ARCADIS GERAGHTY & MILLER

Groundwater Sampling Form

H103GW03 1 1

Project/No. MA000646.0001.00002 Well ~~[illegible]~~ Date 12 Oct 00

Screen Setting 27.5-22.5 Measuring Point Description TOC Casing Diameter (inches) 1"

Static Water Level 6.93 Measured Width W/L #3 Well Materials PVC ___ ST (Steel)

Total depth 30.4 Pump On: 905 Pump Rate: 200 mL min/100 mL

stickup 1.75 Pump Off: 1215 Volumes Purged ___

Purge Method Sample Time: 1145-1210 Weather: Sun 50's

Centrifugal ___ Sampled By: Diane Mosher

Submersible ___

Other ✓ DUP / MS / MSD

Time	Minutes Elapsed	Rate (gpm) (ML)	DTW	Gallons Purged	pH	Cond. umhos ms/cm	TURB (NTUs)	Redox (mV)	Diss. O2 (mg/L)	TEMP. (C) (F)	Sulfide	Ferrous Iron
825-905		Develop			Purge		Recover			10 Gallons (15x volume)		
905-950		Pump to lower turbidity - Connect to Cer 950 (5 Gal)										
1005	60	100			6.65	0.10	499	-72	1.75	16.00		
1015					6.69	0.09	574	-81	0.50	16.4		
1030					6.66	0.09	386	-82	0.38	16.8		
1045					6.70	0.09	296	-84	0.28	17.0		
1100					6.71	0.09	223	-84	0.15	16.9		
1115	130				6.72	0.10	87.7	-82	0.15	17.1		
1130					6.76	0.10	34.7	-79	0.12	16.9		
1135					6.79	0.10	39.1	-78	0.11	16.8		
1140					6.73	0.10	44.6	-78	0.11	16.7		
											0.12	2.00

Constituents Sampled	Container Description	Number	Preservative
T Metals	plas	1	HNO_3
D Metals	plas	1	HNO_3
T Arsenic	amber	1	none
D Arsenic	amber	1	none
Benzene Toluene	VOA	3	HCL
TSS	plas	1	none

Sampling Personnel pH - 4.00 tubing 2' from bottom

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8/18/2000

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample HI-03GW03 6P HT Page 1 of ___ Field Staff: HAT

Date Sampled 3/20/01
Stick-up Height 0.9 feet
Depth to Water 3.14 feet below top of casing
Total Depth 42 feet below top of casing
Depth of Tubing (sample interval) 42 feet below top of casing

sulfide = 0.27 mg/L
iron = 3.30 mg/L

Start purge 0830
Start parameters 0900
End purge 1025
Total purge time: 1 hours, 55 minutes
Parameters Stabilized? Y

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
0900	0	400		12.45	872	7.22	-56.7	3.12	625
0905	5			12.02	846	7.00	-69.3	2.15	>1100
0910	10			12.00	855	6.95	-81.5	2.00	288
0915	15			12.05	858	6.95	-87.4	2.28	175
0920	20			12.09	857	6.94	-90.4	2.40	271
0925	25			12.16	857	6.92	-90.9	2.64	96.6
0930	30			12.18	858	6.92	-91.7	2.85	94.3
0935	35			12.16	858	6.92	-92.9	2.97	77.2
0940	40			12.12	858	6.92	-94.2	3.13	262
HT 0945	45			12.10	859	6.93	-94.2	3.09	250
950 ~~1000~~	50			12.14	857	6.92	-94.1	3.24	140
955	55			12.20	857	6.94	-94.6	3.25	76.4
1000	60			12.23	856	6.94	-94.6	3.02	177
1005	65			12.26	856	6.94	-94.8	3.09	89.6
1010	70			12.26	855	6.94	-94.7	3.22	224
1015	75			12.29	855	6.93	-94.7	3.17	190
1020	80			12.23	855	6.93	-94.7	3.13	196
1025	85			12.29	855	6.93	-94.7	3.21	183

Comments

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Well Designation HI-036W04 Page 1 of 1 Field Staff: MH

Date Sampled 1/30/01
Stick-up Height 1.9' feet
Depth to Water 9.7' feet below top of casing
Total Depth 36' feet below top of casing
Depth of Tubing (sample interval) 35' feet below top of casing

