Geotechnical Environmental Services, Inc.
7150 Placid St.
Las Vegas, NV 89119

LOW FLOW PURGE AND SAMPLE FORM

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Well ID: ~~CLD-4R~~ CLD-4R
Date: 7-22-09
Sample ID: CLD-4RB
Time: 09:50
Analysis: Full Suite
QA/QC - Dup ID: N/A
Rinsate ID: N/A
MS/MSD ID: N/A

Screened Interval (ft): NR
Pump Intake Depth (ft): NR
Ave. Flow Rate (gpm/lpm): 0.11
Purging Sampling Device: Dedicated Bladder Pump
PID Reading at TOC: N/A
Water Level Instrument: Solonist - Temer
Water Quality Meters:

Well Diameter (in): 2" PVC
Static Water Level(ft) 36.05
Total Well Depth (ft) NR — ?
Water Column Length (ft) NR
Minimum Purge Volume: N/A
Well Secure - yes/no: Yes
Sampler Name: Dana R. Brown

Time	Volume Purged (ga/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1° C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Color Salinity %	Odor FDS
9:09	0	Pump start									
09:12		0.080	36.05	11.13	7.01	31.05	4.00	150	1.75	clear	None
15		↓	36.07	11.05	7.36	30.56	3.72	178	1.03	"	"
18		↓	36.08	10.91	7.70	28.48	2.94	171	1.04	"	"
21		0.160	36.10	10.65	8.02	26.37	2.92	162	1.25	"	"
24		↓	36.11	10.55	8.03	26.22	1.04	158	0.96	"	"
27		↓	36.12	10.46	8.04	26.14	0.78	155	1.26	"	"
30		↓	36.10	10.39	8.06	26.36	0.66	148	0.51	"	"
33		0.130	36.09	10.36	8.04	26.72	0.64	143	0.95	"	"
39		↓	36.09	10.34	8.05	26.98	0.60	142	0.42	"	"
42		↓	36.00	10.29	8.00	26.93	0.57	141	0.62	"	"
45		↓	36.09	10.25	8.05	26.94	0.54	139	0.39	"	"
48	1.0	↓	36.09	10.22	8.04	26.93	0.50	139	0.42	"	"
09:50	Begin sample collection - using Dup procedure - David fills first, US second										
11:32			36.10								
13:16			36.10								
13:18	Finish sample collection 2 3 bottles filled + 3.5 gallons Trans Sample										
	Final Field Parameter Measurements										
13:28	1.5 + 3.0 + 3.5 = 8.0		36.10	9.06	7.72	29.48	0.34	101	0.14	clear	None

Comments: TB = 07:30. Water Quality measured by David + Tronox. Used dedicated bladder pump & QED MP-10 controller. Turbidity measured by Dana Brown + HACH
NR = Not recorded in Tronox database

152716
© CLD-4R

152734
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LOW FLOW PURGE AND SAMPLE FORM

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Well ID:	M-2A	Screened Interval (ft):	30-40	Well Diameter (in):	2" PVC
Date:	9-25-09	Pump Intake Depth (ft):	43.0	Static Water Level(ft)	40.60
Sample ID:	M-2AB	Ave. Flow Rate (lpm):	0.239	Total Well Depth (ft)	46.70
Time:	10:00	Purging Sampling Device:	Bladder Pump	Water Column Length (ft)	9.90
Analysis:	Full Suite	PID Reading at TOC:	N/A	Minimum Purge Volume:	N/A
QA/QC - Dup ID:	M-2009AB	Water Level Instrument:	Keck	Well Secure - yes/no:	Yes
Rinsate ID:	N/A	Water Quality Meters:	YSI + HACH	Sampler Name:	Dana R. Brown
MS/MSD ID:	N/A				

