15	U	U	1.27	U	U
Sodium	mg/kg	112	U	U	115	U	U	127	U	U
Thallium	mg/kg	2.23	U	U	2.3	U	U	2.54	U	U
Vanadium	mg/kg	7.3			14.8			14.6		
Zinc	mg/kg	7.48		J	9.97		J	67.1		J
SW7471A										
Mercury	mg/kg	.112	U	U	.115	U	U	.127	U	U
NITROAROMATICS										
SW8330										
1,3,5-Trinitrobenzene	mg/kg	.4	U	U	.4	U	U	.4	U	U
1,3-Dinitrobenzene	mg/kg	.4	U	U	.4	U	U	.4	U	U
2,4,6-Trinitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U
2,4-Dinitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U

Summary of Validated Surface Soil Analytical Data
Ranges West of Iron Mountain Road (Parcel 114Q)
Fort McClellan, Alabama

Report Date: 01/25/03

	Location Code:	HR-114Q-GP01			HR-114Q-GP02			HR-114Q-GP03			HR-114Q-GP04		
	Associated Site:	HR-114Q			HR-114Q			HR-114Q			HR-114Q		
	Sample No:	JJ0008			JJ0010			JJ0012			JJ0014		
	Sample Date:	11-DEC-00			11-DEC-00			11-DEC-00			01-FEB-01		
User Test Group	*Sample Depth:*	0 - 1			0 - 1			0 - 1			0 - 1		
Lab Method													
Parameter	*Units*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*
NITROAROMATICS													
SW8330													
2,6-Dinitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
2-Amino-4,6-dinitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
2-Nitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
3-Nitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
4-Amino-2,6-dinitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
HMX	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
Nitrobenzene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
RDX	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
Tetryl	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
p-Nitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
PERCHLORATE													
EPA314.0													
Perchlorate	mg/kg	.0543	U	U	.0573	U	U	.0571	U	U	.0552	U	U

Summary of Validated Surface Soil Analytical Data
Ranges West of Iron Mountain Road (Parcel 114Q)
Fort McClellan, Alabama

Report Date: 01/25/03

	Location Code:	HR-114Q-GP04E			HR-114Q-GP04N			HR-114Q-GP04S			HR-114Q-GP04W		
	Associated Site:	HR-114Q			HR-114Q			HR-114Q			HR-114Q		
	Sample No:	JJ0019			JJ0017			JJ0018			JJ0020		
	Sample Date:	17-MAY-02			17-MAY-02			17-MAY-02			17-MAY-02		
User Test Group	*Sample Depth:*	0 - 1			0 - 1			0 - 1			0 - 1		
Lab Method													
Parameter	*Units*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*
NITROAROMATICS													
SW8330													
2,6-Dinitrotoluene	mg/kg												
2-Amino-4,6-dinitrotoluene	mg/kg												
2-Nitrotoluene	mg/kg												
3-Nitrotoluene	mg/kg												
4-Amino-2,6-dinitrotoluene	mg/kg												
HMX	mg/kg												
Nitrobenzene	mg/kg												
RDX	mg/kg												
Tetryl	mg/kg												
p-Nitrotoluene	mg/kg												
PERCHLORATE													
EPA314.0													
Perchlorate	mg/kg												

Summary of Validated Surface Soil Analytical Data
Ranges West of Iron Mountain Road (Parcel 114Q)
Fort McClellan, Alabama

Report Date: 01/25/03

Location Code:		HR-114Q-MW01			HR-114Q-MW02			HR-114Q-MW03		
Associated Site:		HR-114Q			HR-114Q			HR-114Q		
Sample No:		JJ0001			JJ0003			JJ0005		
Sample Date:		11-DEC-00			11-DEC-00			11-DEC-00		
User Test Group / *Lab Method* / *Sample Depth:*		0 - 1			0 - 1			0 - 1		
Parameter	*Units*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*
NITROAROMATICS										
SW8330										
2,6-Dinitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U
2-Amino-4,6-dinitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U
2-Nitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U
3-Nitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U
4-Amino-2,6-dinitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U
HMX	mg/kg	.4	U	U	.4	U	U	.4	U	U
Nitrobenzene	mg/kg	.4	U	U	.4	U	U	.4	U	U
RDX	mg/kg	.4	U	U	.4	U	U	.4	U	U
Tetryl	mg/kg	.4	U	U	.4	U	U	.4	U	U
p-Nitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U
PERCHLORATE										
EPA314.0										
Perchlorate	mg/kg	.0558	U	U	.0576	U	U	.0635	U	U

Summary of Validated Subsurface Soil Analytical Data
Ranges West of Iron Mountain Road (Parcel 114Q)
Fort McClellan, Alabama

Report Date: 01/25/03

	Location Code:	HR-114Q-GP01			HR-114Q-GP02			HR-114Q-GP03			HR-114Q-GP04		
	Associated Site:	HR-114Q			HR-114Q			HR-114Q			HR-114Q		
	Sample No:	JJ0009			JJ0011			JJ0013			JJ0015		
	Sample Date:	11-DEC-00			11-DEC-00			11-DEC-00			01-FEB-01		
User Test Group	*Sample Depth:*	4 - 5			3 - 4			5 - 6			4 - 6		
Lab Method													
Parameter	*Units*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*
METALS													
SW6010B													
Aluminum	mg/kg	1540			6380			15200			3820		J
Antimony	mg/kg	11	U	U	11.5	U	UJ	14.5	U	UJ	10.9	U	UJ
Arsenic	mg/kg	.764	J	J	3.35			3.68			1.49		
Barium	mg/kg	1.1			12.5			36.9			12.4		
Beryllium	mg/kg	1.1	U	U	.183	J	J	.163	J	J	.0435	J	B
Cadmium	mg/kg	.548	U	U	.573	U	U	.726	U	U	.545	U	U
Calcium	mg/kg	21.7	J	J	33.4	J	J	61.5	J	J	39	J	J
Chromium	mg/kg	3.8			19			27.3			6.01		
Cobalt	mg/kg	2.19	U	U	1.26	J	J	1.13	J	J	.346	J	J
Copper	mg/kg	2.19	U	U	4.23			5.24			9.58		
Iron	mg/kg	2680		J	30000		J	23400		J	3490		J
Lead	mg/kg	1.17			7.06			7.68			166		
Magnesium	mg/kg	19.2	J	J	117			274			120		
Manganese	mg/kg	1.22			31.7			11.1			6.5		
Nickel	mg/kg	2.19	U	U	2.18	J	J	2.58	J	J	1.38	J	J
Potassium	mg/kg	548	U	U	573	U	U	260	J	B	545	U	U
Selenium	mg/kg	1.1	U	U	1.4			1.13	J	J	1.09	U	U
Silver	mg/kg	1.1	U	U	1.15	U	U	1.45	U	U	1.09	U	U
Sodium	mg/kg	110	U	U	115	U	U	145	U	U	109	U	U
Thallium	mg/kg	2.19	U	U	1.09	J	B	2.9	U	U	2.18	U	U
Vanadium	mg/kg	5.69			81.7			42			8.06		J
Zinc	mg/kg	1.24	J	J	5.92		J	7.64		J	6.1		J
SW7471A													
Mercury	mg/kg	.11	U	U	.115	U	U	.1	U	U	.109	U	U
NITROAROMATICS													
SW8330													
1,3,5-Trinitrobenzene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
1,3-Dinitrobenzene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
2,4,6-Trinitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
2,4-Dinitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U

Summary of Validated Subsurface Soil Analytical Data
Ranges West of Iron Mountain Road (Parcel 114Q)
Fort McClellan, Alabama

Report Date: 01/25/03

	Location Code:	HR-114Q-GP04			HR-114Q-MW01			HR-114Q-MW02			HR-114Q-MW03		
	Associated Site:	HR-114Q			HR-114Q			HR-114Q			HR-114Q		
	Sample No:	JJ0016			JJ0002			JJ0004			JJ0006		
	Sample Date:	01-FEB-01			11-DEC-00			11-DEC-00			11-DEC-00		
User Test Group	*Sample Depth:*	4 - 6			5 - 6			3 - 4			6 - 8		
Lab Method													
Parameter	*Units*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*
METALS													
SW6010B													
Aluminum	mg/kg	3290		J	6620			1700			5300		
Antimony	mg/kg	10.9	U	UJ	10.9	U	UJ	10.5	U	UJ	10.9	U	UJ
Arsenic	mg/kg	1.08	J	J	2.18			.371	J	B	1.41		B
Barium	mg/kg	8.76			6.42			6.79			10.7		
Beryllium	mg/kg	.0371	J	B	.0911	J	J	.0375	J	J	.0801	J	J
Cadmium	mg/kg	.545	U	U	.543	U	U	.527	U	U	.546	U	U
Calcium	mg/kg	42.7	J	J	25	J	J	47.5	J	J	44.4	J	J
Chromium	mg/kg	5.03			15.2			5.58			11.1		
Cobalt	mg/kg	2.18	U	U	2.17	U	U	2.11	U	U	2.18	U	U
Copper	mg/kg	10.2			2.67			.853	J	J	2.18	J	J
Iron	mg/kg	3050		J	16200		J	2730		J	10700		J
Lead	mg/kg	211			3.2			5.41			4.12		
Magnesium	mg/kg	96.7	J	J	87.1	J	J	33.5	J	J	114		
Manganese	mg/kg	6.15			10.4			24.3			13.8		
Nickel	mg/kg	1	J	J	1.07	J	J	5.6			1.87	J	J
Potassium	mg/kg	151	J	J	543	U	U	527	U	U	546	U	U
Selenium	mg/kg	1.09	U	U	1.09	U	U	1.05	U	U	1.09	U	U
Silver	mg/kg	1.09	U	U	1.09	U	U	1.05	U	U	1.09	U	U
Sodium	mg/kg	109	U	U	109	U	U	105	U	U	109	U	U
Thallium	mg/kg	2.18	U	U	2.17	U	U	2.11	U	U	2.18	U	U
Vanadium	mg/kg	7		J	26.7			4.42			18.3		
Zinc	mg/kg	7.26		J	4.25		J	3.36		J	6.07		J
SW7471A													
Mercury	mg/kg	.109	U	U	.109	U	U	.105	U	U	.109	U	U
NITROAROMATICS													
SW8330													
1,3,5-Trinitrobenzene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
1,3-Dinitrobenzene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
2,4,6-Trinitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
2,4-Dinitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U

Summary of Validated Subsurface Soil Analytical Data
Ranges West of Iron Mountain Road (Parcel 114Q)
Fort McClellan, Alabama

Report Date: 01/25/03

Location Code:	HR-114Q-MW03			
Associated Site:	HR-114Q			
Sample No:	JJ0007			
Sample Date:	11-DEC-00			
Sample Depth:	6 - 8			
User Test Group / Lab Method / Parameter	*Units*	*Result*	*Qual*	*VQual*
METALS				
SW6010B				
Aluminum	mg/kg	5510		
Antimony	mg/kg	10.9	U	UJ
Arsenic	mg/kg	1.59		B
Barium	mg/kg	10.4		
Beryllium	mg/kg	.0822	J	J
Cadmium	mg/kg	.545	U	U
Calcium	mg/kg	37.9	J	J
Chromium	mg/kg	10.6		
Cobalt	mg/kg	.518	J	J
Copper	mg/kg	2.09	J	J
Iron	mg/kg	10100		J
Lead	mg/kg	3.98		
Magnesium	mg/kg	132		
Manganese	mg/kg	10.7		
Nickel	mg/kg	1.43	J	J
Potassium	mg/kg	185	J	B
Selenium	mg/kg	1.09	U	U
Silver	mg/kg	1.09	U	U
Sodium	mg/kg	109	U	U
Thallium	mg/kg	.648	J	B
Vanadium	mg/kg	17.3		
Zinc	mg/kg	5.88		J
SW7471A				
Mercury	mg/kg	.109	U	U
NITROAROMATICS				
SW8330				
1,3,5-Trinitrobenzene	mg/kg	.4	U	U
1,3-Dinitrobenzene	mg/kg	.4	U	U
2,4,6-Trinitrotoluene	mg/kg	.4	U	U
2,4-Dinitrotoluene	mg/kg	.4	U	U

Summary of Validated Subsurface Soil Analytical Data
Ranges West of Iron Mountain Road (Parcel 114Q)
Fort McClellan, Alabama

Report Date: 01/25/03

	Location Code:	HR-114Q-GP01			HR-114Q-GP02			HR-114Q-GP03			HR-114Q-GP04		
	Associated Site:	HR-114Q			HR-114Q			HR-114Q			HR-114Q		
	Sample No:	JJ0009			JJ0011			JJ0013			JJ0015		
	Sample Date:	11-DEC-00			11-DEC-00			11-DEC-00			01-FEB-01		
User Test Group	*Sample Depth:*	4 - 5			3 - 4			5 - 6			4 - 6		
Lab Method *Parameter*	*Units*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*
NITROAROMATICS													
SW8330													
2,6-Dinitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
2-Amino-4,6-dinitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
2-Nitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
3-Nitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
4-Amino-2,6-dinitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
HMX	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
Nitrobenzene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
RDX	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
Tetryl	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
p-Nitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
PERCHLORATE													
EPA314.0													
Perchlorate	mg/kg	.0548	U	U	.0573	U	U	.0726	U	U	.0545	U	U

Summary of Validated Subsurface Soil Analytical Data
Ranges West of Iron Mountain Road (Parcel 114Q)
Fort McClellan, Alabama

Report Date: 01/25/03

	Location Code:	HR-114Q-GP04			HR-114Q-MW01			HR-114Q-MW02			HR-114Q-MW03		
	Associated Site:	HR-114Q			HR-114Q			HR-114Q			HR-114Q		
	Sample No:	JJ0016			JJ0002			JJ0004			JJ0006		
	Sample Date:	01-FEB-01			11-DEC-00			11-DEC-00			11-DEC-00		
User Test Group	*Sample Depth:*	4 - 6			5 - 6			3 - 4			6 - 8		
Lab Method													
Parameter	*Units*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*
NITROAROMATICS													
SW8330													
2,6-Dinitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
2-Amino-4,6-dinitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
2-Nitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
3-Nitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
4-Amino-2,6-dinitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
HMX	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
Nitrobenzene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
RDX	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
Tetryl	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
p-Nitrotoluene	mg/kg	.4	U	U	.4	U	U	.4	U	U	.4	U	U
PERCHLORATE													
EPA314.0													
Perchlorate	mg/kg	.0545	U	U	.0543	U	U	.0527	U	U	.0546	U	U

Summary of Validated Subsurface Soil Analytical Data
Ranges West of Iron Mountain Road (Parcel 114Q)
Fort McClellan, Alabama

Report Date: 01/25/03

Location Code:	HR-114Q-MW03			
Associated Site:	HR-114Q			
Sample No:	JJ0007			
Sample Date:	11-DEC-00			
Sample Depth:	6 - 8			
User Test Group / Lab Method / Parameter	*Units*	*Result*	*Qual*	*VQual*
NITROAROMATICS				
SW8330				
2,6-Dinitrotoluene	mg/kg	.4	U	U
2-Amino-4,6-dinitrotoluene	mg/kg	.4	U	U
2-Nitrotoluene	mg/kg	.4	U	U
3-Nitrotoluene	mg/kg	.4	U	U
4-Amino-2,6-dinitrotoluene	mg/kg	.4	U	U
HMX	mg/kg	.4	U	U
Nitrobenzene	mg/kg	.4	U	U
RDX	mg/kg	.4	U	U
Tetryl	mg/kg	.4	U	U
p-Nitrotoluene	mg/kg	.4	U	U
PERCHLORATE				
EPA314.0				
Perchlorate	mg/kg	.0545	U	U

Summary of Validated Groundwater Analytical Data
Ranges West of Iron Mountain Road (Parcel 114Q)
Fort McClellan, Alabama

Report Date: 01/25/03

		Location Code:	HR-114Q-MW01			HR-114Q-MW02			HR-114Q-MW03		
		Associated Site:	HR-114Q			HR-114Q			HR-114Q		
		Sample No:	JJ3001			JJ3002			JJ3003		
		Sample Date:	17-MAY-01			09-MAY-01			07-MAY-01		
User Test Group / *Lab Method* / *Parameter*	*Flt*	*Units*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*
METALS											
SW6010B											
Aluminum		mg/L	.2	U	U	.163	J	J	.256		
Antimony		mg/L	.1	U	U	.1	U	U	.1	U	U
Arsenic		mg/L	.01	U	U	.01	U	U	.01	U	U
Barium		mg/L	.0075	J	J	.02			.00957	J	J
Beryllium		mg/L	.001	U	U	.001	U	U	.001	U	U
Cadmium		mg/L	.01	U	U	.01	U	U	.01	U	U
Calcium		mg/L	.767	J	J	3.94			4.71		
Chromium		mg/L	.01	U	U	.01	U	U	.01	U	U
Cobalt		mg/L	.02	U	U	.0145	J	J	.02	U	U
Copper		mg/L	.02	U	U	.02	U	U	.02	U	U
Iron		mg/L	.0522	J	B	3.17			.0189	J	B
Lead		mg/L	.01	U	U	.01	U	U	.01	U	U
Magnesium		mg/L	.421	J	J	.242	J	J	.132	J	B
Manganese		mg/L	.0196			.0206			.00322	J	J
Nickel		mg/L	.0119	J	B	.0127	J	J	.02	U	U
Potassium		mg/L	5	U	U	2.12	J	J	5	U	U
Selenium		mg/L	.01	U	U	.01	U	U	.01	U	U
Silver		mg/L	.01	U	U	.01	U	U	.01	U	U
Sodium		mg/L	2.35			9.02			2.28		
Thallium		mg/L	.01	U	U	.01	U	U	.01	U	U
Vanadium		mg/L	.01	U	U	.01	U	U	.01	U	U
Zinc		mg/L	.02	U	U	.00583	J	J	.02	U	U
SW7470A											
Mercury		mg/L	.0005	U	U	.0005	U	U	.0005	U	U
NITROAROMATICS											
SW8330											
1,3,5-Trinitrobenzene		mg/L	.0004	U	U	.0004	U	U	.0004	U	U
1,3-Dinitrobenzene		mg/L	.0004	U	U	.0004	U	U	.0004	U	U
2,4,6-Trinitrotoluene		mg/L	.0004	U	U	.0004	U	U	.0004	U	U
2,4-Dinitrotoluene		mg/L	.0004	U	U	.0004	U	U	.0004	U	U

Summary of Validated Groundwater Analytical Data
Ranges West of Iron Mountain Road (Parcel 114Q)
Fort McClellan, Alabama

Report Date: 01/25/03

		Location Code:	HR-114Q-MW01			HR-114Q-MW02			HR-114Q-MW03		
		Associated Site:	HR-114Q			HR-114Q			HR-114Q		
		Sample No:	JJ3001			JJ3002			JJ3003		
		Sample Date:	17-MAY-01			09-MAY-01			07-MAY-01		
User Test Group / *Lab Method* / *Parameter*	*Flt*	*Units*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*
NITROAROMATICS											
SW8330											
2,6-Dinitrotoluene		mg/L	.0004	U	U	.0004	U	U	.0004	U	U
2-Amino-4,6-dinitrotoluene		mg/L	.0004	U	U	.0004	U	U	.0004	U	U
2-Nitrotoluene		mg/L	.0004	U	U	.0004	U	U	.0004	U	U
3-Nitrotoluene		mg/L	.0004	U	U	.0004	U	U	.0004	U	U
4-Amino-2,6-dinitrotoluene		mg/L	.0004	U	U	.0004	U	U	.0004	U	U
HMX		mg/L	.001	U	U	.001	U	U	.001	U	U
Nitrobenzene		mg/L	.0004	U	U	.0004	U	U	.0004	U	U
RDX		mg/L	.0004	U	U	.0004	U	U	.0004	U	U
Tetryl		mg/L	.0004	U	U	.0004	U	U	.0004	U	U
p-Nitrotoluene		mg/L	.0004	U	U	.0004	U	U	.0004	U	U
PERCHLORATE											
E314.0											
Perchlorate		mg/L	.005	U	U	.005	U	U	.005	U	U
VOLATILES											
SW8260B											
1,1,1,2-Tetrachloroethane		mg/L	.005	U	U	.005	U	U	.005	U	U
1,1,1-Trichloroethane		mg/L	.005	U	U	.005	U	U	.005	U	U
1,1,2,2-Tetrachloroethane		mg/L	.005	U	U	.005	U	U	.005	U	U
1,1,2-Trichloroethane		mg/L	.005	U	U	.005	U	U	.005	U	U
1,1-Dichloroethane		mg/L	.005	U	U	.005	U	U	.005	U	U
1,1-Dichloroethene		mg/L	.005	U	U	.005	U	U	.005	U	U
1,1-Dichloropropene		mg/L	.005	U	U	.005	U	U	.005	U	U
1,2,3-Trichlorobenzene		mg/L	.005	U	U	.005	U	U	.005	U	U
1,2,3-Trichloropropane		mg/L	.005	U	U	.005	U	U	.005	U	U
1,2,4-Trichlorobenzene		mg/L	.005	U	U	.005	U	U	.005	U	U
1,2,4-Trimethylbenzene		mg/L	.005	U	U	.005	U	U	.005	U	U
1,2-Dibromo-3-Chloropropane		mg/L	.01	U	U	.01	U	U	.01	U	U
1,2-Dibromoethane		mg/L	.005	U	U	.005	U	U	.005	U	U
1,2-Dichlorobenzene		mg/L	.005	U	U	.005	U	U	.005	U	U
1,2-Dichloroethane		mg/L	.005	U	U	.005	U	U	.005	U	U

Summary of Validated Groundwater Analytical Data
Ranges West of Iron Mountain Road (Parcel 114Q)
Fort McClellan, Alabama