Start purge 910
Start parameters 1040
End purge 1120
Total purge time: 2 hours, 10 minutes
Parameters Stabilized? Y

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
1045	0	200		11.84	831	7.27	-180.7	0.62	146
1050	5	↓		11.76	832	7.27	-184.6	0.57	101.4
1055	10			11.76	830	7.28	-188.8	0.52	114.0
1100	15			11.68	830	7.28	-189.2	0.53	108.0
1105	20			11.75	830	7.29	-189.0	0.50	77.7
1110	25			11.90	830	7.29	-189.1	0.50	44.5
1115	30			11.87	830	7.29	-187.2	0.50	44.2
1120	35	↓	8	11.77	830	7.29	-187.5	0.50	40.7

Comments

INITIALLY EXTREMELY TURBID AND INTERMITTENT. CLEARED SOMEWHAT W/ SLOW FLOW AND OCASSIONAL AIR BUBBLES. SAMPLING DEPTH MAY BE DUE TO SEDIMENT.

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample HT034W05 Page 1 of 1 Field Staff: LC/MH met

Date Sampled 2/5/01
Stick-up Height 1.63' feet
Depth to Water 5.75 feet below top of casing
Total Depth 34.2 feet below top of casing
Depth of Tubing (sample interval) 33.2 feet below top of casing

Start purge 1130
Start parameters —
End purge 1200
Total purge time: 0 hours, 30 minutes
Parameters Stabilized? N

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)

Comments

PURGED ONE CASING VOLUME. TUBING DID NOT REACH BOTTOM OF WELL DUE TO INTENSE FRICTION.

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample MW-036WQSNS Page 1 of 1 Field Staff: LC/MH

Date Sampled 2/7/01
Stick-up Height 1.65' feet
Depth to Water 5.68' feet below top of casing
Total Depth 34.2' feet below top of casing
Depth of Tubing (sample interval) 34.21 feet below top of casing

Start ~~purge~~ sample 1400
Start parameters
End ~~purge~~ sample 1435
Total purge time: ____ hours, 35 minutes
Parameters Stabilized? N

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)

Comments
- purged 2/5/01, very low recharge rate
- sample depth = 34.2' → caught on collar
- collect 2 VOC's, 1 Unfiltered As sample, 1 TSS sample, 1 tot. met., 1 Dis. Met.

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample H1-03GW05 Page 1 of 1 Field Staff: MH

Date Sampled 2/1/31
Stick-up Height 2.0' feet
Depth to Water 6.7' feet below top of casing
Total Depth 34 feet below top of casing
Depth of Tubing (sample interval) 33 feet below top of casing

Start purge 1435
Start parameters —
End purge 1525
Total purge time: 0 hours, 50 minutes
Parameters Stabilized? N

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)

Comments

ENCOUNTERED SOFT RESISTANCE BELIEVED TO BE A BEND IN THE PIPE. GAUGED FLOW TO BE 40 ML/min.

SURGED WELL FOR 15 min W/ CHECK VALVE. NOT INCLUDED ABOVE.

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample HI-03GW06NS Page 1 of 1 Field Staff: MH

Date Sampled 2/12/01
Stick-up Height 1.1' feet
Depth to Water 4.63' feet below top of casing
Total Depth 35.2' feet below top of casing
Depth of Tubing (sample interval) 35.2' feet below top of casing

Start ~~purge~~ sample 1040
Start parameters
End ~~purge~~ sample 1145
Total purge time: 1 hours, 5 minutes
Parameters Stabilized? N

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)

Comments
last purged on 2/9/01, very low recharge rate
collect complete condensed sample suite on 2/12/01
(Sample depth = 35.2' → tubing caught on collar)

mm

ARCADIS GERAGHTY & MILLER

Groundwater Sampling Form

Project/No. MA000646.0001.00002 Well HI-04 GW-01 Date 10/6/00

Screen Setting 8-3 Measuring Point Description TOC Casing Diameter (inches) 1"