Time	Volume Purged (L)	Flow Rate lpm	Water Level (feet - TOC) ± 0.3 ft	Specific Conductance 5%	pH ± 0.1	Temp ± 1° C	DO (mg/l) ±10%	ORP ± 10%	Turbidity 10% or <10 NTU	Color %	Odor
~~0814~~ 07:47	0		40.60								
09:02	Pump ON										
09:06	0.5	0.400	40.60	11.34	7.04	24.63	4.62	153.0	73.7	Very cloudy d Light green	
09:12	1.6	0.400	40.61	11.28	7.14	24.54	4.74	151.7	36.1	Clearing quickly	
09:22	3.0	0.400	40.60	11.28	7.10	24.49	4.70	150.2	17.7	Light greenish yellow	
09:28	4.25	0.400	40.60	11.29	7.10	24.57	4.72	148.5	5.36	Re-read Turb = 7.54	
09:36	5.0	0.400	40.60	11.28	7.10	24.51	4.71	150.0	4.96	Light grn/yellow	slight
09:41	6.5	0.250	40.60	11.30	7.10	24.61	4.68	151.1		" "	" "
										" "	" "
10:00	Commence sample collection										
11:21	Finish sample collection - 46 bottles filled (no dissoved)										
	Final Field Parameter Measurements										
11:43	9.5+	0.250	40.60	11.32	7.14	24.71	4.50	166.6	3.71	Very pale	yellow slight

Comments:

01 C-2092305

155829 @ M-2A

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BMI Common Areas Clark County, Nevada
SOP-05 Water sampling and Field Measurements

M-75 (THB)

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7050 Placid St.
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LOW FLOW PURGE AND SAMPLE FORM

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Well ID: M-75
Date: 6/25/09
Sample ID: M-75
Time: 0845
Analysis: Full
QA/QC - Dup ID: Ø
Rinsate ID:
MS/MSD ID: Ø

Screened Interval (ft): 34.6 - 49.3
Pump Intake Depth (ft): 51.0
Ave. Flow Rate (gpm/lpm): 0.34
Purging/Sampling Device: Bladder Pump
PID Reading at TOC: N/A
Water Level Instrument: Keck
Water Quality Meters: YSI + HACH

Well Diameter (in): 2
Static Water Level (ft): 42.25
Total Well Depth (ft): 51.8
Water Column Length (ft): 9.6
Minimum Purge Volume: NA
Well Secure - yes/no:
Sampler Name: Aron / Dana

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance ±3%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10% or <10 NTU	Salinity ±3%	Color/Odor
08:00	Start Pump										
08:03		0.40	42.36	6.305	7.63	25.32	2.51	81.1	5.77	V. Pale Green	None
08:10	1.0	0.31	42.34	6.080	7.63	25.42	2.29	77.6	2.41		"
08:16	1.3	0.30	42.34	6.076	7.52	25.37	2.27	80.7	1.16		
08:24	2.0	0.30	42.34	6.059	7.51	25.33	2.28	78.9	0.85		
08:30	2.4	0.30	42.28	6.072	7.48	25.61	1.75	77.4	0.79		
08:35	2.6	0.25	42.33	6.037	7.46	26.10	2.37	77.8	0.82		
08:40	2.9	0.25	42.34	6.050	7.51	25.96	2.24	77.6			
08:45	Trip Blank Filled & Labelled										
08:47	Commence filling sample bottles.										
09:38	Final bottle filled. Replace Flow cell & restart pump										
09:41	4.5	0.40	42.42	6.003	7.54	25.72	2.22	74.8	0.28	"	"
				6.017	7.53						
Final Field Parameter Measurements											
09:45	4.6	0.40	42.38	6.017	7.53	25.81	2.24	74.6	0.31	Very Pale Grn	NONE

Flow stopped briefly

Comments: 2" PVC inside 6" Steel standpipe. Lid not locked.