Report Date: 01/25/03

		Location Code:	HR-114Q-MW01			HR-114Q-MW02			HR-114Q-MW03		
		Associated Site:	HR-114Q			HR-114Q			HR-114Q		
		Sample No:	JJ3001			JJ3002			JJ3003		
		Sample Date:	17-MAY-01			09-MAY-01			07-MAY-01		
User Test Group											
Lab Method											
Parameter	*Flt*	*Units*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*
VOLATILES											
SW8260B											
1,2-Dichloropropane		mg/L	.005	U	U	.005	U	U	.005	U	U
1,2-Dimethylbenzene		mg/L	.005	U	U	.005	U	U	.005	U	U
1,3,5-Trimethylbenzene		mg/L	.005	U	U	.005	U	U	.005	U	U
1,3-Dichlorobenzene		mg/L	.005	U	U	.005	U	U	.005	U	U
1,3-Dichloropropane		mg/L	.005	U	U	.005	U	U	.005	U	U
1,4-Dichlorobenzene		mg/L	.005	U	U	.005	U	U	.005	U	U
2-Butanone		mg/L	.02	U	U	.02	U	U	.02	U	U
2-Hexanone		mg/L	.02	U	U	.02	U	U	.02	U	U
4-Methyl-2-pentanone		mg/L	.01	U	U	.01	U	U	.01	U	U
Acetone		mg/L	.02	U	U	1.3			1.2		
Benzene		mg/L	.005	U	U	.005	U	U	.005	U	U
Bromobenzene		mg/L	.005	U	U	.005	U	U	.005	U	U
Bromochloromethane		mg/L	.005	U	U	.005	U	U	.005	U	U
Bromodichloromethane		mg/L	.005	U	U	.005	U	U	.005	U	U
Bromoform		mg/L	.005	U	U	.005	U	U	.005	U	U
Bromomethane		mg/L	.005	U	U	.005	U	UJ	.005	U	UJ
Carbon disulfide		mg/L	.005	U	U	.005	U	U	.005	U	U
Carbon tetrachloride		mg/L	.005	U	U	.005	U	U	.005	U	U
Chlorobenzene		mg/L	.005	U	U	.005	U	U	.005	U	U
Chloroethane		mg/L	.005	U	U	.005	U	U	.005	U	UJ
Chloroform		mg/L	.005	U	U	.00067	J	B	.005	U	U
Chloromethane		mg/L	.005	U	U	.005	U	U	.005	U	U
Cis-1,2-Dichloroethene		mg/L	.005	U	U	.005	U	U	.005	U	U
Cis-1,3-Dichloropropene		mg/L	.005	U	U	.005	U	U	.005	U	U
Cumene		mg/L	.005	U	U	.005	U	U	.005	U	U
Dibromochloromethane		mg/L	.005	U	U	.005	U	U	.005	U	U
Dibromomethane		mg/L	.005	U	U	.005	U	U	.005	U	U
Dichlorodifluoromethane		mg/L	.005	U	U	.005	U	U	.005	U	U
Ethylbenzene		mg/L	.005	U	U	.005	U	U	.005	U	U
Hexachlorobutadiene		mg/L	.005	U	U	.005	U	U	.005	U	U
Methylene chloride		mg/L	.005	U	U	.005	U	U	.005	U	U

Summary of Validated Groundwater Analytical Data
Ranges West of Iron Mountain Road (Parcel 114Q)
Fort McClellan, Alabama

Report Date: 01/25/03

		Location Code:	HR-114Q-MW01			HR-114Q-MW02			HR-114Q-MW03		
		Associated Site:	HR-114Q			HR-114Q			HR-114Q		
		Sample No:	JJ3001			JJ3002			JJ3003		
		Sample Date:	17-MAY-01			09-MAY-01			07-MAY-01		
User Test Group / *Lab Method* / *Parameter*	*Flt*	*Units*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*	*Result*	*Qual*	*VQual*
VOLATILES											
SW8260B											
N-Butylbenzene		mg/L	.005	U	U	.005	U	U	.005	U	U
N-Propylbenzene		mg/L	.005	U	U	.005	U	U	.005	U	U
Naphthalene		mg/L	.005	U	U	.005	U	U	.005	U	U
Styrene		mg/L	.005	U	U	.005	U	U	.005	U	U
Tetrachloroethene		mg/L	.005	U	U	.005	U	U	.005	U	U
Toluene		mg/L	.005	U	U	.005	U	U	.005	U	U
Trans-1,2-Dichloroethene		mg/L	.005	U	U	.005	U	U	.005	U	U
Trans-1,3-Dichloropropene		mg/L	.005	U	U	.005	U	U	.005	U	U
Trichloroethene		mg/L	.005	U	U	.005	U	U	.005	U	U
Trichlorofluoromethane		mg/L	.005	U	U	.005	U	U	.005	U	U
Vinyl chloride		mg/L	.005	U	U	.005	U	U	.005	U	U
m,p-Xylenes		mg/L	.01	U	U	.01	U	U	.01	U	U
o-Chlorotoluene		mg/L	.005	U	U	.005	U	U	.005	U	U
p-Chlorotoluene		mg/L	.005	U	U	.005	U	U	.005	U	U
p-Cymene		mg/L	.005	U	U	.005	U	U	.005	U	U
sec-Butylbenzene		mg/L	.005	U	U	.005	U	U	.005	U	U
sec-Dichloropropane		mg/L	.005	U	U	.005	U	U	.005	U	U
tert-Butylbenzene		mg/L	.005	U	U	.005	U	U	.005	U	U

Summary of Validated Surface Water Analytical Data
Ranges West of Iron Mountain Road (Parcel 114Q)
Fort McClellan, Alabama

Report Date: 01/25/03

Location Code:	HR-114Q-SW/SD01
Associated Site:	HR-114Q
Sample No:	JJ2001
Sample Date:	28-FEB-01

User Test Group / *Lab Method* / *Parameter*	*Flt*	*Units*	*Result*	*Qual*	*VQual*
METALS					
SW6010B					
Aluminum		mg/L	2.63		
Antimony		mg/L	.1	U	U
Arsenic		mg/L	.01	U	U
Barium		mg/L	.022		
Beryllium		mg/L	.001	U	U
Cadmium		mg/L	.01	U	U
Calcium		mg/L	1.34		
Chromium		mg/L	.01	U	U
Cobalt		mg/L	.02	U	U
Copper		mg/L	.02	U	U
Iron		mg/L	1.5		
Lead		mg/L	.0031	J	B
Magnesium		mg/L	.398	J	J
Manganese		mg/L	.0876		
Nickel		mg/L	.02	U	U
Potassium		mg/L	5	U	U
Selenium		mg/L	.01	U	U
Silver		mg/L	.01	U	U
Sodium		mg/L	1	U	U
Thallium		mg/L	.01	U	U
Vanadium		mg/L	.00407	J	J
Zinc		mg/L	.0381		
SW7470A					
Mercury		mg/L	.00437		
NITROAROMATICS					
SW8330					
1,3,5-Trinitrobenzene		mg/L	.0004	U	U
1,3-Dinitrobenzene		mg/L	.0004	U	U
2,4,6-Trinitrotoluene		mg/L	.0004	U	U
2,4-Dinitrotoluene		mg/L	.0004	U	U

Summary of Validated Surface Water Analytical Data
Ranges West of Iron Mountain Road (Parcel 114Q)
Fort McClellan, Alabama

Report Date: 01/25/03

	Location Code:	HR-114Q-SW/SD01			
	Associated Site:	HR-114Q			
	Sample No:	JJ2001			
	Sample Date:	28-FEB-01			
User Test Group					
Lab Method					
Parameter	*Flt*	*Units*	*Result*	*Qual*	*VQual*
NITROAROMATICS					
SW8330					
2,6-Dinitrotoluene		mg/L	.0004	U	U
2-Amino-4,6-dinitrotoluene		mg/L	.0004	U	U
2-Nitrotoluene		mg/L	.0004	U	U
3-Nitrotoluene		mg/L	.0004	U	U
4-Amino-2,6-dinitrotoluene		mg/L	.0004	U	U
HMX		mg/L	.001	U	U
Nitrobenzene		mg/L	.0004	U	U
RDX		mg/L	.0004	U	U
Tetryl		mg/L	.0004	U	U
p-Nitrotoluene		mg/L	.0004	U	U
PERCHLORATE					
E314.0					
Perchlorate		mg/L	.005	U	U

Summary of Validated Sediment Analytical Data
Ranges West of Iron Mountain Road (Parcel 114Q)
Fort McClellan, Alabama

Report Date: 01/25/03

Location Code:	HR-114Q-SW/SD01			
Associated Site:	HR-114Q			
Sample No:	JJ1001			
Sample Date:	28-FEB-01			
Sample Depth:	0 - .5			
User Test Group / Lab Method / Parameter	*Units*	*Result*	*Qual*	*VQual*
METALS				
SW6010B				
Aluminum	mg/kg	11200		
Antimony	mg/kg	15.4	U	U
Arsenic	mg/kg	2.38		
Barium	mg/kg	15.8		
Beryllium	mg/kg	.173	J	J
Cadmium	mg/kg	.772	U	U
Calcium	mg/kg	157		
Chromium	mg/kg	21.9		
Cobalt	mg/kg	.868	J	J
Copper	mg/kg	5.55		
Iron	mg/kg	17000		
Lead	mg/kg	6.65		
Magnesium	mg/kg	206		
Manganese	mg/kg	18.1		
Nickel	mg/kg	2.33	J	J
Potassium	mg/kg	772	U	U
Selenium	mg/kg	1.54	U	U
Silver	mg/kg	1.54	U	U
Sodium	mg/kg	38.3	J	J
Thallium	mg/kg	3.09	U	U
Vanadium	mg/kg	37.4		
Zinc	mg/kg	16.9		
SW7471A				
Mercury	mg/kg	.040	J	J
NITROAROMATICS				
SW8330				
1,3,5-Trinitrobenzene	mg/kg	.4	U	U
1,3-Dinitrobenzene	mg/kg	.4	U	U
2,4,6-Trinitrotoluene	mg/kg	.4	U	U
2,4-Dinitrotoluene	mg/kg	.4	U	U

Summary of Validated Sediment Analytical Data
Ranges West of Iron Mountain Road (Parcel 114Q)
Fort McClellan, Alabama

Report Date: 01/25/03

Location Code:	HR-114Q-SW/SD01			
Associated Site:	HR-114Q			
Sample No:	JJ1001			
Sample Date:	28-FEB-01			
Sample Depth:	0 - .5			
User Test Group / Lab Method / Parameter	*Units*	*Result*	*Qual*	*VQual*
NITROAROMATICS				
SW8330				
2,6-Dinitrotoluene	mg/kg	.4	U	U
2-Amino-4,6-dinitrotoluene	mg/kg	.4	U	U
2-Nitrotoluene	mg/kg	.4	U	U
3-Nitrotoluene	mg/kg	.4	U	U
4-Amino-2,6-dinitrotoluene	mg/kg	.4	U	U
HMX	mg/kg	.4	U	U
Nitrobenzene	mg/kg	.4	U	U
RDX	mg/kg	.4	U	U
Tetryl	mg/kg	.4	U	U
p-Nitrotoluene	mg/kg	.4	U	U
PERCHLORATE				
E314.0				
Perchlorate	mg/kg	.0772	U	U
TOC				
SW9060				
Total Organic Carbon	mg/kg	110		

APPENDIX F

DATA VALIDATION SUMMARY REPORT

Quality Assurance Report
For Ranges West of Iron Mountain Road
Parcel HR-114Q
IT Project No 796887
Fort McClellan Quality Assurance Report

1.0 Overview

Sixteen soil samples, 1 sediment sample, 1 surface water sample and 3 groundwater samples were collected in support of the investigation at Fort McClellan (FTMC) Parcel HR-114Q, Ranges West of Iron Mountain Road. All samples were submitted to EMAX Laboratories, Inc. for analysis. Soil, sediment, and surface water samples were analyzed for target analyte list (TAL) metals, nitroaromatic-nitramine explosives, and perchlorate. Groundwater samples were analyzed for (TAL) metals, nitroaromatic-nitramine explosives, perchlorate, and target compound list (TCL) volatiles. QC samples consisted of the following types and quantities: 2 field duplicates, 2 MS/MSD, 3 trip blanks, and 6 equipment rinsates. An analytical summary table cross-referencing sample location, sample number, and contaminants of concern is presented in Attachment A.

One hundred (100) percent of samples were validated and reviewed in accordance with the *USEPA Contract Laboratory Program National Functional Guidelines for Evaluating Inorganic Data Review (EPA, February 1994)* and *USEPA Contract Laboratory Program National Functional Guidelines for Organic Review (EPA, October 1999)* for all areas except blanks. Region III *Laboratory Data Validation Functional Guidelines for Inorganic Analyses (EPA, April 1993)* and Region III *National Functional Guidelines for Organic Data Review (EPA, June 1992)* were applied to the areas associated with blank contamination. Data qualifiers assigned to results were based on guidance outlined in the referenced documents and the *Installation-Wide Sampling and Analysis Plan (IT, March 2000)* for FTMC. Table 1.0-1 and Table 1.0-2 define laboratory data and validation data qualifiers assigned to analytical results, respectively.

Table 1.0-1
Laboratory Data Qualifier Definitions

Data Qualifier	Laboratory Data Qualifier Definition
B	Analyte detected in method blank at concentration greater than the reporting limit (and greater than zero).
C	Confirming data obtained using second GC column or GC/MS.
E	Analyte concentration exceeded calibration range.
I	Analyte identification suspect. See narrative for explanation.
J	Result is less than or equal to specified reporting limit but greater than the method detection limit (MDL).
P	Analyte not confirmed. Results from primary and secondary GC columns differ by greater than 10 percent
S	Analyte concentration obtained using Method of Standard Additions (MSA).
U	Not detected. The value represented indicates the reporting limit for the analysis.
D	Sample analyzed as a dilution. The result reported has been calculated using the appropriate dilution factor.
No Code	Confirmed identification.

Table 1.0-2
Validation Data Qualifier Definitions

Validation Qualifier	Validation Data Qualifier Definition
U	Not detected. The associated number indicates approximate sample concentration necessary to be detected.
No Code	Confirmed identification
B	Not detected substantially above the level reported in laboratory or field blanks.
R	Unusable result. Analyte may or may not be present in the sample.
N	Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.
J	Analyte present. Reported value may not be accurate or precise. Considered an estimate.
NJ	Qualitative identification questionable due to poor resolution. Presumptively present at approximate quantity.

The Data Validation Summary Report is presented in Attachment B.

2.0 Summary

Data were evaluated to verify compliance with precision, accuracy, representativeness, comparability, completeness, and sensitivity. To verify that project data quality objectives (DQO) were met, laboratory analytical results and data packages were examined for compliance with SW846 SW6010B/SW7000 Series, SW8330, SW8260B and U.S. Environmental Protection Agency (EPA) 314.0 quality control (QC) method criteria. Laboratory nonconformances and discrepancies in the data were also examined to determine their impact on the data. The results of this review are presented in the following sections.

2.1 Sample Receipt and Analytical Holding Times

All sample results generated by the laboratory during this investigation have been reviewed with respect to condition of samples as received by the laboratory, chain-of-custody, and analysis holding times. All coolers were received by EMAX in good condition under proper chain-of-custody.

All extraction and analytical holding times were met.

2.2 Rejected Data

No data were rejected ("R" flagged) due to laboratory anomalies or data validation findings.

2.3 Blank Results

A description of the types of blank samples which were collected, processed, and evaluated for background and/or process contamination during this sampling is as follows:

- Trip blanks (TBs) consist of a VOC sample vial filled in the laboratory with ASTM Type II reagent grade water, transported to the sampling site, handled like an environmental sample and returned to the laboratory for analysis. Trip blanks are prepared only when VOC samples are collected and analyzed. Trip blanks are used to assess the potential introduction of contaminants from sample containers during the transportation and/or storage procedures. Trip blanks were sent with all aqueous samples shipped to the laboratory requiring volatile analysis.

- Equipment rinsates (ER) are samples of analyte-free deionized water poured into, or over, or pumped through the sampling device, collected in a sample container, and transported to the laboratory for analysis. Equipment rinsates are used to assess the effectiveness of equipment decontamination procedures.

- Method blanks (MB) are used in the laboratory to assess and document any possible contamination resulting from the analytical process. A method blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank shall be carried through the complete sample preparation and analytical procedure.

- Initial and continuing calibration blanks (ICB and CCB) are an analyte-free matrix which is analyzed to verify the analysis system is free of contamination. ICBs and CCBs are analyzed immediately after the initial and continuing calibration is performed.

Field sample concentrations were evaluated to determine if the sample results could have been biased by the presence of any contamination measured in equipment rinsate blanks, method blanks and/or initial/continuing calibration blanks. Sample data affected by blank contamination are summarized in Table 2.3-1.

2.1 Sample Receipt and Analytical Holding Times

All sample results generated by the laboratory during this investigation have been reviewed with respect to condition of samples as received by the laboratory, chain-of-custody, and analysis holding times. All coolers were received by EMAX in good condition under proper chain-of-custody.

All extraction and analytical holding times were met.

2.2 Rejected Data

No data were rejected ("R" flagged) due to laboratory anomalies or data validation findings.

2.3 Blank Results

A description of the types of blank samples which were collected, processed, and evaluated for background and/or process contamination during this sampling is as follows:

- Trip blanks (TBs) consist of a VOC sample vial filled in the laboratory with ASTM Type II reagent grade water, transported to the sampling site, handled like an environmental sample and returned to the laboratory for analysis. Trip blanks are prepared only when VOC samples are collected and analyzed. Trip blanks are used to assess the potential introduction of contaminants from sample containers during the transportation and/or storage procedures. Trip blanks were sent with all aqueous samples shipped to the laboratory requiring volatile analysis.

- Equipment rinsates (ER) are samples of analyte-free deionized water poured into, or over, or pumped through the sampling device, collected in a sample container, and transported to the laboratory for analysis. Equipment rinsates are used to assess the effectiveness of equipment decontamination procedures.

- Method blanks (MB) are used in the laboratory to assess and document any possible contamination resulting from the analytical process. A method blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank shall be carried through the complete sample preparation and analytical procedure.

- Initial and continuing calibration blanks (ICB and CCB) are an analyte-free matrix which is analyzed to verify the analysis system is free of contamination. ICBs and CCBs are analyzed immediately after the initial and continuing calibration is performed.

Field sample concentrations were evaluated to determine if the sample results could have been biased by the presence of any contamination measured in trip blanks, equipment rinsate blanks, method blanks and/or initial/continuing calibration blanks. Sample data affected by blank contamination are summarized in Table 2.3-1.

Table 2.3-1
Summary of Blank Contamination

Sample Delivery Group	Sample Number	Contaminant	Action
10114Q-01	JJ0001, JJ0004, JJ0006 & JJ0007	Arsenic	Arsenic results for samples JJ0001, JJ0004, JJ0006 & JJ0007 were "B" qualified.
	JJ0005, JJ0007 & JJ0013	Potassium	Potassium results for samples JJ0005, JJ0007 & JJ0013 were "B" qualified.
	JJ0007 & JJ0011	Thallium	Thallium results for samples JJ0007 & JJ0011 were "B" qualified.
10114Q-02	JJ0015 & JJ0016	Beryllium	Beryllium results for samples JJ0015 & JJ0016 were "B" qualified.
10114Q-04	JJ2001	Lead	Lead result for sample JJ2001 was "B" qualified.
10114Q-05	JJ3003	Iron Magnesium	Iron and magnesium results for sample JJ3003 were "B" qualified.
10114Q-06	JJ3002	Chloroform	Chloroform result for sample JJ3002 was "B" qualified.
10114Q-07	JJ3001	Nickel	Nickel result for sample JJ3001 was "B" qualified.

2.4 Analytical Precision

Precision is defined as a measurement of mutual agreement among individual measurements of the same property, usually under "prescribed similar conditions." Analytical precision is calculated as relative percent difference (%RPD) based on the following formula:

$$\%RPD = \left| \frac{(A-B)}{(A+B)/2} \right| \times 100$$

where:

%RPD = Relative Percent Difference
A = original result
B = duplicate result

A high RPD between an original sample and its field duplicate may be attributable to the difference in sample matrix or distribution of the contaminant within the sample, rather than the precision of the collection process. Also, when "estimated" results are reported, there is a potential for increased variability between the primary and duplicate sample results. This occurs because, at low concentrations, the relative difference in results is magnified by the RPD

calculation even though the results are comparable in absolute terms. There is also increased uncertainty in the results as the lower limit of detection is approached, due to decreasing analytical accuracy. The RPD calculation cannot be performed in cases where non-detected results are reported with corresponding samples that contain detectable concentrations.

Overall sampling and analysis precision for this task was assessed using field duplicate (FD) samples. Laboratory precision was assessed by laboratory control sample/laboratory control sample duplicate (LCS/LCSD) and matrix spike/matrix spike duplicate (MS/MSD) recoveries. Results indicate that an acceptable analytical precision was achieved. Table 2.4-1 lists precision acceptance criteria for LCS/LCSD, MS/MSD organic and inorganic analyses and field duplicate comparisons.

Table 2.4-1
Precision Acceptance Criteria

Field/Laboratory QC Type	Matrix	
	Aqueous	Soil
Field Duplicate (Both Organic & Inorganic)	RPD < 35%	RPD < 50%
Perchlorate LCS/LCSD and MS/MSD	RPD < 10%	RPD < 20%
Nitroaromatic and Nitramine Explosives LCS/LCSD and MS/MSD	Refer to Table 8-1of FTMC "Installation Wide Sample and Analysis Plan"	Refer to Table 8-1of FTMC "Installation Wide Sample and Analysis Plan"
Metals LCS/LCSD and MS/MSD	RPD < 20%	RPD < 20%

2.5 Analytical Accuracy Assessment

Accuracy is a measure of the degree of agreement of a result against an accepted reference or true value. Accuracy is expressed as a percent recovery (%R) calculated by the ratio of the measurement and accepted true value as shown in the following equation:

$$\%R = (|X_s - X_u|/K) \times 100$$

where:

X_s = measured value of the spiked sample
X_u = measured value of the unspiked sample
K = known amount of the spike in the sample

Surrogate recoveries, MS/MSD and LCS/LCSD, were used to measure analytical accuracy as described in SW846 SW6010B/SW7000 Series methodology, nitroaromatic-nitramine

explosives by SW8330, perchlorate by EPA 314.0, and TCL volatiles by SW8260B. Reported results indicate that an acceptable level of analytical accuracy was achieved. Surrogate, LCS/LCSD and MS/MSD spike recoveries which exceed QA criteria are summarized in Table 2.5-1.

Table 2.5-1
Summary of LCS/LCSD and MS/MSD Spike Recovery Criteria Exceedances

Sample Delivery Group	Sample Number	Contaminant	Action
10114Q-01	JJ0001, JJ0002, JJ0003, JJ0004, JJ0005, JJ0006, JJ0007, JJ0008, JJ0009, JJ0010, JJ0011, JJ0012 & JJ0013	Antimony (LB) and iron (LB).	Antimony and iron results were "J" qualified due to MS/MSD spike recoveries exceeding QC criteria.
10114Q-02	JJ0014, JJ0015 & JJ0016	Aluminum (HB), antimony (LB) and iron (LB).	Aluminum, antimony and iron results were "J " qualified due to MS/MSD spike recoveries exceeding QC criteria.

LB - low bias.
HB - high bias.