Static Water Level 6.65 Measured Width Well Materials PVC / ✓ ST. Steel

Total depth 9.74 Pump On: 0845 Pump Rate: 75 ml/min

stickup 0.99 Pump Off: 1045 Volumes Purged 2

Purge Method Peristaltic Sample Time: 0940 Weather: Cloudy 40's

Centrifugal ____ Submersible ____ Other ____ DUP / MS / MSD Sampled By: AR

Time	Minutes Elapsed	Rate (gpm) (ML)	DTW	Gallons Purged	pH	Cond. umhos ms/cm	TURB (NTUs)	Redox (mV)	Diss. O2 (mg/L)	TEMP. (C) (F)	Sulfide mg/L	Ferrous Iron mg/L
0900							100					
0905					5.69	55	29	35	5.71	18.0		
0910					5.91	54	12	13	4.64	17.7		
0915					5.96	54	17	12	3.72	17.5		
0920					5.96	52	14	16	3.52	17.4		
0925					5.93	50	11	14	3.30	17.3		
											0.07	2.95

Constituents Sampled	Container Description	Number	Preservative
T Metals	plas	1	HNO_3
D Metals	plas	1	HNO_3
T Arsenic	amber	1	none
D Arsenic	amber	1	none
Benzene Toluene	VOA	3	HCL
TSS	plas	1	none

Sampling Personnel

pH – 4.00 tubing 21' from bottom

ARCADIS GERAGHTY & MILLER

Groundwater Sampling Form

1 / 1

Project/No. MA000646.0001.00002 Well H1-046GW02 Date 11 OCT 00

Screen Setting 18-13 Measuring Point Description TOC Casing Diameter (inches) 1"

Static Water Level 7.65 Measured Width WL #3 Well Materials PVC / ST (Steel)

Total depth 20.85 Pump On: ~~1000~~ 1005 Pump Rate: 200mL min

stickup 1.70 Pump Off: 1140 Volumes Purged

Purge Method Centrifugal Sample Time: 1115 - 1135 Weather: Windy 40's

Submersible Other ✓ DUP / MS / MSD Sampled By: DMosher

Time	Minutes Elapsed	Rate (gpm) (ML)	DTW	Gallons Purged	pH	Cond. umhos ms/cm	TURB (NTUs)	Redox (mV)	Diss. O2 (mg/L)	TEMP. (C) (F)	Sulfide	Ferrous Iron
955-1005			Develop		Purge			recharge				
1005-1010			Pump		to	lower		turbidity				
1010					6.28	0.27	55	-43	6.39	16.0		
1015					6.15	0.27	28	-30	5.84	16.3		
1020					6.09	0.27	19	-10	5.12	16.4		
1025					6.05	0.27	11.4	4	4.73	16.4		
1030					6.05	0.27	12.7	9	4.66	16.5		
1035					6.03	0.27	11.3	12	4.64	16.4		
1040					6.03	0.27	8.3	15	4.70	16.4		
1045					6.02	0.27	5.9	18	4.78	16.5		
1050					6.02	0.27	4.6	21	4.88	16.5		
1055					6.01	0.27	4.4	24	4.93	16.5		
1100					6.01	0.27	3.3	26	5.08	16.4		
1105					6.00	0.27	6.1	27	5.01	16.4		
1110					6.01	0.27	6.2	28	5.04	16.4	0.02	2.81

Constituents Sampled	Container Description	Number	Preservative
T Metals	plas	1	HNO_3
D Metals	plas	1	HNO_3
T Arsenic	amber	1	none
D Arsenic	amber	1	none
Benzene Toluene	VOA	3	HCL
TSS	plas	1	none

pH - 7.01 tubing 1.5 from bottom

Sampling Personnel

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ARCADIS GERAGHTY & MILLER

Groundwater Sampling Form

Project/No. MA000646.0001.00002 Well MW04GW03 Date 10/11/00 + 7

Screen Setting 28-23 Measuring Point Description ToC Casing Diameter (inches) 1

Static Water Level 7.31 Measured Width Well Materials ✓ PVC ✓ ST. Steel

Total depth 31.07 Pump On: 850 Pump Rate: 200

stickup 1.88

Purge Method ✓ Pump Off: 1015 Volumes Purged

Centrifugal Sample Time: 945 Weather:

Submersible Sampled

Other DUP / MS / MSD By: SD

Time	Minutes Elapsed	Rate (gpm) (ML)	DTW	Gallons Purged	pH	Cond. umhos ms/cm	TURB (NTUs)	Redox (mV)	Diss. O2 (mg/L)	TEMP. (C) (F)	Sulfide	Ferrous Iron
830				≈3.5g with check valve								
900		200				(S)	444					
910					5.79	0.25	123	68	4.10	15.86		
920					5.99	0.25	57.9	27	3.04	15.90		
925					6.03	0.24	39.1	18	2.98	15.84		
930					6.06	0.24	26.5	13	2.99	15.80		
935					6.09	0.24	18.0	9	2.97	15.77		
940					6.10	0.24	17.0	6	2.97	15.77		
945					6.12	0.24	16.4	3	2.94	15.81	0.02	2.33

Constituents Sampled	Container Description	Number	Preservative
T Metals	plas	1	HNO_3
D Metals	plas	1	HNO_3
T Arsenic	amber	1	none
D Arsenic	amber	1	none
Benzene Toluene	VOA	3	HCL
TSS	plas	1	none

Sampling Personnel pH – 4.00 tubing 2.5' from bottom

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ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample H1-04GW04NS Page 1 of 1 Field Staff: MH

Date Sampled 1/31/01
Stick-up Height 2.0' feet
Depth to Water 7.7' feet below top of casing
Total Depth 30' feet below top of casing
Depth of Tubing (sample interval) 29' feet below top of casing

Start purge 905
Start parameters —
End purge 940
Total purge time: 0 hours, 35 minutes
Parameters Stabilized? N

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)

Comments

SAMPLED FOR VOC, TSS AND HACH (SULFIDE, FERROUS IRON)
PREVIOSLY SAMPLED FOR ARSENIC (TOTAL AND SPECIES)

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Well Designation HI-04GW04NS Page 1 of 1 Field Staff: MH

Date Sampled 1/26/01
Stick-up Height 2.0 feet
Depth to Water 12.01 feet below top of casing
Total Depth 30.06 feet below top of casing
Depth of Tubing (sample interval) 29 feet below top of casing

Start purge 920
Start parameters ~~950~~ MH
End purge 950
Total purge time: ____ hours, 30 minutes
Parameters Stabilized? N

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)

Comments
UNPRODUCTIVE WELL. PURGED 1.5 PINTS. SAMPLED UNFILTERED FOR AS.

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample HI-04GW04NS Page 1 of 1 Field Staff: MH

Date Sampled 2/1/01
Stick-up Height 2.0' feet
Depth to Water 10.1' feet below top of casing
Total Depth 31' feet below top of casing
Depth of Tubing (sample interval) 30' feet below top of casing

Start purge 1250
Start parameters —
End purge 1305
Total purge time: 0 hours, 15 minutes
Parameters Stabilized? N

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)

Comments

COMPLETED SUITE.

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample HI-04GW05 Page 1 of 1 Field Staff: MH

Date Sampled 2/5/01
Stick-up Height 2.0 feet
Depth to Water 11.54 feet below top of casing
Total Depth 35 feet below top of casing
Depth of Tubing (sample interval) 34 feet below top of casing

Start purge 1140
Start parameters —
End purge 1200
Total purge time: 0 hours, 20 minutes
Parameters Stabilized? N

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)

Comments

PURGED CASING VOLUME. TUBING DID NOT REACH TOTAL DEPTH DUE TO INTENSE FRICTION.

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample H1-04GW05NS Page 1 of 1 Field Staff: LC/MH

Date Sampled 2/7/01
Stick-up Height 2.0' feet
Depth to Water 11.3' feet below top of casing
Total Depth 35' feet below top of casing
Depth of Tubing (sample interval) 34 feet below top of casing

Start ~~purge~~ sample 1445
Start parameters —
End ~~purge~~ sample 1500
Total purge time: ____ hours, ____ minutes
Parameters Stabilized? N

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)

Comments
COLLECTED SAMPLE. 1 TSS, 2 VOC, AND AS SPEC/TOTAL AS UNFILTERED.