Modified From: Basic Remediation Company Standard operating Procedures
BMI Common Areas Clark County, Nevada
SOP-05 Water sampling and Field Measurements

SOP 5, Revision 2
Northgate Modified : May, 2009

Pat Jimenez

From: Kaleo Paderes [kaleo.paderes@verdant-solutions.com]
Sent: Thursday, August 20, 2009 12:19 PM
To: sharon@environmentalinsurance.com; Patrick Jimenez
Cc: kaleo@verdant-solutions.com; 'Gail'
Subject: RE: Payment for First Insurance Funding - Request for receipts
Attachments: image001.jpg

Sharon/Gail,
We are kindly requesting receipts copies of payments per our monthly insurance payments. Please forward PDF copies to Patrick Jimenez, since all the transactions are automatically debited from our accounts. You can also fax to 949 209 2070.
Thank you and best regards,

Kaleo Paderes
President, CEO
Verdant Solutions, Inc.
1000 Bristol Street North, Suite 17-165, Newport Beach, CA 92660
Toll Free: 877-VS-MAIN | Mobile: 949.903.0238 | Fax: 949.209.2070 | Hawaii: 808.[illegible]5082
Email: kaleo.paderes@verdant-solutions.com

From: sharon@environmentalinsurance.com [mailto:sharon@environmentalinsurance.com]
Sent: Monday, March 16, 2009 3:34 PM
To: kaleo@verdant-solutions.com
Subject: Payment for First Insurance Funding

Hello Kaleo,

We received your payment to First Insurance Funding and the should have been sent to their Illinois address. Can you please have your accounting people send the payment for First Insurance Funding Corp., P.O. Box 3306, Northbrook, IL 60065-3306. If possible, you should include the payment coupon they include with their bill. If you don't have the coupon, please reference your account #1028232 so they can apply the payment correctly. I have attached a copy of the check which I will forward to First Funding in Illinois.

Thank you.

Sharon MacAdam

Sharon MacAdam

9/6/2009

9/6/2009

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LOW FLOW PURGE AND SAMPLE FORM

Office Manager
ISU Insurance Services/BG Environmental
(916)939-1080 Fax: (916)939-1085
E-mail: sharon@environmentalinsurance.com
Website: www.environmentalinsurance.com

Well ID: M-77
Date: 7-20-09
Sample ID: M-77B
Time: 09:30
Analysis: Full Suite
QA/QC -
Dup ID: N/A
Rinsate ID: N/A
MS/MSD ID: M-77BMS, M-77BMSD

Screened Interval (ft): 29 - 43.8
Pump Intake Depth (ft): 42.0
Ave. Flow Rate (gpm/lpm): 0.284
Purging Sampling Device: Bladder Pump
PID Reading at TOC: N/A
Water Level Instrument: Keck + Keck O.P.
Water Quality Meters: YSI + HACH

Well Diameter (in): 2" PVC
Static Water Level(ft): 33.80
Total Well Depth (ft): 44.3
Water Column Length (ft): 10.5
Minimum Purge Volume: N/A
Well Secure - yes/no: DRB 7-20 ~~[illegible]~~ N uncovered
Sampler Name: DANA R [illegible]

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Color ~~Salinity~~ %	Odor ~~TDS~~
08:30	0	Pump On									
08:51	2.5	300	34.20	3.150	7.46	28.21	0.16	88.8	394 ⊖	Dark Black	Mild-stale H_2O
09:00	2.75	300	34.20	3.097 ✓	7.33	28.48 ✓	0.15 ✓	80.1 ✓	418 ⊖	Slight	mild
09:10	3.25	250	34.00	3.101 ✓	7.22 ✓	28.66 ✓	0.15 ✓	80.0 ✓	266 ⊖	Pale Black	mild
09:15	3.75	275	34.02	3.110 ✓	7.28 ✓	28.71 ✓	0.12 ✓	79.7 ✓	251 ⊖	"	"
										"	"
09:30	Begin sample collection = (Primary + MS + MSD)										
12:15	Finish sample collection ~~[illegible]~~ 73 bottles filled										
12:25	9 + 3 + 3 + 3	0.275	34.18	3.210	7.31	28.27	0.01	80.1	204	Very Pale Black	mild
Final Field Parameter Measurements											
12:30	≈ 18	0.275	34.18	3.194	7.24	28.13	0.00	79.2	175	V. Pale Black	mild

Comments: TB = 08:05, Purge water is thick + black @ first. Obvious MnO dust entered well from open top - left off or knocked off by site workers? Water oxidizes strongly to dark black color in HNO_3.