2.6 Data Representativeness

Representativeness is a qualitative parameter that expresses the degree to which sample data actually represent the matrix conditions. Sample locations selected for this investigation outline contaminant releases into the environment, that may have occurred and will confirm whether contaminated soil exists at this site. Soil sample data are being used to assess potential impacts to terrestrial biota that might use the site for food and/or habitat purposes. Monitoring well locations where chosen to establish groundwater flow direction and site-specific geology, and provide information on groundwater quality in the residuum aquifier.

Standardized requirements and procedures for sample collection and handling were employed to maximize sample representativeness.

2.7 Data Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. By employing well-recognized techniques and accepted standardized methods for sampling and analysis, data comparability was achieved during this sampling event.

2.8 Data Completeness

Completeness is calculated for the aggregation of data for each analyte measured during the investigation of Parcel HR-114Q Ranges West of Iron Mountain Road. The formula for calculating completeness is listed below:

$$\% \text{ Completeness} = (X_V / X_T) \times 100$$

where:

X_V = number of valid (i.e., non-"R"-flagged) results
X_T = number of possible results

Parcel HR-114Q requirement for completeness is 95% for both aqueous and soil samples. The % Completeness for this task is calculated to be 100%

- % Completeness = (992 / 992) x 100 = 100%.

2.9 Sensitivity

Sensitivity is defined as the ability of the laboratory's established method detection limits (MDL)/method reporting limits (MRL or RL) to meet project-specific DQOs or site-specific screening levels (SSSL) and or ecological screening values (ESV).

MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero. MDLs are determined from an analysis of a sample in a given matrix containing the target analyte of interest. The MRL is a threshold value based upon the sensitivity capability of method and instrument. MRLs are normally set at a minimum of two times the MDL. MRLs are adjusted based on the sample matrix, moisture (solids only), and any necessary sample dilutions. The laboratory cannot reliably quantitate values reported above the MDL but below the MRL. Therefore, these analyte values must be flagged as estimated quantities ("J"-flagged).

To evaluate method sensitivity, a general comparison of the laboratory's MDLs/MRLs and the site investigation screening levels (background values, human health SSSL for residential reuse, and [ESV]) was performed and presented to the FTMC Base Realignment and Closure Team (BCT) (November 1999). The comparison summarized the relationship between the MDL/MRLs and SSSL/ESVs for each parameter typically reported for all of the major analytical methods used at FTMC. The few cases identified where the MDL and/or MRL values exceeded their corresponding human health SSSL and/or ESV were specifically highlighted and explained. It was understood that for these cases, the standard analytical method of analysis was not going to provide MDLs/MRLs which met human health SSSLs or ESVs without significant uncertainty and

the possibility of reporting false negatives. It was generally accepted that standard EPA SW846 analytical methods would provide sufficient sensitivity for data reported and used in the site screening process at FTMC.

3.0 Data Usability

Data quality indicators (DQI) provide an internal guide for control and review to verify that data are scientifically sound, defensible, and of known and acceptable quality. Factors such as precision, accuracy, representativeness, comparability, completeness, and sensitivity were evaluated to determine if the project's DQOs were met. A review of the data revealed that the majority of QA/QC indicators were within acceptable control limits. Any data anomalies encountered during data validation and overall site evaluations have been summarized in the previous sections of this document.

Based on the results of data validation and QA review, IT has concluded that representative samples were collected and analyzed and that the results are indicative of the media analyzed. The data are to be considered representative of site conditions and are usable for their intended purpose.

4.0 Attachments

Attachment A - Analytical Summary Table
Attachment B - Data Validation Summary Report

ATTACHMENT A

ANALYTICAL SUMMARY TABLE

Ft. McClellan
Parcel HR-114Q
Ranges West of Iron Mountain Road
Analytical Summary
Project No. 796887

HR-114Q Soil Sampling

Sample Location	Sample Name	Sample Number	Date Sampled	Analytical Suite
HR-114Q-MW01	HR-114Q-MW01-SS-JJ0001-REG	JJ0001	11-Dec-00	TAL Metals by SW6010B/SW7471, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.
	HR-114Q-MW01-DS-JJ0002-REG	JJ0002	11-Dec-00	TAL Metals by SW6010B/SW7471, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.
HR-114Q-MW02	HR-114Q-MW02-SS-JJ0003-REG	JJ0003	11-Dec-00	TAL Metals by SW6010B/SW7471, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.
	HR-114Q-MW02-DS-JJ0004-REG	JJ0004	11-Dec-00	TAL Metals by SW6010B/SW7471, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.
HR-114Q-MW03	HR-114Q-MW03-SS-JJ0005-REG	JJ0005	11-Dec-00	TAL Metals by SW6010B/SW7471, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.
	HR-114Q-MW03-DS-JJ0006-REG	JJ0006	11-Dec-00	TAL Metals by SW6010B/SW7471, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.
	HR-114Q-MW03-DS-JJ0007-FD	JJ0007	11-Dec-00	TAL,Metals by SW6010B/SW7471, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.
HR-114Q-GP01	HR-114Q-GP01-SS-JJ0008-REG	JJ0008	11-Dec-00	TAL Metals by SW6010B/SW7471, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.
	HR-114Q-GP01-DS-JJ0009-REG	JJ0009	11-Dec-00	TAL Metals by SW6010B/SW7471, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.
HR-114Q-GP02	HR-114Q-GP02-SS-JJ0010-REG	JJ0010	11-Dec-00	TAL Metals by SW6010B/SW7471, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.
	HR-114Q-GP02-DS-JJ0011-REG	JJ0011	11-Dec-00	TAL Metals by SW6010B/SW7471, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.
HR-114Q-GP03	HR-114Q-GP03-SS-JJ0012-REG	JJ0012	11-Dec-00	TAL Metals by SW6010B/SW7471, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.
	HR-114Q-GP03-SS-JJ0012-MS	JJ0012-MS	11-Dec-00	TAL Metals by SW6010B/SW7471, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.
	HR-114Q-GP03-SS-JJ0012-MSD	JJ0012-MSD	11-Dec-00	TAL Metals by SW6010B/SW7471, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.
	HR-114Q-GP03-DS-JJ0013-REG	JJ0013	11-Dec-00	TAL Metals by SW6010B/SW7471, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.
HR-114Q-GP04	HR-114Q-GP04-SS-JJ0014-REG	JJ0014	01-Feb-01	TAL Metals by SW6010B/SW7471, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.
	HR-114Q-GP04-SS-JJ0014-MS	JJ0014-MS	01-Feb-01	TAL Metals by SW6010B/SW7471, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.
	HR-114Q-GP04-SS-JJ0014-MSD	JJ0014-MSD	01-Feb-01	TAL Metals by SW6010B/SW7471, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.
	HR-114Q-GP04-DS-JJ0015-REG	JJ0015	01-Feb-01	TAL Metals by SW6010B/SW7471, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.
	HR-114Q-GP04-DS-JJ0016-FD	JJ0016	01-Feb-01	TAL Metals by SW6010B/SW7471, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.

HR-114Q Groundwater Sampling

Sample Location	Sample Name	Sample Number	Date Sampled	Analytical Suite
HR-114Q-MW01	HR-114Q-MW01-GW-JJ3001-REG	JJ3001	17-May-01	TAL Metals by SW6010B/SW7471, Volatiles by SW8260B, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.
HR-114Q-MW02	HR-114Q-MW02-GW-JJ3002-REG	JJ3002	09-May-01	TAL Metals by SW6010B/SW7471, Volatiles by SW8260B, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.
HR-114Q-MW03	HR-114Q-MW03-GW-JJ3003-REG	JJ3003	07-May-01	TAL Metals by SW6010B/SW7471, Volatiles by SW8260B, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.

HR-114Q Sediment-Surface Water Sampling

Sample Location	Sample Name	Sample Number	Date Sampled	Analytical Suite
HR-114Q-SW/SD01	HR-114Q-SW/SD01-SD-JJ1001-REG	JJ1001	28-Feb-01	TAL Metals by SW6010B/SW7471, Nitroaromatic-Nitramine Explosives by SW8330, Perchlorate by EPA 314.0, TOC by SW9060 and Grain size by ASTM 421/422.
	HR-114Q-SW/SD01-SW-JJ2001-REG	JJ2001	28-Feb-01	TAL Metals by SW6010B/SW7471, Nitroaromatic-Nitramine Explosives by SW8330 & Perchlorate by EPA 314.0.

ATTACHMENT B

DATA VALIDATION SUMMARY REPORT

Data Validation Summary Report
for the Site Investigation Performed at the
Ranges West of Iron Mountain Road (Parcel HR-114Q)
Fort McCellan

1.0 Introduction

Level III data validation was performed on 100% of the environmental samples collected at Ranges West of Iron Mountain Road (Parcel HR-114Q). The analytical data consisted of seven sample delivery groups (SDG) 10114Q-01 thru -07, which were analyzed by EMAX Laboratories. Soil and water matrix were validated. The chemical parameters for which the samples were analyzed, are identified below:

Parameter (Method)
Volatile Organics by GC/MS SW846 8260B
Metals by SW846 6010B and 7471A/7470A
Nitroaromatic and Nitramine Explosives by SW846 8330
Perchlorate by EPA 314.0

2.0 Procedures

The sample data were validated following the logic identified in the *USEPA Contract Laboratory Program (CLP) National Functional Guidelines For Inorganic Data Review (February 1994)* and *USEPA Contract Laboratory Program National Functional Guidelines For Organic Review (October 1999)* for all areas except Blanks. *Region III Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses (April 1993)* and *Region III National Functional Guidelines for Organic Data Review (June 1992)* were applied to the areas associated with blank contamination. Specific quality control (QC) criteria, as identified in the Quality Assurance Plan (QAP), analytical methods, and laboratory Standard Operating Procedures (SOP's) were applied to all sample results. As the result of the use of Update III SW846 test methods for the analytical data and the application of the CLP guidelines during the validation process, there were instances where specific QC requirements for all target compounds were not defined. This primarily occurred in the organic, Gas Chromatograph (GC) and Gas Chromatograph/Mass Spectra (GC/MS) calibration areas and is due to the fact that the analytical methods are "performance-based", and allows the use of average calibration responses, in lieu of, individual responses, which are defined by CLP protocol. In light of applying CLP guidelines to SW846 methods and evaluating the usability of the data during the validation process, specific QC criteria were determined to address all target compounds and

are identified in this report for each parameter, as well as, in the validation checklists, which function as worksheets. All completed validation checklists are on file in the Knoxville office. For those analytical methods not addressed by the CLP and Region III guidelines, the validation was based on the method requirements (i. e. SW846, CFR, SOP's, QAP) and technical judgement following the logic of the CLP validation guidelines.

3.0 Summary of Data Validation Findings

The overall quality of the data was determined to be acceptable with minimal qualification. The only rejected data were samples that were reanalyzed and have more than one result reported. The R qualifier was assigned to samples with more than one set of results to indicate that a given result should no be used to characterize a particular constituent or an analysis for a given sample.

Individual validation reports have been prepared for each parameter in each SDG and the overall results of the validation findings are summarized in this report. The validation qualifier data entry verification report (Attachment A) is also provided. This is a complete listing of all of the analytical results and the validation qualifiers assigned for Parcel HR-114Q. It also identifies the 'use' column, which indicates which result to use in the event of a reanalysis. A listing of the validation qualifiers and the reason codes, along with their definitions is also found in Attachment A. The following section highlights the key findings of the data validation for each analysis.

4.0 Analysis-Specific Data Validation Summaries

4.1 Volatile Organics by GC/MS SW846 8260B

Overall, the data are of good quality and are usable as reported by the laboratory with the exceptions noted below. Data were reviewed for the following:

Holding Times

Technical holding time criteria were met for all samples.

Initial and Continuing Calibration

The initial calibration and continuing calibrations associated with the project samples met QC criteria, with the exception of the following:

- The following exhibited individual CCAL %D's > 20%:

SDG Number	Samples Affected	Compound(s)	Validation Qualifier
10114Q-05	JJ3003	Bromomethane, Chloroethane	UJ
10114Q-06	JJ3002	Bromomethane	UJ

Blanks

The 5X/10X rule for contaminants found in the associated equipment rinses, trip blanks, and method blanks was applied to all sample results. All were found to be acceptable with the exception of the following:

Note: 'B' Qualifiers were applied to all of the following sample results.

SDG	Samples Affected	Analyte/Analytes	Associated Blank Contamination
10114Q-06	JJ3002	Chloroform	ER

'B' qualifiers assigned to designate blank contamination, which are identification qualifiers, take precedence over estimating qualifiers, assigned due to quantitation.

Surrogate Recoveries

All surrogate recoveries are within acceptable QC limits.

Matrix Spike / Matrix Spike Duplicate

MS/MSD was performed for the project samples and all QC criteria were met.

Laboratory Control Sample (LCS)

LCS was performed for the project samples and all QC criteria were met.

Field Duplicates

Original and field duplicate results were evaluated and no problems were identified.

Internal Standards

All internal standards met QC criteria

Quantitation

Results quantified between the MDL and the RL, which the lab qualified as "J," were qualified as estimated 'J' unless blank contamination was present or the results were rejected.

4.2 Metals by SW846 6010B/7471A/7470A

Overall, the data are of good quality and are usable as reported by the laboratory with the exceptions noted below. Data were reviewed for the following:

Holding Times

Technical holding time criteria were met for all samples.

Initial and Continuing calibrations

All initial and continuing calibrations associated with the project samples met QC criteria.

Blanks

The 5X rule for contaminants found in the associated equipment rinse, calibration, and method blanks was applied to all sample results. All were acceptable with the exception of the following:

Note: 'B' Qualifiers were applied to all of the following sample results.

SDG	Samples Affected	Analyte/Analytes	Associated Blank Contamination
10114Q-01	JJ0001, JJ0004, JJ0006, JJ0007	Arsenic	Calibration
	JJ0005, JJ0007, JJ0013	Potassium	Calibration
	JJ0007, JJ0011	Thallium	Calibration
10114Q-02	JJ0015, JJ0016	Beryllium	Calibration
10114Q-04	JJ2001	Lead	Calibration
10114Q-05	JJ3003	Iron, Magnesium	Calibration
10114Q-07	JJ3001	Nickel	Calibration

'B' qualifiers assigned to designate blank contamination, which are identification qualifiers, take precedence over estimating qualifiers, assigned due to quantitation.

Matrix Spike / Matrix Spike Duplicate

Batch QC was performed for the project samples and all QC criteria were met, with the exception of the following:

SDG	Samples Affected	Element/Elements	Validation Qualifier
10114Q-01	JJ0001, JJ0002, JJ0003, JJ0004, JJ0005, JJ0006, JJ0007, JJ0008, JJ0009, JJ0010, JJ0011, JJ0012, JJ0013	Antimony, Iron	J/UJ
10114Q-02	JJ0014, JJ0015, JJ0016	Aluminum, Antimony, Iron	J/UJ

Laboratory Control Sample (LCS)

All QC criteria were met for the LCS associated with the project sample analyses.

Interference Check Sample (ICS)

All ICS % recoveries for the project samples were acceptable.

ICP Serial Dilutions

All QC criteria were met with the exception of the following:

SDG	Samples Affected	Element/Elements	Validation Qualifier
10114Q-01	JJ0001, JJ0002, JJ0003, JJ0004, JJ0005, JJ0006, JJ0007, JJ0008, JJ0009, JJ0010, JJ0011, JJ0012, JJ0013	Zinc	J
10114Q-02	JJ0014, JJ0015, JJ0016	Zinc, Vanadium	J

Field Duplicates

Original and field duplicate results were evaluated and no problems were identified.

Sample Quantitation

Results quantified between the IDL and the RL ("J" flagged by the laboratory) were qualified as estimated (J).

4.3 Nitroaromatic and Nitramine Explosives by SW846 8330

Overall, the data are of good quality and are usable as reported by the laboratory with the exceptions noted below. Data were reviewed for the following:

Holding Times

Technical holding time criteria were met for all samples.

Initial and Continuing Calibration

All initial and continuing calibrations associated with the project samples met QC criteria.

Blanks

The 5X rule for contaminants found in the associated equipment rinses and method blanks was applied to all sample results. All were found to be acceptable.

Surrogate Recoveries

All surrogate recoveries are within acceptable QC ranges.

Matrix Spike / Matrix Spike Duplicate

MS/MSD was performed for the project samples and all QC criteria were met.

Laboratory Control Sample (LCS)

LCS was performed for the project samples and all QC criteria were met.

Field Duplicates

Original and field duplicate results were evaluated and no problems were identified.

Quantitation

Results quantified between the MDL and the RL, which the lab qualified as "J," were qualified as estimated 'J' unless blank contamination was present or the results were rejected.

4.4 Perchlorate by EPA 314.0

Overall, the data are of good quality and are usable as reported by the laboratory. Data were reviewed for the following:

Holding Times

Technical holding time criteria were met for all samples.

Initial and Continuing Calibration

All initial and continuing calibrations associated with the project samples met QC criteria.

Blanks

The 5X rule for contaminants found in the associated equipment rinses and method blanks was applied to all sample results. All were found to be acceptable.

Matrix Spike / Matrix Spike Duplicate

MS/MSD was performed for the project samples and all QC criteria were met.

Laboratory Control Sample (LCS)

All QC criteria were met for the LCS associated with the project sample analyses.

Field Duplicates

Original and field duplicate results were evaluated and no problems were noted.

Quantitation

Results quantified between the MDL and the RL, which the lab qualified as 'J' were qualified as estimated 'J' unless blank contamination was present or the results were rejected.

Attachment A:

Data Validation Qualifier Entry Verification Report

Validation Qualifiers

U Not detected. The compound/analyte was analyzed for, but not detected above the associated reporting limit.

J The compound/analyte was positively identified; the reported value is the estimated concentration of the constituent detected in the sample analyzed.

B The concentration reported was detected significantly above the levels reported in the associated equipment rinse samples and/or laboratory method and trip blanks. (5X/10X Rule was applied).

R The reported sample results are rejected due to the following:

1. Severe deficiencies in the supporting quality control data.

2. Anomalies noted in the sampling and/or analysis process which could affect the validity of the reported data.

3. The presence or absence of the constituent cannot be verified based on the data provided.

4. To indicate not to use a particular result in the event of a reanalysis.

UJ The compound/analyte was analyzed for, but not detected above the established reporting limit. However, review and evaluation of supporting QC data and/or sampling and analysis process have indicated that the 'non-detect' maybe inaccurate or imprecise. The non-detect result should be estimated.

Validation Reason Code Definitions

Reason Code	Description
01	Sample received outside of 4+/-2 degrees Celsius
01A	Improper sample preservation
02	Holding Time Exceeded
02A	Extraction
02B	Analysis
03	Instrument Performance - Outside Criteria
03A	BFB
03B	DFTPP
03C	DDT and/or Endrin % breakdown exceeds criteria
03D	retention time windows
03E	Resolution
04	Initial calibration results outside specified criteria
04A	Compound mean RRF QC criteria not met
04B	Individual % RSD criteria not met
04C	Correlation coefficient <0.995
05	Continuing calibration results outside specified criteria
05A	Compound mean RRF QC criteria not met
05B	Compound % D QC criteria not met
06	Result qualified as a result of the 5x/10x blank correction
06A	Method or preparation blank
06B	ICB or CCB
06C	ER
06D	TB
06E	FB
07	Surrogate recoveries outside control limits
07A	Sample
07B	Associated method blank or LCS
08	MS/MSD/Duplicate results outside criteria
08A	MS and/or MSD recovery not within control limits (accuracy)
08B	% RPD outside acceptance criteria (precision)
09	Post digestion spike outside criteria (GFAA)
10	Internal standards outside specified control limits
10A	Recovery

Validation Reason Code Definitions

Reason Code	Description
10B	Retention Time
11	Laboratory control sample recoveries outside specified control limits
11A	Recovery
11B	% RPD (if run in duplicate)
12	Interference check standard
13	Serial dilution
14	Tentatively identified compounds
15	Quantitation
16	Multiple results available; alternate analysis preferred
17	Field duplicate RPD criteria is exceeded
18	Percent difference between original and second column exceeds QC criteria
19	Professional judgement was used to qualify the data
20	Pesticide clean-up checks
21	Target compound identification
22	Radiological calibration
23	Radiological quantitation
24	Reported result and/or lab qualifier revised to reflect validation findings

Validation Qualifier Data Entry Verification

Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q-02																		
JJ0014	SW6010B	SW3050	N 0 1	ALUMINUM	4070	mg/kg		Y	Y	P	J		08A				B021-01	20:07
				ANTIMONY	11	mg/kg	U	N	Y	U	UJ		08A				B021-01	20:07
				ARSENIC	1.1	mg/kg	J	Y	Y	P	J		15				B021-01	15:54
				BARIUM	16.9	mg/kg		Y	Y	P							B021-01	20:07
				BERYLLIUM	.109	mg/kg	J	Y	Y	P	J		15				B021-01	20:07
				CADMIUM	.552	mg/kg	U	N	Y	U	U						B021-01	20:07
				CALCIUM	57.7	mg/kg	J	Y	Y	P	J		15				B021-01	20:07
				CHROMIUM	3.14	mg/kg		Y	Y	P							B021-01	20:07
				COBALT	.488	mg/kg	J	Y	Y	P	J		15				B021-01	20:07
				COPPER	6.58	mg/kg		Y	Y	P							B021-01	20:07
				IRON	2860	mg/kg		Y	Y	P	J		08A				B021-01	20:07
				LEAD	635	mg/kg		Y	Y	P							B021-01	15:54
				MAGNESIUM	147	mg/kg		Y	Y	P							B021-01	20:07
				MANGANESE	23.1	mg/kg		Y	Y	P							B021-01	20:07
				NICKEL	1.17	mg/kg	J	Y	Y	P	J		15				B021-01	20:07
				POTASSIUM	141	mg/kg	J	Y	Y	P	J		15				B021-01	20:07
				SELENIUM	1.1	mg/kg	U	N	Y	U	U						B021-01	15:54
				SILVER	1.1	mg/kg	U	N	Y	U	U						B021-01	20:07
				SODIUM	110	mg/kg	U	N	Y	U	U						B021-01	20:07
				THALLIUM	2.21	mg/kg	U	N	Y	U	U						B021-01	15:54
				VANADIUM	6.92	mg/kg		Y	Y	P	J		13				B021-01	20:07
				ZINC	15.6	mg/kg		Y	Y	P	J		13				B021-01	20:07
	SW7471A	TOTAL	N 0 1	MERCURY	.11	mg/kg	U	N	Y	U	U						B021-01	11:28
JJ0015	SW6010B	SW3050	N 0 1	ALUMINUM	3820	mg/kg		Y	Y	P	J		08A				B021-02	20:12
				ANTIMONY	10.9	mg/kg	U	N	Y	U	UJ		08A				B021-02	20:12
				ARSENIC	1.49	mg/kg		Y	Y	P							B021-02	15:46
				BARIUM	12.4	mg/kg		Y	Y	P							B021-02	20:12
				BERYLLIUM	.0435	mg/kg	J	Y	Y	F	B		06B	15			B021-02	20:12
				CADMIUM	.545	mg/kg	U	N	Y	U	U						B021-02	20:12
				CALCIUM	39	mg/kg	J	Y	Y	P	J		15				B021-02	20:12
				CHROMIUM	6.01	mg/kg		Y	Y	P							B021-02	20:12
				COBALT	.346	mg/kg	J	Y	Y	P	J		15				B021-02	20:12
				COPPER	9.58	mg/kg		Y	Y	P							B021-02	20:12
				IRON	3490	mg/kg		Y	Y	P	J		08A				B021-02	20:12
				LEAD	166	mg/kg		Y	Y	P							B021-02	15:46
				MAGNESIUM	120	mg/kg		Y	Y	P							B021-02	20:12
				MANGANESE	6.5	mg/kg		Y	Y	P							B021-02	20:12
				NICKEL	1.38	mg/kg	J	Y	Y	P	J		15				B021-02	20:12
				POTASSIUM	545	mg/kg	U	N	Y	U	U						B021-02	20:12
				SELENIUM	1.09	mg/kg	U	N	Y	U	U						B021-02	15:46