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample HI-04GW05NS Page 1 of 1 Field Staff: LC/MH

Date Sampled 2/8/0
Stick-up Height 1.75' feet
Depth to Water 10.29' feet below top of casing
Total Depth 34.2' feet below top of casing
Depth of Tubing (sample interval) 34.2' feet below top of casing

Start ~~purge~~ Sample 0910
Start parameters
End ~~purge~~ Sample 0930
Total purge time: ____ hours, 20 minutes
Parameters Stabilized? N

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)

Comments
- Purged last on 2/7/01, collected 1 Total Met. bottle on 2/8
- Hach Colorimeter Test, condensed sample suite complete

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample MI-04GW05R Page 1 of 1 Field Staff: LC

Date Sampled 3/20/01
Stick-up Height 1.01 feet
Depth to Water 3.67 feet below top of casing
Total Depth 48.0 feet below top of casing
Depth of Tubing (sample interval) 47.5 feet below top of casing

sulfide = 0.09 mg/L
iron = 2.76 mg/L

Start purge 0845
Start parameters 0910
End purge 0950
Total purge time: 1 hours, 5 minutes
Parameters Stabilized? Y

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
0910		400		12.82	727	6.37	14.5	2.35	207
0915	5	400		12.71	725	6.55	-36.0	2.29	134
0920	10	400		12.74	725	6.57	-38.8	2.28	134
0925	15	400		12.79	722	6.71	-54.7	2.38	94.3
0930	20	400		12.81	722	6.75	-57.9	2.28	79.5
0935	25	400		12.80	722	6.80	-61.4	2.27	33.0
0940	30	400		12.81	722	6.85	-63.6	2.32	23.5
0945	35	400		12.74	722	6.86	-63.9	2.29	23.6
0950	40	400		12.76	720	6.91	-65.3	2.36	22.1

Comments

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample MI-040W06NS Page 1 of 1 Field Staff: MH

Date Sampled 2/12/01
Stick-up Height 1.0' feet
Depth to Water 5.34' feet below top of casing
Total Depth 33.4' feet below top of casing
Depth of Tubing (sample interval) 33.4' feet below top of casing

Start ~~purge~~ sample 1000, 1205
Start parameters
End ~~purge~~ sample 1010, 1230
Total purge time: ____ hours, 35 minutes
Parameters Stabilized? N

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)

Comments
(Sample depth = 33.4' → tubing caught on collar), last purged on 2/9, very low recharge
Complete condensed sample suite collected 2/12

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample H1-05GW01 Page 1 of 1 Field Staff: MH

Date Sampled 2/1/01
Stick-up Height 1 feet
Depth to Water 4.7' feet below top of casing
Total Depth 10 feet below top of casing
Depth of Tubing (sample interval) 9 feet below top of casing

Start purge 1035
Start parameters 1110
End purge
Total purge time: ____ hours, ____ minutes
Parameters Stabilized? ____

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
1115		300		6.89	458	6.97	5.4	6.97	476
1120		↓		6.89	459	6.95	5.6	6.94	29.8
1125				6.88	460	6.92	6.3	7.25	43.0
1130				6.87	462	6.89	7.6	7.75	12.6
1135				6.86	462	6.86	7.9	8.15	11.9
1140				6.88	462	6.85	16.1	8.46	9.56
1145				6.88	460	6.87	8.97	8.90	6.03
1150		↓		6.90	460	6.85	10.3	9.40	3.57
1155				6.93	463	6.84	10.7	10.17	2.69
1200				6.94	463	6.84	11.4	10.20	1.91
1205									

Comments

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Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Well Designation H1-05GW01 Page 1 of 1 Field Staff: MH

Date Sampled 1/26/01
Stick-up Height 1 feet
Depth to Water 4.85' feet below top of casing
Total Depth 9.1 feet below top of casing
Depth of Tubing (sample interval) 8.1 feet below top of casing

Start purge 1430
Start parameters —
End purge 1525
Total purge time: ___ hours, 55 minutes
Parameters Stabilized? NO

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)

Comments

FLOW VERY SLOW AND AERATED. ADVISED BY L. MCTIERNAN TO SAMPLE ON 1/30/01.