[...]ed From: Basic Remediation Company Standard operating Procedures
[...]on Areas Clark County, Nevada
[...]ampling and Field Measurements

OPP Bottles M-97B = Broken.
Swap by M-97B & Gen - OPP Bottles -

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LOW FLOW PURG ND SAMPLE FORM

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Well ID: M-78
Date: 11 JUNE 09
Sample ID: M-78B
Time: 1250
Analysis: SC, pH, T, DO, ORP, TURB
QA/QC - Dup ID: N/A
Rinsate ID: N/A
MS/MSD ID: N/A

Screened Interval (ft): 21.5-41.5'
Pump Intake Depth (ft): 38.0'
Ave. Flow Rate (gpm/lpm): 0.224
Purging Sampling Device: GEOTECH BLADDER PUMP
PID Reading at TOC: N/A
Water Level Instrument: ~~YSI 556~~ SOLINST 200 KERMIT
Water Quality Meters: YSI 556

Well Diameter (in): 4.0"
Static Water Level(ft) 32.81
Total Well Depth (ft) 45.36
Water Column Length (ft) 12.55' x 0.66
Minimum Purge Volume: 8.28 ~~x 6.66~~
Well Secure - yes/no: Y.
Sampler Name: Y. HANSEN

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Salinity %	TDS
1320	0.5	0.08	32.77	12.03	6.82	27.3	0.57	84.1	14.1		
1325	1.0	1.00	32.87	12.03	6.85	26.7	0.30	79.4	10.2		
1335	2.0	0.02	32.89	12.02	6.89	26.5	0.28	58.0	10.4		
1340	2.5	0.02	32.90	12.00	6.84	26.2	0.22	85.0	5.81		
1435	~~1800~~ 13.0	0.00	32.90	11.98	6.88	26.2	0.08	77.7	0.36		
	Final Field Parameter Measurements										

Comments: 11.0 CLEAR, BUT LIGHT BROWN - YELLOW IN COLOR

Modified From: Basic Remediation Company Standard operating Procedures
BMI Common Areas Clark County, Nevada
SOP-05 Water sampling and Field Measurements

SOP 5, Revision 2
Northgate Modified : May, 2009

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID: M-70
Date: 6-17-05
Sample ID: M-70R
Time: 0950
Analysis:
QA/QC - Dup ID:
Rinsate ID:
MS/MSD ID:

Screened Interval (ft): 21.5-41.5
Pump Intake Depth (ft):
Ave. Flow Rate (gpm/lpm):
Purging Sampling Device: Portable bladder
PID Reading at TOC:
Water Level Instrument: Solinst
Water Quality Meters: YSI, Turbid.tm

Well Diameter (in): 4
Static Water Level(ft) 32.42
Total Well Depth (ft) 45.5
Water Column Length (ft) 12.08
Minimum Purge Volume: 26
Well Secure - yes/no: yes
Sampler Name: DW.S/CWS

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1° C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Salinity %	TDS
0835	3	0.200	32.78	11.68	6.86	26.25	0.40	E4.1	5.42	NA	NA
0840	4	0.200	32.78	11.67	6.86	26.21	0.30	E5.4	6.62	NA	NA
0845	5	0.200	32.78	11.68	6.86	26.28	0.29	E5.3	6.37	NA	NA
0850	6	0.200	32.78	11.67	6.86	26.25	0.25	E4.5	5.58	NA	NA
0855	7	0.200	32.78	11.67	6.86	26.21	0.28	E5.6	5.56	NA	NA
	Final Field Parameter Measurements										
0955	19	0.200	32.79	11.73	6.88	26.16	0.24	76.2	1.42	NA	NA