Validation Qualifier Data Entry Verification

Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q-02																		
JJ0015	SW6010B	SW3050	N 0 1	SILVER	1.09	mg/kg	U	N	Y	U	U						B021-02	20:12
				SODIUM	109	mg/kg	U	N	Y	U	U						B021-02	20:12
				THALLIUM	2.18	mg/kg	U	N	Y	U	U						B021-02	15:46
				VANADIUM	8.06	mg/kg		Y	Y	P	J		13				B021-02	20:12
				ZINC	6.1	mg/kg		Y	Y	P	J		13				B021-02	20:12
	SW7471A	TOTAL	N 0 1	MERCURY	.109	mg/kg	U	N	Y	U	U						B021-02	11:37
JJ0016	SW6010B	SW3050	N 0 1	ALUMINUM	3290	mg/kg		Y	Y		J		08A				B021-03	20:18
				ANTIMONY	10.9	mg/kg	U	N	Y		UJ		08A				B021-03	20:18
				ARSENIC	1.08	mg/kg	J	Y	Y		J		15				B021-03	15:50
				BARIUM	8.76	mg/kg		Y	Y								B021-03	20:18
				BERYLLIUM	.0371	mg/kg	J	Y	Y	F	B		06B	15			B021-03	20:18
				CADMIUM	.545	mg/kg	U	N	Y		U						B021-03	20:18
				CALCIUM	42.7	mg/kg	J	Y	Y		J		15				B021-03	20:18
				CHROMIUM	5.03	mg/kg		Y	Y								B021-03	20:18
				COBALT	2.18	mg/kg	U	N	Y		U						B021-03	20:18
				COPPER	10.2	mg/kg		Y	Y								B021-03	20:18
				IRON	3050	mg/kg		Y	Y		J		08A				B021-03	20:18
				LEAD	211	mg/kg		Y	Y								B021-03	15:50
				MAGNESIUM	96.7	mg/kg	J	Y	Y		J		15				B021-03	20:18
				MANGANESE	6.15	mg/kg		Y	Y								B021-03	20:18
				NICKEL	1	mg/kg	J	Y	Y		J		15				B021-03	20:18
				POTASSIUM	151	mg/kg	J	Y	Y		J		15				B021-03	20:18
				SELENIUM	1.09	mg/kg	U	N	Y		U						B021-03	15:50
				SILVER	1.09	mg/kg	U	N	Y		U						B021-03	20:18
				SODIUM	109	mg/kg	U	N	Y		U						B021-03	20:18
				THALLIUM	2.18	mg/kg	U	N	Y		U						B021-03	15:50
				VANADIUM	7	mg/kg		Y	Y		J		13				B021-03	20:18
				ZINC	7.26	mg/kg		Y	Y		J		13				B021-03	20:18
	SW7471A	TOTAL	N 0 1	MERCURY	.109	mg/kg	U	N	Y		U						B021-03	11:40
JJ0014	SW8330	METHOD	N 0 1	1,3,5-TNB	.4	mg/kg	U	N	Y	U	U						B021-01	21:10
				1,3-DNB	.4	mg/kg	U	N	Y	U	U						B021-01	21:10
				2,4,6-TNT	.4	mg/kg	U	N	Y	U	U						B021-01	21:10
				2,4-DNT	.4	mg/kg	U	N	Y	U	U						B021-01	21:10
				2,6-DNT	.4	mg/kg	U	N	Y	U	U						B021-01	21:10
				2-AM-4,6-DNT	.4	mg/kg	U	N	Y	U	U						B021-01	21:10
				2-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						B021-01	21:10
				3-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						B021-01	21:10
				4-AM-2,6-DNT	.4	mg/kg	U	N	Y	U	U						B021-01	21:10
				4-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						B021-01	21:10
				HMX	.4	mg/kg	U	N	Y	U	U						B021-01	21:10

Validation Qualifier Data Entry Verification

Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q-02																		
JJ0014	SW8330	METHOD	N 0 1	NITROBENZENE	.4	mg/kg	U	N	Y	U	U						B021-01	21:10
				RDX	.4	mg/kg	U	N	Y	U	U						B021-01	21:10
				TETRYL	.4	mg/kg	U	N	Y	U	U						B021-01	21:10
JJ0015	SW8330	METHOD	N 0 1	1,3,5-TNB	.4	mg/kg	U	N	Y	U	U						B021-02	23:12
				1,3-DNB	.4	mg/kg	U	N	Y	U	U						B021-02	23:12
				2,4,6-TNT	.4	mg/kg	U	N	Y	U	U						B021-02	23:12
				2,4-DNT	.4	mg/kg	U	N	Y	U	U						B021-02	23:12
				2,6-DNT	.4	mg/kg	U	N	Y	U	U						B021-02	23:12
				2-AM-4,6-DNT	.4	mg/kg	U	N	Y	U	U						B021-02	23:12
				2-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						B021-02	23:12
				3-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						B021-02	23:12
				4-AM-2,6-DNT	.4	mg/kg	U	N	Y	U	U						B021-02	23:12
				4-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						B021-02	23:12
				HMX	.4	mg/kg	U	N	Y	U	U						B021-02	23:12
				NITROBENZENE	.4	mg/kg	U	N	Y	U	U						B021-02	23:12
				RDX	.4	mg/kg	U	N	Y	U	U						B021-02	23:12
				TETRYL	.4	mg/kg	U	N	Y	U	U						B021-02	23:12
JJ0016	SW8330	METHOD	N 0 1	1,3,5-TNB	.4	mg/kg	U	N	Y		U						B021-03	23:52
				1,3-DNB	.4	mg/kg	U	N	Y		U						B021-03	23:52
				2,4,6-TNT	.4	mg/kg	U	N	Y		U						B021-03	23:52
				2,4-DNT	.4	mg/kg	U	N	Y		U						B021-03	23:52
				2,6-DNT	.4	mg/kg	U	N	Y		U						B021-03	23:52
				2-AM-4,6-DNT	.4	mg/kg	U	N	Y		U						B021-03	23:52
				2-NITROTOLUENE	.4	mg/kg	U	N	Y		U						B021-03	23:52
				3-NITROTOLUENE	.4	mg/kg	U	N	Y		U						B021-03	23:52
				4-AM-2,6-DNT	.4	mg/kg	U	N	Y		U						B021-03	23:52
				4-NITROTOLUENE	.4	mg/kg	U	N	Y		U						B021-03	23:52
				HMX	.4	mg/kg	U	N	Y		U						B021-03	23:52
				NITROBENZENE	.4	mg/kg	U	N	Y		U						B021-03	23:52
				RDX	.4	mg/kg	U	N	Y		U						B021-03	23:52
				TETRYL	.4	mg/kg	U	N	Y		U						B021-03	23:52
JJ0014	EPA314.0	NONE	N 0 1	PERCHLORATE	.0552	mg/kg	U	N	Y	U	U						B021-01	19:05
JJ0015	EPA314.0	NONE	N 0 1	PERCHLORATE	.0545	mg/kg	U	N	Y	U	U						B021-02	19:57
JJ0016	EPA314.0	NONE	N 0 1	PERCHLORATE	.0545	mg/kg	U	N	Y		U						B021-03	20:14
10114Q-03																		
JJ1001	SW6010B	SW3050	N 0 1	ALUMINUM	11200	mg/kg		Y	Y	P							C028-01	00:27
				ANTIMONY	15.4	mg/kg	U	N	Y	U	U						C028-01	00:27
				ARSENIC	2.38	mg/kg		Y	Y	P							C028-01	23:01
				BARIUM	15.8	mg/kg		Y	Y	P							C028-01	00:27

Validation Qualifier Data Entry Verification

Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q-03																		
JJ1001	SW6010B	SW3050	N 0 1	BERYLLIUM	.173	mg/kg	J	Y	Y	P	J		15				C028-01	00:27
				CADMIUM	.772	mg/kg	U	N	Y	U	U						C028-01	00:27
				CALCIUM	157	mg/kg		Y	Y	P							C028-01	00:27
				CHROMIUM	21.9	mg/kg		Y	Y	P							C028-01	00:27
				COBALT	.868	mg/kg	J	Y	Y	P	J		15				C028-01	00:27
				COPPER	5.55	mg/kg		Y	Y	P							C028-01	00:27
				IRON	17000	mg/kg		Y	Y	P							C028-01	00:27
				LEAD	6.65	mg/kg		Y	Y	P							C028-01	23:01
				MAGNESIUM	206	mg/kg		Y	Y	P							C028-01	00:27
				MANGANESE	18.1	mg/kg		Y	Y	P							C028-01	00:27
				NICKEL	2.33	mg/kg	J	Y	Y	P	J		15				C028-01	00:27
				POTASSIUM	772	mg/kg	U	N	Y	U	U						C028-01	00:27
				SELENIUM	1.54	mg/kg	U	N	Y	U	U						C028-01	23:01
				SILVER	1.54	mg/kg	U	N	Y	U	U						C028-01	00:27
				SODIUM	38.3	mg/kg	J	Y	Y	P	J		15				C028-01	00:27
				THALLIUM	3.09	mg/kg	U	N	Y	U	U						C028-01	23:01
				VANADIUM	37.4	mg/kg		Y	Y	P							C028-01	00:27
				ZINC	16.9	mg/kg		Y	Y	P							C028-01	00:27
	SW7471A	TOTAL	N 0 1	MERCURY	.040	mg/kg	J	Y	Y	P	J		15				C028-01	14:32
JJ1001	SW8330	METHOD	N 0 1	1,3,5-TNB	.4	mg/kg	U	N	Y	U	U						C028-01	23:49
				1,3-DNB	.4	mg/kg	U	N	Y	U	U						C028-01	23:49
				2,4,6-TNT	.4	mg/kg	U	N	Y	U	U						C028-01	23:49
				2,4-DNT	.4	mg/kg	U	N	Y	U	U						C028-01	23:49
				2,6-DNT	.4	mg/kg	U	N	Y	U	U						C028-01	23:49
				2-AM-4,6-DNT	.4	mg/kg	U	N	Y	U	U						C028-01	23:49
				2-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						C028-01	23:49
				3-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						C028-01	23:49
				4-AM-2,6-DNT	.4	mg/kg	U	N	Y	U	U						C028-01	23:49
				4-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						C028-01	23:49
				HMX	.4	mg/kg	U	N	Y	U	U						C028-01	23:49
				NITROBENZENE	.4	mg/kg	U	N	Y	U	U						C028-01	23:49
				RDX	.4	mg/kg	U	N	Y	U	U						C028-01	23:49
				TETRYL	.4	mg/kg	U	N	Y	U	U						C028-01	23:49
JJ1001	E314.0	NONE	N 0 1	PERCHLORATE	.0772	mg/kg	U	N	Y	U	U						C028-01	04:28
JJ1001	SW9060	NONE	N 0 1	TOC	110	mg/kg		Y	Y	P							C028-01	18:00
10114Q-04																		
JJ2001	SW6010B	SW3010	N 0 1	ALUMINUM	2.63	mg/L		Y	Y	P							C029-01	01:51
				ANTIMONY	.1	mg/L	U	N	Y	U	U						C029-01	01:51
				ARSENIC	.01	mg/L	U	N	Y	U	U						C029-01	20:21

Validation Qualifier Data Entry Verification

Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q-04																		
JJ2001	SW6010B	SW3010	N 0 1	BARIUM	.022	mg/L		Y	Y	P							C029-01	01:51
				BERYLLIUM	.001	mg/L	U	N	Y	U	U						C029-01	01:51
				CADMIUM	.01	mg/L	U	N	Y	U	U						C029-01	01:51
				CALCIUM	1.34	mg/L		Y	Y	P							C029-01	01:51
				CHROMIUM	.01	mg/L	U	N	Y	U	U						C029-01	01:51
				COBALT	.02	mg/L	U	N	Y	U	U						C029-01	01:51
				COPPER	.02	mg/L	U	N	Y	U	U						C029-01	01:51
				IRON	1.5	mg/L		Y	Y	P							C029-01	01:51
				LEAD	.0031	mg/L	J	Y	Y	F	B		06B	15			C029-01	20:21
				MAGNESIUM	.398	mg/L	J	Y	Y	P	J		15				C029-01	01:51
				MANGANESE	.0876	mg/L		Y	Y	P							C029-01	01:51
				NICKEL	.02	mg/L	U	N	Y	U	U						C029-01	01:51
				POTASSIUM	5	mg/L	U	N	Y	U	U						C029-01	01:51
				SELENIUM	.01	mg/L	U	N	Y	U	U						C029-01	20:21
				SILVER	.01	mg/L	U	N	Y	U	U						C029-01	01:51
				SODIUM	1	mg/L	U	N	Y	U	U						C029-01	01:51
				THALLIUM	.01	mg/L	U	N	Y	U	U						C029-01	20:21
				VANADIUM	.00407	mg/L	J	Y	Y	P	J		15				C029-01	01:51
				ZINC	.0381	mg/L		Y	Y	P							C029-01	01:51
	SW7470A	TOTAL	N 0 1	MERCURY	.00437	mg/L		Y	Y	P							C029-01	11:49
JJ2001	SW8330	METHOD	N 0 1	1,3,5-TNB	.0004	mg/L	U	N	Y	U	U						C029-01	05:42
				1,3-DNB	.0004	mg/L	U	N	Y	U	U						C029-01	05:42
				2,4,6-TNT	.0004	mg/L	U	N	Y	U	U						C029-01	05:42
				2,4-DNT	.0004	mg/L	U	N	Y	U	U						C029-01	05:42
				2,6-DNT	.0004	mg/L	U	N	Y	U	U						C029-01	05:42
				2-AM-4,6-DNT	.0004	mg/L	U	N	Y	U	U						C029-01	05:42
				2-NITROTOLUENE	.0004	mg/L	U	N	Y	U	U						C029-01	05:42
				3-NITROTOLUENE	.0004	mg/L	U	N	Y	U	U						C029-01	05:42
				4-AM-2,6-DNT	.0004	mg/L	U	N	Y	U	U						C029-01	05:42
				4-NITROTOLUENE	.0004	mg/L	U	N	Y	U	U						C029-01	05:42
				HMX	.001	mg/L	U	N	Y	U	U						C029-01	05:42
				NITROBENZENE	.0004	mg/L	U	N	Y	U	U						C029-01	05:42
				RDX	.0004	mg/L	U	N	Y	U	U						C029-01	05:42
				TETRYL	.0004	mg/L	U	N	Y	U	U						C029-01	05:42
JJ2001	E314.0	NONE	N 0 1	PERCHLORATE	.005	mg/L	U	N	Y	U	U						C029-01	20:04
10114Q-05																		
JJ3003	SW6010B	SW3010	N 0 1	ALUMINUM	.256	mg/L		Y	Y	P							E066-01	00:40
				ANTIMONY	.1	mg/L	U	N	Y	U	U						E066-01	00:40
				ARSENIC	.01	mg/L	U	N	Y	U	U						E066-01	19:51

Validation Qualifier Data Entry Verification

Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q-05																		
JJ3003	SW6010B	SW3010	N 0 1	BARIUM	.00957	mg/L	J	Y	Y	P	J		15				E066-01	00:40
				BERYLLIUM	.001	mg/L	U	N	Y	U	U						E066-01	00:40
				CADMIUM	.01	mg/L	U	N	Y	U	U						E066-01	00:40
				CALCIUM	4.71	mg/L		Y	Y	P							E066-01	00:40
				CHROMIUM	.01	mg/L	U	N	Y	U	U						E066-01	00:40
				COBALT	.02	mg/L	U	N	Y	U	U						E066-01	00:40
				COPPER	.02	mg/L	U	N	Y	U	U						E066-01	00:40
				IRON	.0189	mg/L	J	Y	Y	F	B		06B	15			E066-01	00:40
				LEAD	.01	mg/L	U	N	Y	U	U						E066-01	19:51
				MAGNESIUM	.132	mg/L	J	Y	Y	F	B		06B	15			E066-01	00:40
				MANGANESE	.00322	mg/L	J	Y	Y	P	J		15				E066-01	00:40
				NICKEL	.02	mg/L	U	N	Y	U	U						E066-01	00:40
				POTASSIUM	5	mg/L	U	N	Y	U	U						E066-01	00:40
				SELENIUM	.01	mg/L	U	N	Y	U	U						E066-01	19:51
				SILVER	.01	mg/L	U	N	Y	U	U						E066-01	00:40
				SODIUM	2.28	mg/L		Y	Y	P							E066-01	00:40
				THALLIUM	.01	mg/L	U	N	Y	U	U						E066-01	19:51
				VANADIUM	.01	mg/L	U	N	Y	U	U						E066-01	00:40
				ZINC	.02	mg/L	U	N	Y	U	U						E066-01	00:40
	SW7470A	TOTAL	N 0 1	MERCURY	.0005	mg/L	U	N	Y	U	U						E066-01	15:47
JJ3003	SW8330	METHOD	N 0 1	1,3,5-TNB	.0004	mg/L	U	N	Y	U	U						E066-01	00:34
				1,3-DNB	.0004	mg/L	U	N	Y	U	U						E066-01	00:34
				2,4,6-TNT	.0004	mg/L	U	N	Y	U	U						E066-01	00:34
				2,4-DNT	.0004	mg/L	U	N	Y	U	U						E066-01	00:34
				2,6-DNT	.0004	mg/L	U	N	Y	U	U						E066-01	00:34
				2-AM-4,6-DNT	.0004	mg/L	U	N	Y	U	U						E066-01	00:34
				2-NITROTOLUENE	.0004	mg/L	U	N	Y	U	U						E066-01	00:34
				3-NITROTOLUENE	.0004	mg/L	U	N	Y	U	U						E066-01	00:34
				4-AM-2,6-DNT	.0004	mg/L	U	N	Y	U	U						E066-01	00:34
				4-NITROTOLUENE	.0004	mg/L	U	N	Y	U	U						E066-01	00:34
				HMX	.001	mg/L	U	N	Y	U	U						E066-01	00:34
				NITROBENZENE	.0004	mg/L	U	N	Y	U	U						E066-01	00:34
				RDX	.0004	mg/L	U	N	Y	U	U						E066-01	00:34
				TETRYL	.0004	mg/L	U	N	Y	U	U						E066-01	00:34
JJ3003	E314.0	NONE	N 0 1	PERCHLORATE	.005	mg/L	U	N	Y	U	U						E066-01	23:35
JJ3003	SW8260B	SW5030	N 0 1	1,1,1,2-TETRACHLOROETHANE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				1,1,1-TRICHLOROETHANE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				1,1,2,2-TETRACHLOROETHANE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				1,1,2-TRICHLOROETHANE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				1,1-DICHLOROETHANE	.005	mg/L	U	N	Y	U	U						E066-01	05:15

Validation Qualifier Data Entry Verification

Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q-05																		
JJ3003	SW8260B	SW5030	N 0 1	1,1-DICHLOROETHENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				1,1-DICHLOROPROPENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				1,2,3-TRICHLOROBENZENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				1,2,3-TRICHLOROPROPANE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				1,2,4-TRICHLOROBENZENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				1,2,4-TRIMETHYLBENZENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				1,2-DIBROMO-3-CHLOROPROPANE	.01	mg/L	U	N	Y	U	U						E066-01	05:15
				1,2-DIBROMOETHANE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				1,2-DICHLOROBENZENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				1,2-DICHLOROETHANE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				1,2-DICHLOROPROPANE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				1,3,5-TRIMETHYLBENZENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				1,3-DICHLOROBENZENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				1,3-DICHLOROPROPANE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				1,4-DICHLOROBENZENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				2,2-DICHLOROPROPANE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				2-BUTANONE	.02	mg/L	U	N	Y	U	U						E066-01	05:15
				2-CHLOROTOLUENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				2-HEXANONE	.02	mg/L	U	N	Y	U	U						E066-01	05:15
				4-CHLOROTOLUENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				4-METHYL-2-PENTANONE	.01	mg/L	U	N	Y	U	U						E066-01	05:15
				ACETONE	1.3	mg/L	E	Y	N	P	R	16					E066-01	05:15
				BENZENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				BROMOBENZENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				BROMOCHLOROMETHANE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				BROMODICHLOROMETHANE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				BROMOFORM	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				BROMOMETHANE	.005	mg/L	U	N	Y	U	UJ	05B					E066-01	05:15
				CARBON DISULFIDE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				CARBON TETRACHLORIDE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				CHLOROBENZENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				CHLOROETHANE	.005	mg/L	U	N	Y	U	UJ	05B					E066-01	05:15
				CHLOROFORM	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				CHLOROMETHANE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				CIS-1,2-DICHLOROETHENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				CIS-1,3-DICHLOROPROPENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				DIBROMOCHLOROMETHANE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				DIBROMOMETHANE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				DICHLORODIFLUOROMETHANE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				ETHYLBENZENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15