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample H1-05GW01 Page 1 of 1 Field Staff: MH

Date Sampled 2/1/01
Stick-up Height 1 feet
Depth to Water 4.7' feet below top of casing
Total Depth 10 feet below top of casing
Depth of Tubing (sample interval) 9 feet below top of casing

Start purge 1035
Start parameters 1110
End purge
Total purge time: ____ hours, ____ minutes
Parameters Stabilized? ____

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
1115		300		6.89	458	6.97	5.4	6.97	476
1120		↓		6.89	459	6.95	5.6	6.94	29.8
1125				6.88	460	6.92	6.3	7.25	43.0
1130				6.87	462	6.89	7.6	7.75	12.6
1135				6.86	462	6.86	7.9	8.15	11.9
1140				6.88	462	6.85	16.1	8.46	9.56
1145				6.88	460	6.87	8.97	8.90	6.03
1150				6.90	460	6.85	10.3	9.40	3.57
1155				6.93	463	6.84	10.7	10.17	2.69
1200				6.94	463	6.84	11.4	10.20	1.91
1205									

Comments

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample H1-05GW02 Page 1 of 1 Field Staff: LC

Date Sampled 5/4/01
Stick-up Height 2.1' feet
Depth to Water 5.75' feet below top of casing
Total Depth 20.5' feet below top of casing
Depth of Tubing (sample interval) 19.5' feet below top of casing

Sulfide: 0.24 mg/L
ferrous iron: 0.47 mg/L

Start purge 1245
Start parameters 1320
End purge 1405
Total purge time: 1 hours, 20 minutes
Parameters Stabilized? Y

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
1320				11.89	1066	7.88	35.5	7.91	45
1325	5			11.87	1048	7.36	21.2	7.80	36
1330	10			11.65	1045	6.94	-101.2	7.14	160
1335	15			11.51	1047	7.09	-39.2	5.70	230
1340	20			11.43	1042	6.87	-34.7	5.40	200
1345	25			11.44	1064	6.86	-35.9	5.02	190
1350	30			11.53	1075	6.87	-38.8	3.65	65
1355	35			11.54	1075	6.87	-35.8	3.31	60
1400	40			11.44	1080	6.86	-35.4	3.12	65
1405	45			11.43	1080	6.88	-35.7	3.22	59

Comments

Collected sample and duplicate, H1-05GW02[redacted]99

ARCADIS GERAGHTY & MILLER

Groundwater Sampling Form

1 1

Project/No. MA000646.0001.00002 Well H106GW01 Date 10/6/00

Screen Setting 8-3 | Measuring Point Description TOC | Casing Diameter (inches) 1

Static Water Level 5.75 | Measured Width | Well Materials ✓ PVC / ✓ ST. Steel

Total depth 9.75 | Pump On: 850 | Pump Rate: 150

stickup 1.11 | Pump Off: 1005 | Volumes Purged

Purge Method

Centrifugal ✓ | Sample Time: 930 | Weather:

Submersible | Sampled By: SD

Other | DUP / MS / MSD

Time	Minutes Elapsed	Rate (gpm) (ML)	DTW	Gallons Purged	pH	Cond. umhos ms/cm	TURB (NTUs)	Redox (mV)	Diss. O2 (mg/L)	TEMP. (C) (F)	Sulfide	Ferrous Iron
				≈0.5 with check valve								
900							531					
905		150			5.56	66	177	29	1.80	16.93		
910					5.51	061	97.6	32	1.37	17.03		
920					5.55	53	25.4	34	0.93	17.59		
925					5.54	52	19.4	37	0.94	17.68		
930					5.54	52	13.6	39	0.87	17.77	0.00	2.24

Constituents Sampled	Container Description	Number	Preservative
T Metals	plas	1	HNO3
D Metals	plas	1	HNO3
T Arsenic	amber	1	none
D Arsenic	amber	1	none
Benzene Toluene	VOA	3	HCL
TSS	plas	1	none