Comments: Soft bottom. water is translucent, pale yellow green.
Complete sampling 0953.
~~YSI probe recording conductivity in mS/cm~~ DW 6-17-05

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SOP-05 Water sampling and Field Measurements

SOP 5, Revision 2
Northgate Modified : May, 2009

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID: M-89
Date: 9-24-09
Sample ID: M-89B
Time:
Analysis: Full Suite + OPP + OA
QA/QC - Dup ID: Ø
Rinsate ID: Ø
MS/MSD ID: M-89BMS / M-89BMSD

Screened Interval (ft): 18 - 38.2
Pump Intake Depth (ft): 37.5'
Ave. Flow Rate (lpm):
Purging Sampling Device: Bladder Pump
PID Reading at TOC: N/A
Water Level Instrument: Keck
Water Quality Meters: YSI + HACH

Well Diameter (in): 2" PVC
Static Water Level(ft) 32.97
Total Well Depth (ft) 39.99
Water Column Length (ft)
Minimum Purge Volume:
Well Secure - yes/no: No
Sampler Name: Dana R. Brown

Time	Volume Purged (L)	Flow Rate	Water Level (feet - TOC) ± 0.3 ft	Specific Conductance 5%	pH ± 0.1	Temp ± 1° C	DO (mg/l) ± 10%	ORP ± 10%	Turbidity 10%or<10 NT	Color %	Odor
09:14			32.97								
10:57	Ø	Pump started									
10:59		0.200	33.03	12.30	7.03	27.61	0.79	293.8	2.15	V. Pale Yellow/green	slight
11:06	0.33	0.200	33.03	12.41	7.08	27.94	0.38	284.1	2.07	"	"
11:12	0.75	0.250	33.04	12.41	7.04	26.97	0.22	281.0	1.86	"	"
11:17	1.07	0.250	33.05	12.41	7.03	26.78	-0.01	278.9	1.31	"	"
11:22	1.33	0.250	33.04	12.41	7.11	26.68	0.14	274.0	1.27	"	"
11:28	1.70	0.250	33.05	12.41	7.04	26.77	0.12	274.0	1.41	Lightgreen	"
11:33	2.05	0.250	33.04	12.42	6.99	26.85	0.18	275.2	0.92	"	"
11:40	Commence sample collection										
14:20	Finish sample collection 80 bottles filled										
	Final Field Parameter Measurements										
14:28	5.8+	0.200	33.04	12.40	7.07	25.40	0.41	146.2	0.90	Light green	Slight

Comments:

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LOW FLOW PURGE AND SAMPLE FORM

Well ID: M-92
Date: 7-15-09
Sample ID: M-92B
Time: 08:45
Analysis: Full Suite
QA/QC - Dup ID: N/A
Rinsate ID: N/A
MS/MSD ID: M-92BMS / MSD

Screened Interval (ft): 34.9 - 44.9
Pump Intake Depth (ft): 46.0
Ave. Flow Rate (gpm/lpm): 0.252
Purging Sampling Device: Bladder Pump
PID Reading at TOC: N/A
Water Level Instrument: Keck
Water Quality Meters: YSI + HACH

Well Diameter (in): 2" PVC
Static Water Level(ft) 36.67
Total Well Depth (ft) 48.25
Water Column Length (ft) 11.58
Minimum Purge Volume: N/A
Well Secure - yes/no: yes
Sampler Name: Dana R. Brown