Validation Qualifier Data Entry Verification

Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q-05																		
JJ3003	SW8260B	SW5030	N 0 1	HEXACHLOROBUTADIENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				ISOPROPYL BENZENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				M/P-XYLENES	.01	mg/L	U	N	Y	U	U						E066-01	05:15
				METHYLENE CHLORIDE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				N-BUTYLBENZENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				N-PROPYLBENZENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				NAPHTHALENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				O-XYLENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				P-ISOPROPYLTOLUENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				SEC-BUTYLBENZENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				STYRENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				TERT-BUTYLBENZENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				TETRACHLOROETHENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				TOLUENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				TRANS-1,2-DICHLOROETHENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				TRANS-1,3-DICHLOROPROPENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				TRICHLOROETHENE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				TRICHLOROFLUOROMETHANE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
				VINYL CHLORIDE	.005	mg/L	U	N	Y	U	U						E066-01	05:15
	SW8260B	SW5030	N 1 5	1,1,1,2-TETRACHLOROETHANE	.025	mg/L	U	N	N	U	R	16					E066-01T	11:34
				1,1,1-TRICHLOROETHANE	.025	mg/L	U	N	N	U	R	16					E066-01T	11:34
				1,1,2,2-TETRACHLOROETHANE	.025	mg/L	U	N	N	U	R	16					E066-01T	11:34
				1,1,2-TRICHLOROETHANE	.025	mg/L	U	N	N	U	R	16					E066-01T	11:34
				1,1-DICHLOROETHANE	.025	mg/L	U	N	N	U	R	16					E066-01T	11:34
				1,1-DICHLOROETHENE	.025	mg/L	U	N	N	U	R	16					E066-01T	11:34
				1,1-DICHLOROPROPENE	.025	mg/L	U	N	N	U	R	16					E066-01T	11:34
				1,2,3-TRICHLOROBENZENE	.025	mg/L	U	N	N	U	R	16					E066-01T	11:34
				1,2,3-TRICHLOROPROPANE	.025	mg/L	U	N	N	U	R	16					E066-01T	11:34
				1,2,4-TRICHLOROBENZENE	.025	mg/L	U	N	N	U	R	16					E066-01T	11:34
				1,2,4-TRIMETHYLBENZENE	.025	mg/L	U	N	N	U	R	16					E066-01T	11:34
				1,2-DIBROMO-3-CHLOROPROPANE	.05	mg/L	U	N	N	U	R	16					E066-01T	11:34
				1,2-DIBROMOETHANE	.025	mg/L	U	N	N	U	R	16					E066-01T	11:34
				1,2-DICHLOROBENZENE	.025	mg/L	U	N	N	U	R	16					E066-01T	11:34
				1,2-DICHLOROETHANE	.025	mg/L	U	N	N	U	R	16					E066-01T	11:34
				1,2-DICHLOROPROPANE	.025	mg/L	U	N	N	U	R	16					E066-01T	11:34
				1,3,5-TRIMETHYLBENZENE	.025	mg/L	U	N	N	U	R	16					E066-01T	11:34
				1,3-DICHLOROBENZENE	.025	mg/L	U	N	N	U	R	16					E066-01T	11:34
				1,3-DICHLOROPROPANE	.025	mg/L	U	N	N	U	R	16					E066-01T	11:34
				1,4-DICHLOROBENZENE	.025	mg/L	U	N	N	U	R	16					E066-01T	11:34
				2,2-DICHLOROPROPANE	.025	mg/L	U	N	N	U	R	16					E066-01T	11:34

Validation Qualifier Data Entry Verification

Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q-05																		
JJ3003	SW8260B	SW5030	N 1 5	2-BUTANONE	.1	mg/L	U	N	N	U	R		16				E066-01T	11:34
				2-CHLOROTOLUENE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				2-HEXANONE	.1	mg/L	U	N	N	U	R		16				E066-01T	11:34
				4-CHLOROTOLUENE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				4-METHYL-2-PENTANONE	.05	mg/L	U	N	N	U	R		16				E066-01T	11:34
				ACETONE	1.2	mg/L		Y	Y	P							E066-01T	11:34
				BENZENE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				BROMOBENZENE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				BROMOCHLOROMETHANE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				BROMODICHLOROMETHANE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				BROMOFORM	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				BROMOMETHANE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				CARBON DISULFIDE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				CARBON TETRACHLORIDE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				CHLOROBENZENE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				CHLOROETHANE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				CHLOROFORM	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				CHLOROMETHANE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				CIS-1,2-DICHLOROETHENE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				CIS-1,3-DICHLOROPROPENE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				DIBROMOCHLOROMETHANE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				DIBROMOMETHANE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				DICHLORODIFLUOROMETHANE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				ETHYLBENZENE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				HEXACHLOROBUTADIENE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				ISOPROPYL BENZENE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				M/P-XYLENES	.05	mg/L	U	N	N	U	R		16				E066-01T	11:34
				METHYLENE CHLORIDE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				N-BUTYLBENZENE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				N-PROPYLBENZENE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				NAPHTHALENE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				O-XYLENE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				P-ISOPROPYLTOLUENE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				SEC-BUTYLBENZENE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				STYRENE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				TERT-BUTYLBENZENE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				TETRACHLOROETHENE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				TOLUENE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				TRANS-1,2-DICHLOROETHENE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				TRANS-1,3-DICHLOROPROPENE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34

Validation Qualifier Data Entry Verification

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q-05																		
JJ3003	SW8260B	SW5030	N 1 5	TRICHLOROETHENE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				TRICHLOROFLUOROMETHANE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
				VINYL CHLORIDE	.025	mg/L	U	N	N	U	R		16				E066-01T	11:34
10114Q-06																		
JJ3002	SW6010B	SW3010	N 0 1	ALUMINUM	.163	mg/L	J	Y	Y	P	J		15				E089-01	21:20
				ANTIMONY	.1	mg/L	U	N	Y	U	U						E089-01	21:20
				ARSENIC	.01	mg/L	U	N	Y	U	U						E089-01	22:29
				BARIUM	.02	mg/L		Y	Y	P							E089-01	21:20
				BERYLLIUM	.001	mg/L	U	N	Y	U	U						E089-01	21:20
				CADMIUM	.01	mg/L	U	N	Y	U	U						E089-01	21:20
				CALCIUM	3.94	mg/L		Y	Y	P							E089-01	21:20
				CHROMIUM	.01	mg/L	U	N	Y	U	U						E089-01	21:20
				COBALT	.0145	mg/L	J	Y	Y	P	J		15				E089-01	21:20
				COPPER	.02	mg/L	U	N	Y	U	U						E089-01	21:20
				IRON	3.17	mg/L		Y	Y	P							E089-01	21:20
				LEAD	.01	mg/L	U	N	Y	U	U						E089-01	22:29
				MAGNESIUM	.242	mg/L	J	Y	Y	P	J		15				E089-01	21:20
				MANGANESE	.0206	mg/L		Y	Y	P							E089-01	21:20
				NICKEL	.0127	mg/L	J	Y	Y	P	J		15				E089-01	21:20
				POTASSIUM	2.12	mg/L	J	Y	Y	P	J		15				E089-01	21:20
				SELENIUM	.01	mg/L	U	N	Y	U	U						E089-01	22:29
				SILVER	.01	mg/L	U	N	Y	U	U						E089-01	21:20
				SODIUM	9.02	mg/L		Y	Y	P							E089-01	21:20
				THALLIUM	.01	mg/L	U	N	Y	U	U						E089-01	22:29
				VANADIUM	.01	mg/L	U	N	Y	U	U						E089-01	21:20
				ZINC	.00583	mg/L	J	Y	Y	P	J		15				E089-01	21:20
	SW7470A	TOTAL	N 0 1	MERCURY	.0005	mg/L	U	N	Y	U	U						E089-01	11:03
JJ3002	SW8330	METHOD	N 0 1	1,3,5-TNB	.0004	mg/L	U	N	Y	U	U						E089-01	06:43
				1,3-DNB	.0004	mg/L	U	N	Y	U	U						E089-01	06:43
				2,4,6-TNT	.0004	mg/L	U	N	Y	U	U						E089-01	06:43
				2,4-DNT	.0004	mg/L	U	N	Y	U	U						E089-01	06:43
				2,6-DNT	.0004	mg/L	U	N	Y	U	U						E089-01	06:43
				2-AM-4,6-DNT	.0004	mg/L	U	N	Y	U	U						E089-01	06:43
				2-NITROTOLUENE	.0004	mg/L	U	N	Y	U	U						E089-01	06:43
				3-NITROTOLUENE	.0004	mg/L	U	N	Y	U	U						E089-01	06:43
				4-AM-2,6-DNT	.0004	mg/L	U	N	Y	U	U						E089-01	06:43
				4-NITROTOLUENE	.0004	mg/L	U	N	Y	U	U						E089-01	06:43
				HMX	.001	mg/L	U	N	Y	U	U						E089-01	06:43
				NITROBENZENE	.0004	mg/L	U	N	Y	U	U						E089-01	06:43

Validation Qualifier Data Entry Verification

Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt	REX	Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q-06																				
JJ3002	SW8330	METHOD	N	0	1	RDX	.0004	mg/L	U	N	Y	U	U						E089-01	06:43
						TETRYL	.0004	mg/L	U	N	Y	U	U						E089-01	06:43
JJ3002	E314.0	NONE	N	0	1	PERCHLORATE	.005	mg/L	U	N	Y	U	U						E089-01	16:11
JJ3002	SW8260B	SW5030	N	0	1	1,1,1,2-TETRACHLOROETHANE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						1,1,1-TRICHLOROETHANE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						1,1,2,2-TETRACHLOROETHANE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						1,1,2-TRICHLOROETHANE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						1,1-DICHLOROETHANE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						1,1-DICHLOROETHENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						1,1-DICHLOROPROPENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						1,2,3-TRICHLOROBENZENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						1,2,3-TRICHLOROPROPANE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						1,2,4-TRICHLOROBENZENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						1,2,4-TRIMETHYLBENZENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						1,2-DIBROMO-3-CHLOROPROPANE	.01	mg/L	U	N	Y	U	U						E089-01	15:34
						1,2-DIBROMOETHANE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						1,2-DICHLOROBENZENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						1,2-DICHLOROETHANE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						1,2-DICHLOROPROPANE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						1,3,5-TRIMETHYLBENZENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						1,3-DICHLOROBENZENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						1,3-DICHLOROPROPANE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						1,4-DICHLOROBENZENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						2,2-DICHLOROPROPANE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						2-BUTANONE	.02	mg/L	U	N	Y	U	U						E089-01	15:34
						2-CHLOROTOLUENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						2-HEXANONE	.02	mg/L	U	N	Y	U	U						E089-01	15:34
						4-CHLOROTOLUENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						4-METHYL-2-PENTANONE	.01	mg/L	U	N	Y	U	U						E089-01	15:34
						ACETONE	1.1	mg/L	E	Y	N	P	R		16				E089-01	15:34
						BENZENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						BROMOBENZENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						BROMOCHLOROMETHANE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						BROMODICHLOROMETHANE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						BROMOFORM	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						BROMOMETHANE	.005	mg/L	U	N	Y	U	UJ		05B				E089-01	15:34
						CARBON DISULFIDE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						CARBON TETRACHLORIDE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						CHLOROBENZENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
						CHLOROETHANE	.005	mg/L	U	N	Y	U	U						E089-01	15:34

Validation Qualifier Data Entry Verification

Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q-06																		
JJ3002	SW8260B	SW5030	N 0 1	CHLOROFORM	.00067	mg/L	J	Y	Y	F	B		06C	15			E089-01	15:34
				CHLOROMETHANE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				CIS-1,2-DICHLOROETHENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				CIS-1,3-DICHLOROPROPENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				DIBROMOCHLOROMETHANE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				DIBROMOMETHANE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				DICHLORODIFLUOROMETHANE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				ETHYLBENZENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				HEXACHLOROBUTADIENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				ISOPROPYL BENZENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				M/P-XYLENES	.01	mg/L	U	N	Y	U	U						E089-01	15:34
				METHYLENE CHLORIDE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				N-BUTYLBENZENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				N-PROPYLBENZENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				NAPHTHALENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				O-XYLENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				P-ISOPROPYLTOLUENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				SEC-BUTYLBENZENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				STYRENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				TERT-BUTYLBENZENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				TETRACHLOROETHENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				TOLUENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				TRANS-1,2-DICHLOROETHENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				TRANS-1,3-DICHLOROPROPENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				TRICHLOROETHENE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				TRICHLOROFLUOROMETHANE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
				VINYL CHLORIDE	.005	mg/L	U	N	Y	U	U						E089-01	15:34
	SW8260B	SW5030	N 1 5	1,1,1,2-TETRACHLOROETHANE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				1,1,1-TRICHLOROETHANE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				1,1,2,2-TETRACHLOROETHANE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				1,1,2-TRICHLOROETHANE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				1,1-DICHLOROETHANE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				1,1-DICHLOROETHENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				1,1-DICHLOROPROPENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				1,2,3-TRICHLOROBENZENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				1,2,3-TRICHLOROPROPANE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				1,2,4-TRICHLOROBENZENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				1,2,4-TRIMETHYLBENZENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				1,2-DIBROMO-3-CHLOROPROPANE	.05	mg/L	U	N	N	U	R		16				E089-01T	22:23
				1,2-DIBROMOETHANE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23

Validation Qualifier Data Entry Verification

Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q-06																		
JJ3002	SW8260B	SW5030	N 1 5	1,2-DICHLOROBENZENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				1,2-DICHLOROETHANE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				1,2-DICHLOROPROPANE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				1,3,5-TRIMETHYLBENZENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				1,3-DICHLOROBENZENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				1,3-DICHLOROPROPANE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				1,4-DICHLOROBENZENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				2,2-DICHLOROPROPANE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				2-BUTANONE	.1	mg/L	U	N	N	U	R		16				E089-01T	22:23
				2-CHLOROTOLUENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				2-HEXANONE	.1	mg/L	U	N	N	U	R		16				E089-01T	22:23
				4-CHLOROTOLUENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				4-METHYL-2-PENTANONE	.05	mg/L	U	N	N	U	R		16				E089-01T	22:23
				ACETONE	1.3	mg/L		Y	Y	P							E089-01T	22:23
				BENZENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				BROMOBENZENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				BROMOCHLOROMETHANE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				BROMODICHLOROMETHANE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				BROMOFORM	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				BROMOMETHANE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				CARBON DISULFIDE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				CARBON TETRACHLORIDE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				CHLOROBENZENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				CHLOROETHANE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				CHLOROFORM	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				CHLOROMETHANE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				CIS-1,2-DICHLOROETHENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				CIS-1,3-DICHLOROPROPENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				DIBROMOCHLOROMETHANE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				DIBROMOMETHANE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				DICHLORODIFLUOROMETHANE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				ETHYLBENZENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				HEXACHLOROBUTADIENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				ISOPROPYL BENZENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				M/P-XYLENES	.05	mg/L	U	N	N	U	R		16				E089-01T	22:23
				METHYLENE CHLORIDE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				N-BUTYLBENZENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				N-PROPYLBENZENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				NAPHTHALENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				O-XYLENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23

Validation Qualifier Data Entry Verification

Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q-06																		
JJ3002	SW8260B	SW5030	N 1 5	P-ISOPROPYLTOLUENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				SEC-BUTYLBENZENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				STYRENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				TERT-BUTYLBENZENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				TETRACHLOROETHENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				TOLUENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				TRANS-1,2-DICHLOROETHENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				TRANS-1,3-DICHLOROPROPENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				TRICHLOROETHENE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				TRICHLOROFLUOROMETHANE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
				VINYL CHLORIDE	.025	mg/L	U	N	N	U	R		16				E089-01T	22:23
10114Q-07																		
JJ3001	SW6010B	SW3010	N 0 1	ALUMINUM	.2	mg/L	U	N	Y	U	U						E148-02	21:33
				ANTIMONY	.1	mg/L	U	N	Y	U	U						E148-02	21:33
				ARSENIC	.01	mg/L	U	N	Y	U	U						E148-02	21:33
				BARIUM	.0075	mg/L	J	Y	Y	P	J		15				E148-02	21:33
				BERYLLIUM	.001	mg/L	U	N	Y	U	U						E148-02	21:33
				CADMIUM	.01	mg/L	U	N	Y	U	U						E148-02	21:33
				CALCIUM	.767	mg/L	J	Y	Y	P	J		15				E148-02	21:33
				CHROMIUM	.01	mg/L	U	N	Y	U	U						E148-02	21:33
				COBALT	.02	mg/L	U	N	Y	U	U						E148-02	21:33
				COPPER	.02	mg/L	U	N	Y	U	U						E148-02	21:33
				IRON	.0522	mg/L	J	Y	Y	F	B		06C	15			E148-02	21:33
				LEAD	.01	mg/L	U	N	Y	U	U						E148-02	21:33
				MAGNESIUM	.421	mg/L	J	Y	Y	P	J		15				E148-02	21:33
				MANGANESE	.0196	mg/L		Y	Y	P							E148-02	21:33
				NICKEL	.0119	mg/L	J	Y	Y	F	B		06B	15			E148-02	21:33
				POTASSIUM	5	mg/L	U	N	Y	U	U						E148-02	21:33
				SELENIUM	.01	mg/L	U	N	Y	U	U						E148-02	21:33
				SILVER	.01	mg/L	U	N	Y	U	U						E148-02	21:33
				SODIUM	2.35	mg/L		Y	Y	P							E148-02	21:33
				THALLIUM	.01	mg/L	U	N	Y	U	U						E148-02	21:33
				VANADIUM	.01	mg/L	U	N	Y	U	U						E148-02	21:33
				ZINC	.02	mg/L	U	N	Y	U	U						E148-02	21:33
	SW7470A	TOTAL	N 0 1	MERCURY	.0005	mg/L	U	N	Y	U	U						E148-02	10:59
JJ3001	SW8330	METHOD	N 0 1	1,3,5-TNB	.0004	mg/L	U	N	Y	U	U						E148-02	00:28
				1,3-DNB	.0004	mg/L	U	N	Y	U	U						E148-02	00:28
				2,4,6-TNT	.0004	mg/L	U	N	Y	U	U						E148-02	00:28
				2,4-DNT	.0004	mg/L	U	N	Y	U	U						E148-02	00:28

Validation Qualifier Data Entry Verification

Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q-07																		
JJ3001	SW8330	METHOD	N 0 1	2,6-DNT	.0004	mg/L	U	N	Y	U	U						E148-02	00:28
				2-AM-4,6-DNT	.0004	mg/L	U	N	Y	U	U						E148-02	00:28
				2-NITROTOLUENE	.0004	mg/L	U	N	Y	U	U						E148-02	00:28
				3-NITROTOLUENE	.0004	mg/L	U	N	Y	U	U						E148-02	00:28
				4-AM-2,6-DNT	.0004	mg/L	U	N	Y	U	U						E148-02	00:28
				4-NITROTOLUENE	.0004	mg/L	U	N	Y	U	U						E148-02	00:28
				HMX	.001	mg/L	U	N	Y	U	U						E148-02	00:28
				NITROBENZENE	.0004	mg/L	U	N	Y	U	U						E148-02	00:28
				RDX	.0004	mg/L	U	N	Y	U	U						E148-02	00:28
				TETRYL	.0004	mg/L	U	N	Y	U	U						E148-02	00:28
JJ3001	E314.0	NONE	N 0 1	PERCHLORATE	.005	mg/L	U	N	Y	U	U						E148-02	20:14
JJ3001	SW8260B	SW5030	N 0 1	1,1,1,2-TETRACHLOROETHANE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				1,1,1-TRICHLOROETHANE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				1,1,2,2-TETRACHLOROETHANE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				1,1,2-TRICHLOROETHANE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				1,1-DICHLOROETHANE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				1,1-DICHLOROETHENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				1,1-DICHLOROPROPENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				1,2,3-TRICHLOROBENZENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				1,2,3-TRICHLOROPROPANE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				1,2,4-TRICHLOROBENZENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				1,2,4-TRIMETHYLBENZENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				1,2-DIBROMO-3-CHLOROPROPANE	.01	mg/L	U	N	Y	U	U						E148-02	22:50
				1,2-DIBROMOETHANE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				1,2-DICHLOROBENZENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				1,2-DICHLOROETHANE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				1,2-DICHLOROPROPANE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				1,3,5-TRIMETHYLBENZENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				1,3-DICHLOROBENZENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				1,3-DICHLOROPROPANE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				1,4-DICHLOROBENZENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				2,2-DICHLOROPROPANE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				2-BUTANONE	.02	mg/L	U	N	Y	U	U						E148-02	22:50
				2-CHLOROTOLUENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				2-HEXANONE	.02	mg/L	U	N	Y	U	U						E148-02	22:50
				4-CHLOROTOLUENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				4-METHYL-2-PENTANONE	.01	mg/L	U	N	Y	U	U						E148-02	22:50
				ACETONE	.02	mg/L	U	N	Y	U	U						E148-02	22:50
				BENZENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				BROMOBENZENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50

Validation Qualifier Data Entry Verification

Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q-07																		
JJ3001	SW8260B	SW5030	N 0 1	BROMOCHLOROMETHANE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				BROMODICHLOROMETHANE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				BROMOFORM	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				BROMOMETHANE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				CARBON DISULFIDE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				CARBON TETRACHLORIDE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				CHLOROBENZENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				CHLOROETHANE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				CHLOROFORM	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				CHLOROMETHANE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				CIS-1,2-DICHLOROETHENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				CIS-1,3-DICHLOROPROPENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				DIBROMOCHLOROMETHANE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				DIBROMOMETHANE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				DICHLORODIFLUOROMETHANE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				ETHYLBENZENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				HEXACHLOROBUTADIENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				ISOPROPYL BENZENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				M/P-XYLENES	.01	mg/L	U	N	Y	U	U						E148-02	22:50
				METHYLENE CHLORIDE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				N-BUTYLBENZENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				N-PROPYLBENZENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				NAPHTHALENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				O-XYLENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				P-ISOPROPYLTOLUENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				SEC-BUTYLBENZENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				STYRENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				TERT-BUTYLBENZENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				TETRACHLOROETHENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				TOLUENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				TRANS-1,2-DICHLOROETHENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				TRANS-1,3-DICHLOROPROPENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				TRICHLOROETHENE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				TRICHLOROFLUOROMETHANE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
				VINYL CHLORIDE	.005	mg/L	U	N	Y	U	U						E148-02	22:50
10114Q01																		
JJ0001	SW6010B	SW3050	N 0 1	ALUMINUM	5390	mg/kg		Y	Y	P							L130-01	18:30
				ANTIMONY	11.2	mg/kg	U	N	Y	U	UJ		08A				L130-01	18:30
				ARSENIC	.851	mg/kg	J	Y	Y	F	B		06B	15			L130-01	00:21
				BARIUM	18.3	mg/kg		Y	Y	P							L130-01	18:30