Sampling Personnel

pH – 4.01 tubing 1.5' from bottom

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8/18/2000

ACADIS GERAGHTY & MILLER

Groundwater Sampling Form

1 1

Project/No. MA000646.0001.00002 Well H106GW02 Date 10/11/00

Screen Setting 17-12 Measuring Point Description ToC Casing Diameter (inches) 1

Static Water Level 5.55 Measured Width Well Materials PVC ✓ ST. Steel

Total depth 18.70 Pump On: 1015 Pump Rate: 175

stickup 0.98 Pump Off: 1135 Volumes Purged

Purge Method Sample Time: 1100 Weather: Windy 40s

Centrifugal ✓ Sampled By: SD

Submersible

Other DUP / MS / MSD

Time	Minutes Elapsed	Rate (gpm) (ML)	DTW	Gallons Purged	pH	Cond. umhos ms/cm	TURB (NTUs)	Redox (mV)	Diss. O2 (mg/L)	TEMP. (C) (F)	Sulfide	Ferrous Iron
950				≈2.5g	with check valve							
1025		175			6.44	76	122	12	5.03	15.60		
1030					6.06	67	74.1	28	1.71	16.51		
1035					5.92	58	44.5	42	1.46	16.55		
1040					5.88	57	28.3	48	1.42	16.62		
1045					5.87	57	23.2	51	1.41	16.66		
1050					5.85	56	18.0	54	1.40	16.63		
1055					5.83	56	14.1	58	1.40	16.63		
1100					5.82	56	13.4	59	1.39	16.63	0.00	243

Constituents Sampled	Container Description	Number	Preservative
T Metals	plas	1	HNO_3
D Metals	plas	1	HNO_3
T Arsenic	amber	1	none
D Arsenic	amber	1	none
Benzene Toluene	VOA	3	HCL
TSS	plas	1	none

Sampling Personnel

pH – 4.01 tubing 2.5' from bottom

ARCADIS GERAGHTY & MILLER

Groundwater Sampling Form

1 of 1

Project/No. MA000646.0001.00002 Well HI-07-GW-01 Date 10/6/00

Screen Setting 8-3 Measuring Point Description TOC Casing Diameter (inches) 1"

Static Water Level 6.55 Measured Width Well Materials PVC ✓ ST. Steel

Total depth 10.66 Pump On: 1105 Pump Rate: 100 ml/min

stickup 1.74 Pump Off: 1300 Volumes Purged

Purge Method

Centrifugal Sample Time: 1145 Weather: Cloudy, RAIN

Submersible Sampled By: AR

Other Peristaltic DUP / MS / MSD

Time	Minutes Elapsed	Rate (gpm) (ML)	DTW	Gallons Purged	pH	Cond. umhos ms/cm	TURB (NTUs)	Redox (mV)	Diss. O2 (mg/L)	TEMP. (C) (F)	Sulfide mg/L	Ferrous Iron mg/L
1115		100			6.12	0.30	85	-28	4.35	15.0		
1120					6.11	0.31	14	-22	4.50	15.3		
1125					6.05	0.30	4.19	-11	3.83	15.4	15.4	
1130					6.03	0.30	3.7	-1	3.74		15.5	
1135					6.04	0.31	5.5	-8	3.70		15.5	
											0.01	3.12

Constituents Sampled	Container Description	Number	Preservative
T Metals	plas	1	HNO_3
D Metals	plas	1	HNO_3
T Arsenic	amber	1	none
D Arsenic	amber	1	none
Benzene Toluene	VOA	3	HCL
TSS	plas	1	none

Sampling Personnel pH-4.01 4.01 tubing 15' from bottom

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8/18/2000

ARCADIS GERAGHTY & MILLER

Groundwater Sampling Form

1 1

Project/No. MA000646.0001.00002 Well H107GW02 Date 10/11/00

Screen Setting 17-12 Measuring Point Description ToC Casing Diameter (inches) 1

Static Water Level 5.49 Measured Width Well Materials PVC ✓ ST. Steel

Total depth 18.91 Pump On: 1230 Pump Rate: 250

stickup 0.85 Purge Method Pump Off: 1415 Volumes Purged

Centrifugal ✓ Sample Time: 1350 Weather:

Submersible Sampled

Other DUP / MS / MSD By: SD

Time	Minutes Elapsed	Rate (gpm) (ML)	DTW	Gallons Purged	pH	Cond. umhos ms/cm	TURB (NTUs)	Redox (mV)	Diss. O2 (mg/L)	TEMP. (C) (F)	Sulfide	Ferrous Iron
1205				≈1.5g with check valve								
1240		250					OR					
1250							OR					
1300							516					
1310					5.80	86	157	61	1.31	16.21		
1325					5.79	86	38.6	42	0.57	15.07		
1330					5.80	85	24.0	42	0.55	15.02		
1335					5.79	85	17.4	42	0.53	14.94		
1340					5.79	85	14.6	42	0.54	14.97		
1345					5.79	84	14.6	42	0.51	14.94		
1350					5.79	84	13.8	43	0.51	15.09	0.00	3.30 Limit