Validation Qualifier Data Entry Verification

Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q01																		
JJ0001	SW6010B	SW3050	N 0 1	BERYLLIUM	.107	mg/kg	J	Y	Y	P	J		15				L130-01	18:30
				CADMIUM	.558	mg/kg	U	N	Y	U	U						L130-01	18:30
				CALCIUM	65.3	mg/kg	J	Y	Y	P	J		15				L130-01	18:30
				CHROMIUM	5	mg/kg		Y	Y	P							L130-01	18:30
				COBALT	.771	mg/kg	J	Y	Y	P	J		15				L130-01	18:30
				COPPER	1.11	mg/kg	J	Y	Y	P	J		15				L130-01	18:30
				IRON	3460	mg/kg		Y	Y	P	J		08A				L130-01	18:30
				LEAD	3.82	mg/kg		Y	Y	P							L130-01	00:21
				MAGNESIUM	188	mg/kg		Y	Y	P							L130-01	18:30
				MANGANESE	16.5	mg/kg		Y	Y	P							L130-01	18:30
				NICKEL	2.01	mg/kg	J	Y	Y	P	J		15				L130-01	18:30
				POTASSIUM	558	mg/kg	U	N	Y	U	U						L130-01	18:30
				SELENIUM	1.12	mg/kg	U	N	Y	U	U						L130-01	00:21
				SILVER	1.12	mg/kg	U	N	Y	U	U						L130-01	18:30
				SODIUM	112	mg/kg	U	N	Y	U	U						L130-01	18:30
				THALLIUM	2.23	mg/kg	U	N	Y	U	U						L130-01	00:21
				VANADIUM	7.3	mg/kg		Y	Y	P							L130-01	18:30
				ZINC	7.48	mg/kg		Y	Y	P	J		13				L130-01	18:30
	SW7471A	TOTAL	N 0 1	MERCURY	.112	mg/kg	U	N	Y	U	U						L130-01	11:47
JJ0002	SW6010B	SW3050	N 0 1	ALUMINUM	6620	mg/kg		Y	Y	P							L130-02	18:36
				ANTIMONY	10.9	mg/kg	U	N	Y	U	UJ		08A				L130-02	18:36
				ARSENIC	2.18	mg/kg		Y	Y	P							L130-02	00:26
				BARIUM	6.42	mg/kg		Y	Y	P							L130-02	18:36
				BERYLLIUM	.0911	mg/kg	J	Y	Y	P	J		15				L130-02	18:36
				CADMIUM	.543	mg/kg	U	N	Y	U	U						L130-02	18:36
				CALCIUM	25	mg/kg	J	Y	Y	P	J		15				L130-02	18:36
				CHROMIUM	15.2	mg/kg		Y	Y	P							L130-02	18:36
				COBALT	2.17	mg/kg	U	N	Y	U	U						L130-02	18:36
				COPPER	2.67	mg/kg		Y	Y	P							L130-02	18:36
				IRON	16200	mg/kg		Y	Y	P	J		08A				L130-02	18:36
				LEAD	3.2	mg/kg		Y	Y	P							L130-02	00:26
				MAGNESIUM	87.1	mg/kg	J	Y	Y	P	J		15				L130-02	18:36
				MANGANESE	10.4	mg/kg		Y	Y	P							L130-02	18:36
				NICKEL	1.07	mg/kg	J	Y	Y	P	J		15				L130-02	18:36
				POTASSIUM	543	mg/kg	U	N	Y	U	U						L130-02	18:36
				SELENIUM	1.09	mg/kg	U	N	Y	U	U						L130-02	00:26
				SILVER	1.09	mg/kg	U	N	Y	U	U						L130-02	18:36
				SODIUM	109	mg/kg	U	N	Y	U	U						L130-02	18:36
				THALLIUM	2.17	mg/kg	U	N	Y	U	U						L130-02	00:26
				VANADIUM	26.7	mg/kg		Y	Y	P							L130-02	18:36

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Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q01																		
JJ0002	SW6010B	SW3050	N 0 1	ZINC	4.25	mg/kg		Y	Y	P	J		13				L130-02	18:36
	SW7471A	TOTAL	N 0 1	MERCURY	.109	mg/kg	U	N	Y	U	U						L130-02	11:49
JJ0003	SW6010B	SW3050	N 0 1	ALUMINUM	5700	mg/kg		Y	Y	P							L130-03	19:22
				ANTIMONY	11.5	mg/kg	U	N	Y	U	UJ		08A				L130-03	19:22
				ARSENIC	1.32	mg/kg		Y	Y	F	B		06C				L130-03	00:31
				BARIUM	24.3	mg/kg		Y	Y	P							L130-03	19:22
				BERYLLIUM	.0865	mg/kg	J	Y	Y	P	J		15				L130-03	19:22
				CADMIUM	.576	mg/kg	U	N	Y	U	U						L130-03	19:22
				CALCIUM	203	mg/kg		Y	Y	P							L130-03	19:22
				CHROMIUM	8.28	mg/kg		Y	Y	P							L130-03	19:22
				COBALT	2.3	mg/kg	U	N	Y	U	U						L130-03	19:22
				COPPER	2.71	mg/kg		Y	Y	P							L130-03	19:22
				IRON	5930	mg/kg		Y	Y	P	J		08A				L130-03	19:22
				LEAD	13.5	mg/kg		Y	Y	P							L130-03	00:31
				MAGNESIUM	109	mg/kg	J	Y	Y	P	J		15				L130-03	19:22
				MANGANESE	47	mg/kg		Y	Y	P							L130-03	19:22
				NICKEL	1.34	mg/kg	J	Y	Y	P	J		15				L130-03	19:22
				POTASSIUM	576	mg/kg	U	N	Y	U	U						L130-03	19:22
				SELENIUM	1.15	mg/kg	U	N	Y	U	U						L130-03	00:31
				SILVER	1.15	mg/kg	U	N	Y	U	U						L130-03	19:22
				SODIUM	115	mg/kg	U	N	Y	U	U						L130-03	19:22
				THALLIUM	2.3	mg/kg	U	N	Y	U	U						L130-03	00:31
				VANADIUM	14.8	mg/kg		Y	Y	P							L130-03	19:22
				ZINC	9.97	mg/kg		Y	Y	P	J		13				L130-03	19:22
	SW7471A	TOTAL	N 0 1	MERCURY	.115	mg/kg	U	N	Y	U	U						L130-03	11:51
JJ0004	SW6010B	SW3050	N 0 1	ALUMINUM	1700	mg/kg		Y	Y	P							L130-04	19:27
				ANTIMONY	10.5	mg/kg	U	N	Y	U	UJ		08A				L130-04	19:27
				ARSENIC	.371	mg/kg	J	Y	Y	F	B		06B	15			L130-04	00:37
				BARIUM	6.79	mg/kg		Y	Y	P							L130-04	19:27
				BERYLLIUM	.0375	mg/kg	J	Y	Y	P	J		15				L130-04	19:27
				CADMIUM	.527	mg/kg	U	N	Y	U	U						L130-04	19:27
				CALCIUM	47.5	mg/kg	J	Y	Y	P	J		15				L130-04	19:27
				CHROMIUM	5.58	mg/kg		Y	Y	P							L130-04	19:27
				COBALT	2.11	mg/kg	U	N	Y	U	U						L130-04	19:27
				COPPER	.853	mg/kg	J	Y	Y	P	J		15				L130-04	19:27
				IRON	2730	mg/kg		Y	Y	P	J		08A				L130-04	19:27
				LEAD	5.41	mg/kg		Y	Y	P							L130-04	00:37
				MAGNESIUM	33.5	mg/kg	J	Y	Y	P	J		15				L130-04	19:27
				MANGANESE	24.3	mg/kg		Y	Y	P							L130-04	19:27
				NICKEL	5.6	mg/kg		Y	Y	P							L130-04	19:27

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Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q01																		
JJ0004	SW6010B	SW3050	N 0 1	POTASSIUM	527	mg/kg	U	N	Y	U	U						L130-04	19:27
				SELENIUM	1.05	mg/kg	U	N	Y	U	U						L130-04	00:37
				SILVER	1.05	mg/kg	U	N	Y	U	U						L130-04	19:27
				SODIUM	105	mg/kg	U	N	Y	U	U						L130-04	19:27
				THALLIUM	2.11	mg/kg	U	N	Y	U	U						L130-04	00:37
				VANADIUM	4.42	mg/kg		Y	Y	P							L130-04	19:27
				ZINC	3.36	mg/kg		Y	Y	P	J		13				L130-04	19:27
	SW7471A	TOTAL	N 0 1	MERCURY	.105	mg/kg	U	N	Y	U	U						L130-04	11:54
JJ0005	SW6010B	SW3050	N 0 1	ALUMINUM	9120	mg/kg		Y	Y	P							L130-05	19:32
				ANTIMONY	12.7	mg/kg	U	N	Y	U	UJ		08A				L130-05	19:32
				ARSENIC	2.59	mg/kg		Y	Y	P							L130-05	00:42
				BARIUM	61.4	mg/kg		Y	Y	P							L130-05	19:32
				BERYLLIUM	.549	mg/kg	J	Y	Y	P	J		15				L130-05	19:32
				CADMIUM	.635	mg/kg	U	N	Y	U	U						L130-05	19:32
				CALCIUM	149	mg/kg		Y	Y	P							L130-05	19:32
				CHROMIUM	8.2	mg/kg		Y	Y	P							L130-05	19:32
				COBALT	2.79	mg/kg		Y	Y	P							L130-05	19:32
				COPPER	13.3	mg/kg		Y	Y	P							L130-05	19:32
				IRON	7970	mg/kg		Y	Y	P	J		08A				L130-05	19:32
				LEAD	31.9	mg/kg		Y	Y	P							L130-05	00:42
				MAGNESIUM	201	mg/kg		Y	Y	P							L130-05	19:32
				MANGANESE	399	mg/kg		Y	Y	P							L130-05	19:32
				NICKEL	2.17	mg/kg	J	Y	Y	P	J		15				L130-05	19:32
				POTASSIUM	138	mg/kg	J	Y	Y	F	B		06B	15			L130-05	19:32
				SELENIUM	1.27	mg/kg	U	N	Y	U	U						L130-05	00:42
				SILVER	1.27	mg/kg	U	N	Y	U	U						L130-05	19:32
				SODIUM	127	mg/kg	U	N	Y	U	U						L130-05	19:32
				THALLIUM	2.54	mg/kg	U	N	Y	U	U						L130-05	00:42
				VANADIUM	14.6	mg/kg		Y	Y	P							L130-05	19:32
				ZINC	67.1	mg/kg		Y	Y	P	J		13				L130-05	19:32
	SW7471A	TOTAL	N 0 1	MERCURY	.127	mg/kg	U	N	Y	U	U						L130-05	12:04
JJ0006	SW6010B	SW3050	N 0 1	ALUMINUM	5300	mg/kg		Y	Y	P							L130-06	19:37
				ANTIMONY	10.9	mg/kg	U	N	Y	U	UJ		08A				L130-06	19:37
				ARSENIC	1.41	mg/kg		Y	Y	F	B		06B				L130-06	00:47
				BARIUM	10.7	mg/kg		Y	Y	P							L130-06	19:37
				BERYLLIUM	.0801	mg/kg	J	Y	Y	P	J		15				L130-06	19:37
				CADMIUM	.546	mg/kg	U	N	Y	U	U						L130-06	19:37
				CALCIUM	44.4	mg/kg	J	Y	Y	P	J		15				L130-06	19:37
				CHROMIUM	11.1	mg/kg		Y	Y	P							L130-06	19:37
				COBALT	2.18	mg/kg	U	N	Y	U	U						L130-06	19:37

Validation Qualifier Data Entry Verification

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q01																		
JJ0006	SW6010B	SW3050	N 0 1	COPPER	2.18	mg/kg	J	Y	Y	P	J		15				L130-06	19:37
				IRON	10700	mg/kg		Y	Y	P	J		08A				L130-06	19:37
				LEAD	4.12	mg/kg		Y	Y	P							L130-06	00:47
				MAGNESIUM	114	mg/kg		Y	Y	P							L130-06	19:37
				MANGANESE	13.8	mg/kg		Y	Y	P							L130-06	19:37
				NICKEL	1.87	mg/kg	J	Y	Y	P	J		15				L130-06	19:37
				POTASSIUM	546	mg/kg	U	N	Y	U	U						L130-06	19:37
				SELENIUM	1.09	mg/kg	U	N	Y	U	U						L130-06	00:47
				SILVER	1.09	mg/kg	U	N	Y	U	U						L130-06	19:37
				SODIUM	109	mg/kg	U	N	Y	U	U						L130-06	19:37
				THALLIUM	2.18	mg/kg	U	N	Y	U	U						L130-06	00:47
				VANADIUM	18.3	mg/kg		Y	Y	P							L130-06	19:37
				ZINC	6.07	mg/kg		Y	Y	P	J		13				L130-06	19:37
	SW7471A	TOTAL	N 0 1	MERCURY	.109	mg/kg	U	N	Y	U	U						L130-06	12:06
JJ0007	SW6010B	SW3050	N 0 1	ALUMINUM	5510	mg/kg		Y	Y								L130-07	19:42
				ANTIMONY	10.9	mg/kg	U	N	Y		UJ		08A				L130-07	19:42
				ARSENIC	1.59	mg/kg		Y	Y	F	B		06B				L130-07	00:52
				BARIUM	10.4	mg/kg		Y	Y								L130-07	19:42
				BERYLLIUM	.0822	mg/kg	J	Y	Y		J		15				L130-07	19:42
				CADMIUM	.545	mg/kg	U	N	Y		U						L130-07	19:42
				CALCIUM	37.9	mg/kg	J	Y	Y		J		15				L130-07	19:42
				CHROMIUM	10.6	mg/kg		Y	Y								L130-07	19:42
				COBALT	.518	mg/kg	J	Y	Y		J		15				L130-07	19:42
				COPPER	2.09	mg/kg	J	Y	Y		J		15				L130-07	19:42
				IRON	10100	mg/kg		Y	Y		J		08A				L130-07	19:42
				LEAD	3.98	mg/kg		Y	Y								L130-07	00:52
				MAGNESIUM	132	mg/kg		Y	Y								L130-07	19:42
				MANGANESE	10.7	mg/kg		Y	Y								L130-07	19:42
				NICKEL	1.43	mg/kg	J	Y	Y		J		15				L130-07	19:42
				POTASSIUM	185	mg/kg	J	Y	Y	F	B		06B	15			L130-07	19:42
				SELENIUM	1.09	mg/kg	U	N	Y		U						L130-07	00:52
				SILVER	1.09	mg/kg	U	N	Y		U						L130-07	19:42
				SODIUM	109	mg/kg	U	N	Y		U						L130-07	19:42
				THALLIUM	.648	mg/kg	J	Y	Y	F	B		06B	15			L130-07	00:52
				VANADIUM	17.3	mg/kg		Y	Y								L130-07	19:42
				ZINC	5.88	mg/kg		Y	Y		J		13				L130-07	19:42
	SW7471A	TOTAL	N 0 1	MERCURY	.109	mg/kg	U	N	Y		U						L130-07	12:08
JJ0008	SW6010B	SW3050	N 0 1	ALUMINUM	4660	mg/kg		Y	Y	P							L130-08	19:47
				ANTIMONY	10.9	mg/kg	U	N	Y	U	UJ		08A				L130-08	19:47
				ARSENIC	2.35	mg/kg		Y	Y	P							L130-08	01:07

Validation Qualifier Data Entry Verification

Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q01																		
JJ0008	SW6010B	SW3050	N 0 1	BARIUM	10.2	mg/kg		Y	Y	P							L130-08	19:47
				BERYLLIUM	.0783	mg/kg	J	Y	Y	P	J		15				L130-08	19:47
				CADMIUM	.543	mg/kg	U	N	Y	U	U						L130-08	19:47
				CALCIUM	84.2	mg/kg	J	Y	Y	P	J		15				L130-08	19:47
				CHROMIUM	7.29	mg/kg		Y	Y	P							L130-08	19:47
				COBALT	.945	mg/kg	J	Y	Y	P	J		15				L130-08	19:47
				COPPER	8.37	mg/kg		Y	Y	P							L130-08	19:47
				IRON	9020	mg/kg		Y	Y	P	J		08A				L130-08	19:47
				LEAD	38.3	mg/kg		Y	Y	P							L130-08	01:07
				MAGNESIUM	113	mg/kg		Y	Y	P							L130-08	19:47
				MANGANESE	40.5	mg/kg		Y	Y	P							L130-08	19:47
				NICKEL	1.01	mg/kg	J	Y	Y	P	J		15				L130-08	19:47
				POTASSIUM	543	mg/kg	U	N	Y	U	U						L130-08	19:47
				SELENIUM	.46	mg/kg	J	Y	Y	P	J		15				L130-08	01:07
				SILVER	1.09	mg/kg	U	N	Y	U	U						L130-08	19:47
				SODIUM	109	mg/kg	U	N	Y	U	U						L130-08	19:47
				THALLIUM	2.17	mg/kg	U	N	Y	U	U						L130-08	01:07
				VANADIUM	10.3	mg/kg		Y	Y	P							L130-08	19:47
				ZINC	21.9	mg/kg		Y	Y	P	J		13				L130-08	19:47
	SW7471A	TOTAL	N 0 1	MERCURY	.109	mg/kg	U	N	Y	U	U						L130-08	12:11
JJ0009	SW6010B	SW3050	N 0 1	ALUMINUM	1540	mg/kg		Y	Y	P							L130-09	19:52
				ANTIMONY	11	mg/kg	U	N	Y	U	U		08A				L130-09	19:52
				ARSENIC	.764	mg/kg	J	Y	Y	P	J		15				L130-09	01:12
				BARIUM	1.1	mg/kg		Y	Y	P							L130-09	19:52
				BERYLLIUM	1.1	mg/kg	U	N	Y	U	U						L130-09	19:52
				CADMIUM	.548	mg/kg	U	N	Y	U	U						L130-09	19:52
				CALCIUM	21.7	mg/kg	J	Y	Y	P	J		15				L130-09	19:52
				CHROMIUM	3.8	mg/kg		Y	Y	P							L130-09	19:52
				COBALT	2.19	mg/kg	U	N	Y	U	U						L130-09	19:52
				COPPER	2.19	mg/kg	U	N	Y	U	U						L130-09	19:52
				IRON	2680	mg/kg		Y	Y	P	J		08A				L130-09	19:52
				LEAD	1.17	mg/kg		Y	Y	P							L130-09	01:12
				MAGNESIUM	19.2	mg/kg	J	Y	Y	P	J		15				L130-09	19:52
				MANGANESE	1.22	mg/kg		Y	Y	P							L130-09	19:52
				NICKEL	2.19	mg/kg	U	N	Y	U	U						L130-09	19:52
				POTASSIUM	548	mg/kg	U	N	Y	U	U						L130-09	19:52
				SELENIUM	1.1	mg/kg	U	N	Y	U	U						L130-09	01:12
				SILVER	1.1	mg/kg	U	N	Y	U	U						L130-09	19:52
				SODIUM	110	mg/kg	U	N	Y	U	U						L130-09	19:52
				THALLIUM	2.19	mg/kg	U	N	Y	U	U						L130-09	01:12

Validation Qualifier Data Entry Verification

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q01																		
JJ0009	SW6010B	SW3050	N 0 1	VANADIUM	5.69	mg/kg		Y	Y	P							L130-09	19:52
				ZINC	1.24	mg/kg	J	Y	Y	P	J		13	15			L130-09	19:52
	SW7471A	TOTAL	N 0 1	MERCURY	.11	mg/kg	U	N	Y	U	U						L130-09	12:13
JJ0010	SW6010B	SW3050	N 0 1	ALUMINUM	6220	mg/kg		Y	Y	P							L130-10	19:57
				ANTIMONY	11.5	mg/kg	U	N	Y	U	UJ		08A				L130-10	19:57
				ARSENIC	2.1	mg/kg		Y	Y	P							L130-10	01:17
				BARIUM	24	mg/kg		Y	Y	P							L130-10	19:57
				BERYLLIUM	.139	mg/kg	J	Y	Y	P	J		15				L130-10	19:57
				CADMIUM	.573	mg/kg	U	N	Y	U	U						L130-10	19:57
				CALCIUM	116	mg/kg		Y	Y	P							L130-10	19:57
				CHROMIUM	12.7	mg/kg		Y	Y	P							L130-10	19:57
				COBALT	1.21	mg/kg	J	Y	Y	P	J		15				L130-10	19:57
				COPPER	18.8	mg/kg		Y	Y	P							L130-10	19:57
				IRON	8350	mg/kg		Y	Y	P	J		08A				L130-10	19:57
				LEAD	385	mg/kg		Y	Y	P							L130-10	01:17
				MAGNESIUM	153	mg/kg		Y	Y	P							L130-10	19:57
				MANGANESE	25.1	mg/kg		Y	Y	P							L130-10	19:57
				NICKEL	1.69	mg/kg	J	Y	Y	P	J		15				L130-10	19:57
				POTASSIUM	573	mg/kg	U	N	Y	U	U						L130-10	19:57
				SELENIUM	.548	mg/kg	J	Y	Y	P	J		15				L130-10	01:17
				SILVER	1.15	mg/kg	U	N	Y	U	U						L130-10	19:57
				SODIUM	115	mg/kg	U	N	Y	U	U						L130-10	19:57
				THALLIUM	2.29	mg/kg	U	N	Y	U	U						L130-10	01:17
				VANADIUM	17.5	mg/kg		Y	Y	P							L130-10	19:57
				ZINC	22	mg/kg		Y	Y	P	J		13				L130-10	19:57
	SW7471A	TOTAL	N 0 1	MERCURY	.115	mg/kg	U	N	Y	U	U						L130-10	12:16
JJ0011	SW6010B	SW3050	N 0 1	ALUMINUM	6380	mg/kg		Y	Y	P							L130-11	20:02
				ANTIMONY	11.5	mg/kg	U	N	Y	U	UJ		08A				L130-11	20:02
				ARSENIC	3.35	mg/kg		Y	Y	P							L130-11	01:22
				BARIUM	12.5	mg/kg		Y	Y	P							L130-11	20:02
				BERYLLIUM	.183	mg/kg	J	Y	Y	P	J		15				L130-11	20:02
				CADMIUM	.573	mg/kg	U	N	Y	U	U						L130-11	20:02
				CALCIUM	33.4	mg/kg	J	Y	Y	P	J		15				L130-11	20:02
				CHROMIUM	19	mg/kg		Y	Y	P							L130-11	20:02
				COBALT	1.26	mg/kg	J	Y	Y	P	J		15				L130-11	20:02
				COPPER	4.23	mg/kg		Y	Y	P							L130-11	20:02
				IRON	30000	mg/kg		Y	Y	P	J		08A				L130-11	20:02
				LEAD	7.06	mg/kg		Y	Y	P							L130-11	01:22
				MAGNESIUM	117	mg/kg		Y	Y	P							L130-11	20:02
				MANGANESE	31.7	mg/kg		Y	Y	P							L130-11	20:02

Validation Qualifier Data Entry Verification

Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q01																		
JJ0011	SW6010B	SW3050	N 0 1	NICKEL	2.18	mg/kg	J	Y	Y	P	J		15				L130-11	20:02
				POTASSIUM	573	mg/kg	U	N	Y	U	U						L130-11	20:02
				SELENIUM	1.4	mg/kg		Y	Y	P							L130-11	01:22
				SILVER	1.15	mg/kg	U	N	Y	U	U						L130-11	20:02
				SODIUM	115	mg/kg	U	N	Y	U	U						L130-11	20:02
				THALLIUM	1.09	mg/kg	J	Y	Y	F	B		06B	15			L130-11	01:22
				VANADIUM	81.7	mg/kg		Y	Y	P							L130-11	20:02
				ZINC	5.92	mg/kg		Y	Y	P	J		13				L130-11	20:02
	SW7471A	TOTAL	N 0 1	MERCURY	.115	mg/kg	U	N	Y	U	U						L130-11	12:18
JJ0012	SW6010B	SW3050	N 0 1	ALUMINUM	5500	mg/kg		Y	Y	P							L144-01	18:46
				ANTIMONY	11.4	mg/kg	U	N	Y	U	UJ		08A				L144-01	18:46
				ARSENIC	1.46	mg/kg		Y	Y	P							L144-01	01:34
				BARIUM	33.3	mg/kg		Y	Y	P							L144-01	18:46
				BERYLLIUM	.159	mg/kg	J	Y	Y	P	J		15				L144-01	18:46
				CADMIUM	.571	mg/kg	U	N	Y	U	U						L144-01	18:46
				CALCIUM	222	mg/kg		Y	Y	P							L144-01	18:46
				CHROMIUM	3.7	mg/kg		Y	Y	P							L144-01	18:46
				COBALT	.455	mg/kg	J	Y	Y	P	J		15				L144-01	18:46
				COPPER	4.5	mg/kg		Y	Y	P							L144-01	18:46
				IRON	3100	mg/kg		Y	Y	P	J		08A				L144-01	18:46
				LEAD	57.2	mg/kg		Y	Y	P							L144-01	01:34
				MAGNESIUM	228	mg/kg		Y	Y	P							L144-01	18:46
				MANGANESE	133	mg/kg		Y	Y	P							L144-01	18:46
				NICKEL	2.39	mg/kg		Y	Y	P							L144-01	18:46
				POTASSIUM	571	mg/kg	U	N	Y	U	U						L144-01	18:46
				SELENIUM	.592	mg/kg	J	Y	Y	P	J		15				L144-01	01:34
				SILVER	1.14	mg/kg	U	N	Y	U	U						L144-01	18:46
				SODIUM	114	mg/kg	U	N	Y	U	U						L144-01	18:46
				THALLIUM	2.28	mg/kg	U	N	Y	U	U						L144-01	01:34
				VANADIUM	6.4	mg/kg		Y	Y	P							L144-01	18:46
				ZINC	18.7	mg/kg		Y	Y	P	J		13				L144-01	18:46
	SW7471A	TOTAL	N 0 1	MERCURY	.114	mg/kg	U	N	Y	U	U						L144-01	11:12
JJ0013	SW6010B	SW3050	N 0 1	ALUMINUM	15200	mg/kg		Y	Y	P							L144-02	18:41
				ANTIMONY	14.5	mg/kg	U	N	Y	U	UJ		08A				L144-02	18:41
				ARSENIC	3.68	mg/kg		Y	Y	P							L144-02	01:39
				BARIUM	36.9	mg/kg		Y	Y	P							L144-02	18:41
				BERYLLIUM	.163	mg/kg	J	Y	Y	P	J		15				L144-02	18:41
				CADMIUM	.726	mg/kg	U	N	Y	U	U						L144-02	18:41
				CALCIUM	61.5	mg/kg	J	Y	Y	P	J		15				L144-02	18:41
				CHROMIUM	27.3	mg/kg		Y	Y	P							L144-02	18:41

Validation Qualifier Data Entry Verification

Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q01																		
JJ0013	SW6010B	SW3050	N 0 1	COBALT	1.13	mg/kg	J	Y	Y	P	J		15				L144-02	18:41
				COPPER	5.24	mg/kg		Y	Y	P							L144-02	18:41
				IRON	23400	mg/kg		Y	Y	P	J		08A				L144-02	18:41
				LEAD	7.68	mg/kg		Y	Y	P							L144-02	01:39
				MAGNESIUM	274	mg/kg		Y	Y	P							L144-02	18:41
				MANGANESE	11.1	mg/kg		Y	Y	P							L144-02	18:41
				NICKEL	2.58	mg/kg	J	Y	Y	P	J		15				L144-02	18:41
				POTASSIUM	260	mg/kg	J	Y	Y	F	B		06B	15			L144-02	18:41
				SELENIUM	1.13	mg/kg	J	Y	Y	P	J		15				L144-02	01:39
				SILVER	1.45	mg/kg	U	N	Y	U	U						L144-02	18:41
				SODIUM	145	mg/kg	U	N	Y	U	U						L144-02	18:41
				THALLIUM	2.9	mg/kg	U	N	Y	U	U						L144-02	01:39
				VANADIUM	42	mg/kg		Y	Y	P							L144-02	18:41
				ZINC	7.64	mg/kg		Y	Y	P	J		13				L144-02	18:41
	SW7471A	TOTAL	N 0 1	MERCURY	.1	mg/kg	U	N	Y	U	U						L144-02	11:22
JJ0001	SW8330	METHOD	N 0 1	1,3,5-TNB	.4	mg/kg	U	N	Y	U	U						L130-01	18:35
				1,3-DNB	.4	mg/kg	U	N	Y	U	U						L130-01	18:35
				2,4,6-TNT	.4	mg/kg	U	N	Y	U	U						L130-01	18:35
				2,4-DNT	.4	mg/kg	U	N	Y	U	U						L130-01	18:35
				2,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-01	18:35
				2-AM-4,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-01	18:35
				2-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-01	18:35
				3-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-01	18:35
				4-AM-2,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-01	18:35
				4-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-01	18:35
				HMX	.4	mg/kg	U	N	Y	U	U						L130-01	18:35
				NITROBENZENE	.4	mg/kg	U	N	Y	U	U						L130-01	18:35
				RDX	.4	mg/kg	U	N	Y	U	U						L130-01	18:35
				TETRYL	.4	mg/kg	U	N	Y	U	U						L130-01	18:35
JJ0002	SW8330	METHOD	N 0 1	1,3,5-TNB	.4	mg/kg	U	N	Y	U	U						L130-02	19:15
				1,3-DNB	.4	mg/kg	U	N	Y	U	U						L130-02	19:15
				2,4,6-TNT	.4	mg/kg	U	N	Y	U	U						L130-02	19:15
				2,4-DNT	.4	mg/kg	U	N	Y	U	U						L130-02	19:15
				2,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-02	19:15
				2-AM-4,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-02	19:15
				2-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-02	19:15
				3-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-02	19:15
				4-AM-2,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-02	19:15
				4-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-02	19:15
				HMX	.4	mg/kg	U	N	Y	U	U						L130-02	19:15

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Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q01																		
JJ0002	SW8330	METHOD	N 0 1	NITROBENZENE	.4	mg/kg	U	N	Y	U	U						L130-02	19:15
				RDX	.4	mg/kg	U	N	Y	U	U						L130-02	19:15
				TETRYL	.4	mg/kg	U	N	Y	U	U						L130-02	19:15
JJ0003	SW8330	METHOD	N 0 1	1,3,5-TNB	.4	mg/kg	U	N	Y	U	U						L130-03	19:56
				1,3-DNB	.4	mg/kg	U	N	Y	U	U						L130-03	19:56
				2,4,6-TNT	.4	mg/kg	U	N	Y	U	U						L130-03	19:56
				2,4-DNT	.4	mg/kg	U	N	Y	U	U						L130-03	19:56
				2,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-03	19:56
				2-AM-4,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-03	19:56
				2-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-03	19:56
				3-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-03	19:56
				4-AM-2,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-03	19:56
				4-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-03	19:56
				HMX	.4	mg/kg	U	N	Y	U	U						L130-03	19:56
				NITROBENZENE	.4	mg/kg	U	N	Y	U	U						L130-03	19:56
				RDX	.4	mg/kg	U	N	Y	U	U						L130-03	19:56
				TETRYL	.4	mg/kg	U	N	Y	U	U						L130-03	19:56
JJ0004	SW8330	METHOD	N 0 1	1,3,5-TNB	.4	mg/kg	U	N	Y	U	U						L130-04	20:36
				1,3-DNB	.4	mg/kg	U	N	Y	U	U						L130-04	20:36
				2,4,6-TNT	.4	mg/kg	U	N	Y	U	U						L130-04	20:36
				2,4-DNT	.4	mg/kg	U	N	Y	U	U						L130-04	20:36
				2,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-04	20:36
				2-AM-4,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-04	20:36
				2-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-04	20:36
				3-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-04	20:36
				4-AM-2,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-04	20:36
				4-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-04	20:36
				HMX	.4	mg/kg	U	N	Y	U	U						L130-04	20:36
				NITROBENZENE	.4	mg/kg	U	N	Y	U	U						L130-04	20:36
				RDX	.4	mg/kg	U	N	Y	U	U						L130-04	20:36
				TETRYL	.4	mg/kg	U	N	Y	U	U						L130-04	20:36
JJ0005	SW8330	METHOD	N 0 1	1,3,5-TNB	.4	mg/kg	U	N	Y	U	U						L130-05	21:17
				1,3-DNB	.4	mg/kg	U	N	Y	U	U						L130-05	21:17
				2,4,6-TNT	.4	mg/kg	U	N	Y	U	U						L130-05	21:17
				2,4-DNT	.4	mg/kg	U	N	Y	U	U						L130-05	21:17
				2,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-05	21:17
				2-AM-4,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-05	21:17
				2-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-05	21:17
				3-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-05	21:17
				4-AM-2,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-05	21:17

Validation Qualifier Data Entry Verification

Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q01																		
JJ0005	SW8330	METHOD	N 0 1	4-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-05	21:17
				HMX	.4	mg/kg	U	N	Y	U	U						L130-05	21:17
				NITROBENZENE	.4	mg/kg	U	N	Y	U	U						L130-05	21:17
				RDX	.4	mg/kg	U	N	Y	U	U						L130-05	21:17
				TETRYL	.4	mg/kg	U	N	Y	U	U						L130-05	21:17
JJ0006	SW8330	METHOD	N 0 1	1,3,5-TNB	.4	mg/kg	U	N	Y	U	U						L130-06	21:57
				1,3-DNB	.4	mg/kg	U	N	Y	U	U						L130-06	21:57
				2,4,6-TNT	.4	mg/kg	U	N	Y	U	U						L130-06	21:57
				2,4-DNT	.4	mg/kg	U	N	Y	U	U						L130-06	21:57
				2,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-06	21:57
				2-AM-4,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-06	21:57
				2-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-06	21:57
				3-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-06	21:57
				4-AM-2,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-06	21:57
				4-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-06	21:57
				HMX	.4	mg/kg	U	N	Y	U	U						L130-06	21:57
				NITROBENZENE	.4	mg/kg	U	N	Y	U	U						L130-06	21:57
				RDX	.4	mg/kg	U	N	Y	U	U						L130-06	21:57
				TETRYL	.4	mg/kg	U	N	Y	U	U						L130-06	21:57
JJ0007	SW8330	METHOD	N 0 1	1,3,5-TNB	.4	mg/kg	U	N	Y		U						L130-07	22:37
				1,3-DNB	.4	mg/kg	U	N	Y		U						L130-07	22:37
				2,4,6-TNT	.4	mg/kg	U	N	Y		U						L130-07	22:37
				2,4-DNT	.4	mg/kg	U	N	Y		U						L130-07	22:37
				2,6-DNT	.4	mg/kg	U	N	Y		U						L130-07	22:37
				2-AM-4,6-DNT	.4	mg/kg	U	N	Y		U						L130-07	22:37
				2-NITROTOLUENE	.4	mg/kg	U	N	Y		U						L130-07	22:37
				3-NITROTOLUENE	.4	mg/kg	U	N	Y		U						L130-07	22:37
				4-AM-2,6-DNT	.4	mg/kg	U	N	Y		U						L130-07	22:37
				4-NITROTOLUENE	.4	mg/kg	U	N	Y		U						L130-07	22:37
				HMX	.4	mg/kg	U	N	Y		U						L130-07	22:37
				NITROBENZENE	.4	mg/kg	U	N	Y		U						L130-07	22:37
				RDX	.4	mg/kg	U	N	Y		U						L130-07	22:37
				TETRYL	.4	mg/kg	U	N	Y		U						L130-07	22:37
JJ0008	SW8330	METHOD	N 0 1	1,3,5-TNB	.4	mg/kg	U	N	Y	U	U						L130-08	23:58
				1,3-DNB	.4	mg/kg	U	N	Y	U	U						L130-08	23:58
				2,4,6-TNT	.4	mg/kg	U	N	Y	U	U						L130-08	23:58
				2,4-DNT	.4	mg/kg	U	N	Y	U	U						L130-08	23:58
				2,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-08	23:58
				2-AM-4,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-08	23:58
				2-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-08	23:58

Validation Qualifier Data Entry Verification

Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q01																		
JJ0008	SW8330	METHOD	N 0 1	3-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-08	23:58
				4-AM-2,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-08	23:58
				4-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-08	23:58
				HMX	.4	mg/kg	U	N	Y	U	U						L130-08	23:58
				NITROBENZENE	.4	mg/kg	U	N	Y	U	U						L130-08	23:58
				RDX	.4	mg/kg	U	N	Y	U	U						L130-08	23:58
				TETRYL	.4	mg/kg	U	N	Y	U	U						L130-08	23:58
JJ0009	SW8330	METHOD	N 0 1	1,3,5-TNB	.4	mg/kg	U	N	Y	U	U						L130-09	00:39
				1,3-DNB	.4	mg/kg	U	N	Y	U	U						L130-09	00:39
				2,4,6-TNT	.4	mg/kg	U	N	Y	U	U						L130-09	00:39
				2,4-DNT	.4	mg/kg	U	N	Y	U	U						L130-09	00:39
				2,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-09	00:39
				2-AM-4,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-09	00:39
				2-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-09	00:39
				3-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-09	00:39
				4-AM-2,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-09	00:39
				4-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-09	00:39
				HMX	.4	mg/kg	U	N	Y	U	U						L130-09	00:39
				NITROBENZENE	.4	mg/kg	U	N	Y	U	U						L130-09	00:39
				RDX	.4	mg/kg	U	N	Y	U	U						L130-09	00:39
				TETRYL	.4	mg/kg	U	N	Y	U	U						L130-09	00:39
JJ0010	SW8330	METHOD	N 0 1	1,3,5-TNB	.4	mg/kg	U	N	Y	U	U						L130-10	01:19
				1,3-DNB	.4	mg/kg	U	N	Y	U	U						L130-10	01:19
				2,4,6-TNT	.4	mg/kg	U	N	Y	U	U						L130-10	01:19
				2,4-DNT	.4	mg/kg	U	N	Y	U	U						L130-10	01:19
				2,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-10	01:19
				2-AM-4,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-10	01:19
				2-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-10	01:19
				3-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-10	01:19
				4-AM-2,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-10	01:19
				4-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-10	01:19
				HMX	.4	mg/kg	U	N	Y	U	U						L130-10	01:19
				NITROBENZENE	.4	mg/kg	U	N	Y	U	U						L130-10	01:19
				RDX	.4	mg/kg	U	N	Y	U	U						L130-10	01:19
				TETRYL	.4	mg/kg	U	N	Y	U	U						L130-10	01:19
JJ0011	SW8330	METHOD	N 0 1	1,3,5-TNB	.4	mg/kg	U	N	Y	U	U						L130-11	02:00
				1,3-DNB	.4	mg/kg	U	N	Y	U	U						L130-11	02:00
				2,4,6-TNT	.4	mg/kg	U	N	Y	U	U						L130-11	02:00
				2,4-DNT	.4	mg/kg	U	N	Y	U	U						L130-11	02:00
				2,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-11	02:00

Validation Qualifier Data Entry Verification

Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q01																		
JJ0011	SW8330	METHOD	N 0 1	2-AM-4,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-11	02:00
				2-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-11	02:00
				3-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-11	02:00
				4-AM-2,6-DNT	.4	mg/kg	U	N	Y	U	U						L130-11	02:00
				4-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L130-11	02:00
				HMX	.4	mg/kg	U	N	Y	U	U						L130-11	02:00
				NITROBENZENE	.4	mg/kg	U	N	Y	U	U						L130-11	02:00
				RDX	.4	mg/kg	U	N	Y	U	U						L130-11	02:00
				TETRYL	.4	mg/kg	U	N	Y	U	U						L130-11	02:00
JJ0012	SW8330	METHOD	N 0 1	1,3,5-TNB	.4	mg/kg	U	N	Y	U	U						L144-01	02:40
				1,3-DNB	.4	mg/kg	U	N	Y	U	U						L144-01	02:40
				2,4,6-TNT	.4	mg/kg	U	N	Y	U	U						L144-01	02:40
				2,4-DNT	.4	mg/kg	U	N	Y	U	U						L144-01	02:40
				2,6-DNT	.4	mg/kg	U	N	Y	U	U						L144-01	02:40
				2-AM-4,6-DNT	.4	mg/kg	U	N	Y	U	U						L144-01	02:40
				2-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L144-01	02:40
				3-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L144-01	02:40
				4-AM-2,6-DNT	.4	mg/kg	U	N	Y	U	U						L144-01	02:40
				4-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L144-01	02:40
				HMX	.4	mg/kg	U	N	Y	U	U						L144-01	02:40
				NITROBENZENE	.4	mg/kg	U	N	Y	U	U						L144-01	02:40
				RDX	.4	mg/kg	U	N	Y	U	U						L144-01	02:40
				TETRYL	.4	mg/kg	U	N	Y	U	U						L144-01	02:40
JJ0013	SW8330	METHOD	N 0 1	1,3,5-TNB	.4	mg/kg	U	N	Y	U	U						L144-02	04:42
				1,3-DNB	.4	mg/kg	U	N	Y	U	U						L144-02	04:42
				2,4,6-TNT	.4	mg/kg	U	N	Y	U	U						L144-02	04:42
				2,4-DNT	.4	mg/kg	U	N	Y	U	U						L144-02	04:42
				2,6-DNT	.4	mg/kg	U	N	Y	U	U						L144-02	04:42
				2-AM-4,6-DNT	.4	mg/kg	U	N	Y	U	U						L144-02	04:42
				2-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L144-02	04:42
				3-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L144-02	04:42
				4-AM-2,6-DNT	.4	mg/kg	U	N	Y	U	U						L144-02	04:42
				4-NITROTOLUENE	.4	mg/kg	U	N	Y	U	U						L144-02	04:42
				HMX	.4	mg/kg	U	N	Y	U	U						L144-02	04:42
				NITROBENZENE	.4	mg/kg	U	N	Y	U	U						L144-02	04:42
				RDX	.4	mg/kg	U	N	Y	U	U						L144-02	04:42
				TETRYL	.4	mg/kg	U	N	Y	U	U						L144-02	04:42
JJ0001	EPA314.0	NONE	N 0 1	PERCHLORATE	.0558	mg/kg	U	N	Y	U	U						L130-01	03:17
JJ0002	EPA314.0	NONE	N 0 1	PERCHLORATE	.0543	mg/kg	U	N	Y	U	U						L130-02	03:34

Validation Qualifier Data Entry Verification

Run Date: October 25, 2001

Sample Number:	Analytical/Extraction Method:		Flt REX Dil:	Parameter:	Result:	Units:	Qlfr:	Hit	Use	BCF	Val Qlfr	Val Code:	Reason Codes 1	2	3	4	Lab Sample:	Analysis Time:
10114Q01																		
JJ0003	EPA314.0	NONE	N 0 1	PERCHLORATE	.0576	mg/kg	U	N	Y	U	U						L130-03	03:52
JJ0004	EPA314.0	NONE	N 0 1	PERCHLORATE	.0527	mg/kg	U	N	Y	U	U						L130-04	04:09
JJ0005	EPA314.0	NONE	N 0 1	PERCHLORATE	.0635	mg/kg	U	N	Y	U	U						L130-05	05:00
JJ0006	EPA314.0	NONE	N 0 1	PERCHLORATE	.0546	mg/kg	U	N	Y	U	U						L130-06	05:17
JJ0007	EPA314.0	NONE	N 0 1	PERCHLORATE	.0545	mg/kg	U	N	Y		U						L130-07	05:35
JJ0008	EPA314.0	NONE	N 0 1	PERCHLORATE	.0543	mg/kg	U	N	Y	U	U						L130-08	05:52
JJ0009	EPA314.0	NONE	N 0 1	PERCHLORATE	.0548	mg/kg	U	N	Y	U	U						L130-09	06:09
JJ0010	EPA314.0	NONE	N 0 1	PERCHLORATE	.0573	mg/kg	U	N	Y	U	U						L130-10	06:26
JJ0011	EPA314.0	NONE	N 0 1	PERCHLORATE	.0573	mg/kg	U	N	Y	U	U						L130-11	06:43
JJ0012	EPA314.0	NONE	N 0 1	PERCHLORATE	.0571	mg/kg	U	N	Y	U	U						L144-01	07:00
JJ0013	EPA314.0	NONE	N 0 1	PERCHLORATE	.0726	mg/kg	U	N	Y	U	U						L144-02	08:43