Constituents Sampled	Container Description	Number	Preservative
T Metals	plas	1	HNO_3
D Metals	plas	1	HNO_3
T Arsenic	amber	1	none
D Arsenic	amber	1	none
Benzene Toluene	VOA	3	HCL
TSS	plas	1	none

Sampling Personnel pH-4.01 tubing 2.5' from bottom

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8/18/2000

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample HI-076W03 Page 1 of 1 Field Staff: LC

Date Sampled 2/22/01
Stick-up Height 0.35' feet
Depth to Water 6.81' feet below top of casing
Total Depth 26.0' feet below top of casing
Depth of Tubing (sample interval) 25.0' feet below top of casing

sulfide: 0.0 mg/L
ferrous iron: 0.08 mg/L

Start purge 0940
Start parameters 1020
End purge 1105
Total purge time: 1 hours, 25 minutes
Parameters Stabilized? Y

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
1020		400		9.41	406	5.74	115.1	0.32	10.46
1025	5	400		9.39	383	5.41	99.5	0.38	8.89
1030	10	400		9.40	383	5.40	98.0	0.34	8.44
1035	15	400		9.45	383	5.37	93.3	0.29	6.48
1040	20	400		9.54	383	5.35	89.0	0.30	6.40
1045	25	400		9.64	384	5.33	86.5	0.27	5.0
1050	30	400		9.50	383	5.32	85.8	0.26	2.70
1055	35	400		9.68	384	5.33	85.7	0.26	3.07
1100	40	400		9.67	384	5.32	85.7	0.25	2.59
1105	45	400		9.68	383	5.32	86.4	0.25	2.34

Comments
collect sample and MS/MSD, HI-076W03MS and HI-076W03MSD

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample H2-01GW01NS Page 1 of 1 Field Staff LC

Date Sampled 5/10/01
Stick-up Height 2.0 feet
Depth to Water 12.1 feet below top of casing
Total Depth 16.0 feet below top of casing
Depth of Tubing (sample interval) 15.0 feet below top of casing

sulfide: 1.04mg/L
ferrous iron: 3.30mg/L

Start purge 10:40
Start parameters
End purge 1230
Total purge time: 1 hours, 50 minutes
Parameters Stabilized? N

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)

Comments

Purge rate less than 50mL/min, collect complete suite w/ pump

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample MW-016-W02NS Page 1 of 1 Field Staff: LC

Date Sampled 5/10/01
Stick-up Height 0.9 feet
Depth to Water 11.2 feet below top of casing
Total Depth 20.5 feet below top of casing
Depth of Tubing (sample interval) 19.5 feet below top of casing

Sulfide: 0.03 mg/L
ferrous iron: 0.62 mg/L

Start purge 1045
Start parameters
End purge 1345
Total purge time: 3 hours, - minutes
Parameters Stabilized? N

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)

Comments

Purge rate <50mL/min, collected condensed suite w/ pump

CLICK TO CONTINUE

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Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample H2-02GW01 Page 1 of 1 Field Staff: MH

Date Sampled 1/17/01
Stick-up Height ~3 feet
Depth to Water 4.60 feet below top of casing
Total Depth NM feet below top of casing
Depth of Tubing (sample interval) ____ feet below top of casing

Start purge 1410
Start parameters 1430
End purge 1455
Total purge time: ____ hours, 45 minutes
Parameters Stabilized? Y

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
1430		400		4.31	313	6.92	-18.0	4.22	8.58
1435		↓		4.23	301	6.85	-40.2	3.10	9.89
1440				4.25	300	6.83	-50.7	2.86	7.36
1445				4.28	300	6.82	-51.3	2.78	6.77
1450				4.30	300	6.82	-54.3	2.75	6.20
1455				4.30	300	6.81	-58.6	2.61	6.36

Comments