APPENDIX G

SUMMARY STATISTICS FOR BACKGROUND MEDIA, FORT MCCLELLAN, ALABAMA

Table 4-9. Summary Statistics for Background Groundwater
Fort McClellan, Alabama

Run Time: 4:50:27 PM
Run Date: 7/9/98
Exposure Unit: WD

Parameter	Units	Total Number of Samples	Total Number of Detects	Frequency of Detection	NonDetects Min CRL	NonDetects Max CRL	Detects Minimum	Detects Maximum	Arithmetic Mean[a]	Standard Deviation[a]	Distribution[b]	95% UCL of Arith. Mean[a]	Exposure Point Concentration[c]		2x Arithmetic Mean[a]
Alkalinity-phenolphthalein	µg/L	33	2	6%	5,000	5,000	104,000	132,000	9,500.00	28,204	Lognormal	9,763	9,763		19,000
Aluminum	µg/L	57	34	60%	50	141	59	9,600	1,167.66	2,030	Lognormal	19,988	9,600	#	2,335
Antimony	µg/L	57	2	4%	0.60	10.0	0.70	0.80	1.60	1.7	Lognormal	4.4	0.80	#	3.191
Arsenic	µg/L	57	10	18%	1.1	2.5	1.5	224	8.88	41	Lognormal	6.1	6.1		17.764
Barium	µg/L	57	53	93%	6.5	18	5.5	401	63.73	88	Lognormal	144	144		127.458
Beryllium	µg/L	57	15	26%	0.20	5.0	0.20	2.4	0.62	0.74	Lognormal	1.8	1.8		1.247
Bicarbonate	µg/L	33	22	67%	5,000	172,000	9,000	392,000	100,818.18	93,836	Lognormal	831,264	392,000	#	201,636
Bromide	µg/L	33	4	12%	200	200	278	715	138.03	121	Lognormal	171	171		276.06
Cadmium	µg/L	57	22	39%	0.100	5.0	0.100	5.3	1.26	1.2	Lognormal	10	5.3	#	2.51
Calcium	µg/L	57	48	84%	231	33,900	217	452,000	28,246.44	60,264	Lognormal	580,060	452,000	#	56,493
Chloride	µg/L	33	24	73%	923	2,640	1,080	11,000	2,446.06	2,363	Lognormal	4,347	4,347		4,892
Cobalt	µg/L	57	3	5%	20	25	20	25	11.68	2.8	Lognormal	13	13		23.36
Copper	µg/L	57	10	18%	5.0	19	5.3	235	12.74	32	Lognormal	21	21		25.48
Fluoride	µg/L	33	6	18%	200	200	202	646	146.24	124	Lognormal	185	185		292.48
Iron	µg/L	57	44	77%	45	78	2.5	25,800	3,520.25	5,364	Lognormal	590,286	25,800	#	7,040
Lead	µg/L	57	25	44%	0.60	4.5	0.60	27	4.00	6.1	Lognormal	13	13		7.998
Magnesium	µg/L	57	47	82%	100	18,400	176	149,000	10,640.88	19,972	Lognormal	146,372	146,372		21,282
Manganese	µg/L	57	42	74%	5.0	9.7	9.8	5,820	290.25	809	Lognormal	7,221	5,820	#	580.5
Nitrate,Nitrite	µg/L	33	4	12%	10.0	1,110	430	771	141.26	219	Lognormal	1,192	771	#	282.5
Potassium	µg/L	57	43	75%	270	1,240	1.0	68,500	3,597.54	9,508	Lognormal	18,602	18,602		7,195
Silver	µg/L	57	1	2%	0.100	10.0	0.40	0.40	2.00	2.4	Lognormal	141	0.40	#	4.00
Sodium	µg/L	57	52	91%	892	1,180	555	64,700	7,423.18	11,765	Lognormal	23,173	23,173		14,846
Sulfate	µg/L	33	25	76%	1000	3,680	1,650	1.4E+06	51,628.33	242,827	Lognormal	88,195	88,195		103,257
Thallium	µg/L	54	7	13%	0.100	10.0	0.100	5.3	0.73	1.2	Lognormal	5.3	5.3		1.455
Total Alkalinity	µg/L	33	22	67%	5,000	172,000	9,000	392,000	103,424.24	93,707	Lognormal	880,230	392,000	#	206,848
Total Phosphorous	µg/L	33	21	64%	10.0	10.0	10.0	282	44.30	70	Lognormal	140	140		88.594
Vanadium	µg/L	57	2	4%	10.0	28	11	11	8.49	4.3	Lognormal	11	11		16.975
Zinc	µg/L	57	25	44%	18	30	22	1,160	109.98	249	Lognormal	273	273		219.97

[a]Results of duplicate analyses were averaged and nondetects were treated as one-half the detection limit in the calculation of the arithmetic mean, standard deviation, and 95% UCL.

[b]For the calculation of exposure point concentrations (EPCs):

If fewer than four samples are available, or the standard deviation of the data set is zero, the distribution is undetermined.

If the probability plot correlation coefficient of the untransformed data is > or = to the critical value, the distribution is normal.

In all other cases, the distribution assumed for the EPC calculation was lognormal.

[c]The exposure point concentration (EPC) is the 95% upper confidence (UCL) of the arithmetic mean, unless the 95% UCL exceeds the maximum detected value. If the latter is true, the maximum detected value is substituted as the EPC(denoted by a "#" next to the EPC).

- - Parameter detected in all samples.

Table 4-10. Summary Statistics for Background Surface Water
Fort McClellan, Alabama

Run Time: 5:11:42 PM
Run Date: 7/9/98
Exposure Unit: WS

Parameter	Units	Total Number of Samples	Total Number of Detects	Frequency of Detection	NonDetects Min CRL	NonDetects Max CRL	Detects Minimum	Detects Maximum	Arithmetic Mean[a]	Standard Deviation[a]	Distribution[b]	95% UCL of Arith. Mean[a]	Exposure Point Concentration[c]		2x Arithmetic Mean[a]
Aluminum	µg/L	67	57	85%	50	141	65	47,800	2,629.59	7,921	Lognormal	17,831	17,831		5,259
Arsenic	µg/L	65	9	14%	1.1	2.4	1.4	11	1.08	1.5	Lognormal	1.5	1.5		2.17
Barium	µg/L	67	67	100%	- -	- -	11	200	37.68	35	Lognormal	55	55		75.36
Beryllium	µg/L	56	9	16%	0.20	0.20	0.20	3.2	0.19	0.43	Lognormal	0.22	0.22		0.39
Bicarbonate	µg/L	56	40	71%	5,000	5,000	6,000	172,000	53,178.57	57,480	Lognormal	449,171	172,000	#	106,357
Cadmium	µg/L	67	10	15%	0.20	6.8	0.20	1.5	0.57	0.91	Lognormal	1.4	1.4		1.13
Calcium	µg/L	67	67	100%	- -	- -	179	64,100	12,583.19	13,701	Lognormal	218,721	64,100	#	25,166
Chloride	µg/L	56	56	100%	- -	- -	467	10,100	1,943.05	1,815	Lognormal	2,656	2,656		3,886
Chromium	µg/L	64	1	2%	6.0	17	14	14	5.56	1.7	Undetermined	6.3	6.3		11.13
Copper	µg/L	56	8	14%	5.0	8.1	7.1	72	6.35	13	Lognormal	8.1	8.1		12.70
Fluoride	µg/L	56	6	11%	100	200	128	579	107.86	85	Lognormal	139	139		215.71
Iron	µg/L	67	64	96%	45	78	74	232,000	9,814.08	37,961	Lognormal	46,205	46,205		19,628
Lead	µg/L	66	34	52%	0.60	4.5	0.60	47	4.33	8.3	Lognormal	19	19		8.67
Magnesium	µg/L	67	67	100%	- -	- -	171	24,400	5,486.16	5,916	Lognormal	34,551	24,400	#	10,972
Manganese	µg/L	67	64	96%	5.0	9.7	5.5	6,060	282.42	840	Lognormal	1,153	1,153		564.85
Nickel	µg/L	67	3	4%	15	34	40	70	11.23	11	Lognormal	14	14		22.46
Nitrate,Nitrite	µg/L	56	44	79%	10.0	10.0	11	838	106.09	181	Lognormal	507	507		212.18
Potassium	µg/L	67	61	91%	1,240	1,240	330	7,120	1,281.85	1,157	Lognormal	1,940	1,940		2,564
Sodium	µg/L	66	66	100%	- -	- -	296	15,200	1,718.44	2,043	Lognormal	2,401	2,401		3,437
Sulfate	µg/L	56	56	100%	- -	- -	1,060	62,400	4,313.57	8,203	Lognormal	5,784	5,784		8,627
Thallium	µg/L	59	1	2%	0.100	125	4.2	4.2	1.24	8.1	Undetermined	0.56	0.56		2.49
Total Alkalinity	µg/L	56	40	71%	5,000	5,000	6,000	172,000	53,178.57	57,480	Lognormal	449,171	172,000	#	106,357
Total Phosphorous	µg/L	56	24	43%	10.0	14	11	655	38.82	99	Lognormal	87	87		77.64
Vanadium	µg/L	63	5	8%	10.0	28	13	36	7.60	5.7	Lognormal	9.8	9.8		15.21
Zinc	µg/L	66	6	9%	18	30	27	182	20.17	26	Lognormal	24	24		40.35

[a]Results of duplicate analyses were averaged and nondetects were treated as one-half the detection limit in the calculation of the arithmetic mean, standard deviation, and 95% UCL.

[b]For the calculation of exposure point concentrations (EPCs):

If fewer than four samples are available, or the standard deviation of the data set is zero, the distribution is undetermined.

If the probability plot correlation coefficient of the untransformed data is > or = to the critical value, the distribution is normal.

In all other cases, the distribution assumed for the EPC calculation was lognormal.

[c]The exposure point concentration (EPC) is the 95% upper confidence (UCL) of the arithmetic mean, unless the 95% UCL exceeds the maximum detected value. If the latter is true, the maximum detected value is substituted as the EPC(denoted by a "#" next to the EPC).

- - Parameter detected in all samples.

Table 4-11. Summary Statistics for Background Sediment
Fort McClellan, Alabama

Run Time: 5:01:01 PM
Run Date: 7/9/98
Exposure Unit: DS

Parameter	Units	Total Number of Samples	Total Number of Detects	Frequency of Detection	NonDetects Min CRL	NonDetects Max CRL	Detects Minimum	Detects Maximum	Arithmetic Mean[a]	Standard Deviation[a]	Distribution[b]	95% UCL of Arith. Mean[a]	Exposure Point Concentration[c]		2x Arithmetic Mean[a]
Aluminum	ug/g	65	65	100%	- -	- -	657	17,400	4,296.32	3,138	Lognormal	6,591	6,590.77		8,593
Antimony	ug/g	59	40	68%	0.11	1.00	0.12	1.2	0.36	0.25	Lognormal	0.77	0.77		0.73
Arsenic	ug/g	58	58	100%	- -	- -	0.21	20	5.67	5.0	Lognormal	13	13.34		11.33
Barium	ug/g	65	65	100%	- -	- -	5.4	272	49.46	44	Lognormal	86	85.64		98.91
Beryllium	ug/g	55	55	100%	- -	- -	0.069	1.2	0.49	0.30	Lognormal	0.83	0.83		0.97
Cadmium	ug/g	65	47	72%	0.020	1.2	0.020	2.4	0.22	0.39	Lognormal	0.67	0.67		0.43
Calcium	ug/g	65	61	94%	60	99	88	2,810	555.76	557	Lognormal	1,370	1,369.94		1,111.51
Chromium	ug/g	65	65	100%	- -	- -	1.1	63	15.57	14	Lognormal	30	29.80		31.15
Cobalt	ug/g	64	59	92%	0.24	2.5	0.40	22	5.51	4.5	Lognormal	15	14.80		11.01
Copper	ug/g	61	60	98%	2.8	2.8	0.73	59	8.56	8.8	Lognormal	16	15.75		17.12
Iron	ug/g	65	65	100%	- -	- -	683	57,500	17,633.26	12,838	Lognormal	36,392	36,391.61		35,267
Lead	ug/g	62	61	98%	7.4	7.4	1.7	110	18.91	20	Lognormal	35	35.40		37.82
Magnesium	ug/g	65	65	100%	- -	- -	30	3,270	452.97	686	Lognormal	952	952.13		905.94
Manganese	ug/g	64	62	97%	4.2	5.0	8.7	2,050	356.15	385	Lognormal	1,735	1,735.37		712.31
Mercury	ug/g	65	37	57%	0.024	0.061	0.047	0.28	0.06	0.042	Lognormal	0.087	0.09		0.11
Nickel	ug/g	65	43	66%	2.1	5.3	2.4	33	6.51	6.9	Lognormal	14	14.02		13.02
Potassium	ug/g	65	46	71%	100	151	118	4,810	506.74	842	Lognormal	1,273	1,272.69		1,013.48
Selenium	ug/g	65	4	6%	0.25	1.2	0.72	1.9	0.36	0.29	Lognormal	0.44	0.44		0.72
Silver	ug/g	65	37	57%	0.018	0.80	0.021	1.1	0.16	0.21	Lognormal	0.73	0.73		0.32
Sodium	ug/g	65	57	88%	39	60	173	738	346.14	152	Lognormal	942	738.00	#	692.29
Thallium	ug/g	56	56	100%	- -	- -	0.012	0.22	0.06	0.047	Lognormal	0.098	0.10		0.13
Vanadium	ug/g	65	65	100%	- -	- -	2.6	67	20.44	13	Lognormal	34	33.66		40.87
Zinc	ug/g	65	58	89%	5.3	6.9	6.0	111	26.37	24	Lognormal	56	55.67		52.74

[a]Results of duplicate analyses were averaged and nondetects were treated as one-half the detection limit in the calculation of the arithmetic mean, standard deviation, and 95% UCL.

[b]For the calculation of exposure point concentrations (EPCs):

If fewer than four samples are available, or the standard deviation of the data set is zero, the distribution is undetermined.

If the probability plot correlation coefficient of the untransformed data is > or = to the critical value, the distribution is normal.

In all other cases, the distribution assumed for the EPC calculation was lognormal.

[c]The exposure point concentration (EPC) is the 95% upper confidence (UCL) of the arithmetic mean, unless the 95% UCL exceeds the maximum detected value. If the latter is true, the maximum detected value is substituted as the EPC(denoted by a "#" next to the EPC).

- - Parameter detected in all samples.

Table 4-12. Summary Statistics for Surface Soil (0 -1 BLS)
Fort McClellan, Alabama

Run Time: 8:18:07 AM
Run Date: 7/10/98
Exposure Unit: SS

Parameter	Units	Total Number of Samples	Total Number of Detects	Frequency of Detection	NonDetects Min CRL	NonDetects Max CRL	Detects Minimum	Detects Maximum	Arithmetic Mean[a]	Standard Deviation[a]	Distribution[b]	95% UCL of Arith. Mean[a]	Exposure Point Concentration[c]		2x Arithmetic Mean[a]
Aluminum	ug/g	70	70	100%	- -	- -	2,400	39,900	8,153.00	6,095	Lognormal	11,187	11,187		16,306
Antimony	ug/g	69	47	68%	0.082	7.1	0.11	2.6	0.99	1.3	Lognormal	3.4	2.6	#	1.99
Arsenic	ug/g	66	66	100%	- -	- -	0.82	49	6.86	8.0	Lognormal	13	13		13.73
Barium	ug/g	70	70	100%	- -	- -	11	288	61.97	54	Lognormal	99	99		123.94
Beryllium	ug/g	54	54	100%	- -	- -	0.062	0.87	0.40	0.22	Lognormal	0.61	0.61		0.80
Cadmium	ug/g	70	45	64%	0.016	1.2	0.024	0.21	0.14	0.16	Lognormal	0.36	0.21	#	0.29
Calcium	ug/g	70	66	94%	75	100	63	17,900	861.37	2,265	Lognormal	1,942	1,942		1,723
Chromium	ug/g	70	70	100%	- -	- -	2.0	134	18.52	20	Lognormal	31	31		37.04
Cobalt	ug/g	70	68	97%	1.4	1.4	0.39	71	7.57	12	Lognormal	18	18		15.15
Copper	ug/g	70	69	99%	0.50	0.50	1.3	24	6.36	4.4	Lognormal	11	11		12.71
Iron	ug/g	70	70	100%	- -	- -	2,510	56,300	17,076.86	11,577	Lognormal	27,000	27,000		34,154
Lead	ug/g	70	70	100%	- -	- -	2.9	83	20.02	15	Lognormal	33	33		40.05
Magnesium	ug/g	70	70	100%	- -	- -	60	9,600	516.49	1,266	Lognormal	768	768		1,033
Manganese	ug/g	70	70	100%	- -	- -	8.0	6,850	789.46	1,192	Lognormal	3,183	3,183		1,579
Mercury	ug/g	70	23	33%	0.023	0.050	0.031	0.32	0.04	0.046	Lognormal	0.058	0.058		0.08
Nickel	ug/g	70	56	80%	1.6	2.3	1.8	22	5.17	4.2	Lognormal	9.7	9.7		10.33
Potassium	ug/g	70	60	86%	82	116	104	6,010	399.88	946	Lognormal	607	607		799.76
Selenium	ug/g	70	1	1%	0.25	0.58	1.3	1.3	0.24	0.14	Lognormal	0.29	0.29		0.48
Silver	ug/g	70	42	60%	0.016	0.80	0.019	1.9	0.18	0.34	Lognormal	0.70	0.70		0.36
Sodium	ug/g	70	66	94%	39	39	76	563	317.14	98	Lognormal	562	562		634.28
Thallium	ug/g	68	55	81%	6.6	6.6	0.015	34	1.71	5.9	Lognormal	12	12		3.43
Vanadium	ug/g	70	70	100%	- -	- -	4.7	158	29.42	26	Lognormal	48	48		58.84
Zinc	ug/g	70	64	91%	4.9	11	4.6	209	20.32	26	Lognormal	35	35		40.64

[a]Results of duplicate analyses were averaged and nondetects were treated as one-half the detection limit in the calculation of the arithmetic mean, standard deviation, and 95% UCL.

[b]For the calculation of exposure point concentrations (EPCs):

If fewer than four samples are available, or the standard deviation of the data set is zero, the distribution is undetermined.

If the probability plot correlation coefficient of the untransformed data is > or = to the critical value, the distribution is normal.

In all other cases, the distribution assumed for the EPC calculation was lognormal.

[c]The exposure point concentration (EPC) is the 95% upper confidence (UCL) of the arithmetic mean, unless the 95% UCL exceeds the maximum detected value. If the latter is true, the maximum detected value is substituted as the EPC(denoted by a "#" next to the EPC).

- - Parameter detected in all samples.

Table 4-13. Summary Statistics for Subsurface Soil (>1-10 feet BLS)
Fort McClellan, Alabama

Run Time: 8:18:07 AM
Run Date: 7/10/98
Exposure Unit: SD

Parameter	Units	Total Number of Samples	Total Number of Detects	Frequency of Detection	NonDetects Min CRL	NonDetects Max CRL	Detects Minimum	Detects Maximum	Arithmetic Mean[a]	Standard Deviation[a]	Distribution[b]	95% UCL of Arith. Mean[a]	Exposure Point Concentration[c]		2x Arithmetic Mean[a]
Aluminum	ug/g	64	64	100%	- -	- -	1,690	24,600	6,795.47	3,552	Lognormal	9,068	9,068		13,591
Antimony	ug/g	63	46	73%	0.079	7.1	0.082	0.99	0.65	0.98	Lognormal	1.8	0.99	#	1.31
Arsenic	ug/g	64	61	95%	0.25	0.45	0.77	38	9.15	9.7	Lognormal	36	36		18.30
Barium	ug/g	64	64	100%	- -	- -	4.1	4,500	116.81	562	Lognormal	161	161		233.62
Beryllium	ug/g	59	57	97%	0.051	0.053	0.041	2.0	0.43	0.43	Lognormal	0.94	0.94		0.86
Cadmium	ug/g	64	35	55%	0.015	1.2	0.020	1.3	0.11	0.21	Lognormal	0.30	0.30		0.22
Calcium	ug/g	64	44	69%	57	200	67	3,650	318.58	606	Lognormal	772	772		637.17
Chromium	ug/g	64	64	100%	- -	- -	5.5	55	19.13	11	Lognormal	27	27		38.25
Cobalt	ug/g	64	60	94%	0.23	1.4	0.26	96	8.77	16	Lognormal	34	34		17.54
Copper	ug/g	64	64	100%	- -	- -	1.3	61	9.72	9.1	Lognormal	16	16		19.43
Iron	ug/g	64	64	100%	- -	- -	4,840	48,000	22,408.44	10,436	Normal	24,586	24,586		44,817
Lead	ug/g	64	64	100%	- -	- -	0.96	500	19.27	61	Lognormal	27	27		38.53
Magnesium	ug/g	64	60	94%	100	200	35	5,940	383.12	885	Lognormal	638	638		766.24
Manganese	ug/g	64	63	98%	4.1	4.1	7.3	19,000	677.67	2,417	Lognormal	3,864	3,864		1,355
Mercury	ug/g	64	31	48%	0.022	0.050	0.022	0.12	0.03	0.025	Lognormal	0.053	0.053		0.07
Nickel	ug/g	64	51	80%	1.6	2.2	2.2	38	6.45	7.8	Lognormal	13	13		12.89
Potassium	ug/g	64	52	81%	75	110	98	6,150	355.37	774	Lognormal	660	660		710.74
Selenium	ug/g	64	1	2%	0.25	0.58	0.55	0.55	0.24	0.060	Lognormal	0.27	0.27		0.47
Silver	ug/g	64	40	63%	0.016	1.2	0.021	0.66	0.12	0.15	Lognormal	0.47	0.47		0.24
Sodium	ug/g	64	63	98%	39	39	203	643	351.05	118	Lognormal	471	471		702.10
Thallium	ug/g	63	55	87%	0.0090	6.6	0.0090	24	0.70	3.0	Lognormal	2.0	2.0		1.40
Vanadium	ug/g	64	64	100%	- -	- -	8.7	99	32.45	20	Lognormal	47	47		64.89
Zinc	ug/g	64	50	78%	4.0	8.0	5.6	89	17.43	17	Lognormal	39	39		34.86

[a]Results of duplicate analyses were averaged and nondetects were treated as one-half the detection limit in the calculation of the arithmetic mean, standard deviation, and 95% UCL.

[b]For the calculation of exposure point concentrations (EPCs):

If fewer than four samples are available, or the standard deviation of the data set is zero, the distribution is undetermined.

If the probability plot correlation coefficient of the untransformed data is > or = to the critical value, the distribution is normal.

In all other cases, the distribution assumed for the EPC calculation was lognormal.

[c]The exposure point concentration (EPC) is the 95% upper confidence (UCL) of the arithmetic mean, unless the 95% UCL exceeds the maximum detected value. If the latter is true, the maximum detected value is substituted as the EPC(denoted by a "#" next to the EPC).

- - Parameter detected in all samples.