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Color Salinity %	Odor TDS
07:11	0	Pump On									
07:21	1.0	0.500	36.97								
07:22	Turned down flow								28.7	V. Pale Yellow	None
07:31	2.0	0.200	36.75	2.627	7.70	25.87	6.42	97.5	23.8	Clear	None
07:41	3.2	0.300	36.78	2.642	7.74	25.39	6.89	98.8	25.4	Clear	None
07:52	4.0	0.200	36.76	2.655 ✓	7.71 ✓	26.05 ✓	6.49 ✓	99.9 ✓	14.5 ✓	"	"
08:02	4.8	0.200	36.78	2.655 ✓	7.73 ✓	26.10 ✓	6.67 ✓	99.2 ✓	21.0 ✓	"	"
08:12	5.2	0.200	36.78	2.665 ✓	7.74 ✓	25.87 ✓	6.81 ✓	98.5 ✓	18.7 ✓	"	"
08:23	6.1	0.200	36.80	2.673 ✓	7.74 ✓	25.76 ✓	6.84 ✓	99.3 ✓	11.3 ✓	"	"
08:45	Begin filling sample bottles:										
13:15	Finish filling sample bottles: 27x3 bottles filled										
13:35	12+3(4)	0.300	36.92	2.733	7.70	25.57	5.55	81.0			
	Final Field Parameter Measurements								7.08	Clear	None
13:30	24	0.250	36.94	2.735	7.69	25.51	5.65	81.7	6.92	Clear	None

Comments: TB = 07:30

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SOP-05 Water sampling and Field Measurements

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID:	M-97	Screened Interval (ft):	35-45	Well Diameter (in):	2" PVC
Date:	7-21-09	Pump Intake Depth (ft):	45.00	Static Water Level(ft)	40.00
Sample ID:	M-97B	Ave. Flow Rate (gpm/lpm):	0.203	Total Well Depth (ft)	47.84
Time:	07:40	Purging Sampling Device:	Bladder Pump	Water Column Length (ft)	7.84
Analysis:	OPP	PID Reading at TOC:	N/A	Minimum Purge Volume:	N/A
QA/QC - Dup ID:	N/A	Water Level Instrument:	Keck + Keck O.D.	Well Secure - yes/no:	Yes
Rinsate ID:	N/A	Water Quality Meters:	YSI + HACH	Sampler Name:	Dana R. Brown
MS/MSD ID:	N/A				

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10% or ≤10 NTU	Salinity %	TDS
06:46	Ø	Pump ON									
06:48	2 cups	Shut down									
07:10	2 cups	Restart									
07:17	1.5	0.200	39.97	4.134	7.32	24.88	3.77	87.8	ORB 7-21-09 ~~Clear~~ 16.3	Clear	None
07:23	1.6	0.200	39.93 ✓	4.153 ✓	7.35 ✓	25.29 ✓	3.61 ✓	88.3 ✓	11.2	"	"
07:30	1.8	0.200	39.93	4.155 ✓	7.37 ✓	25.42 ✓	3.57 ✓	88.9 ✓	6.45	"	"
07:35	2.0	0.200	39.92	4.153 ✓	7.37 ✓	25.43 ✓	3.51 ✓	88.9 ✓	6.67	"	"
07:40	Begin sample collection										
07:46	Finish Sample Collection - 2x 1L ambers only										
	Final Field Parameter Measurements										
07:50	3.0	0.200	40.04	4.156	7.36	24.87	3.70	88.9	1.90	Clear	None

Comments: 07:07 = TB072109-GW1

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BMI Common Areas Clark County, Nevada
SOP-05 Water sampling and Field Measurements

SOP 5, Revision 2
Northgate Modified : May, 2009

Geotechnical Environmental Services, Inc.
7150 Placid St.
Las Vegas, NV 89119

LOW FLOW PURGE AND SAMPLE FORM

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Well ID: M-103
Date: 7-8-09
Sample ID: M-103B
Time: 09:05
Analysis: Full Suite
QA/QC - Dup ID: N/A
Rinsate ID: N/A
MS/MSD ID: N/A

Screened Interval (ft): 69.5 to 89.5
Pump Intake Depth (ft): Not Known
Ave. Flow Rate (gpm/lpm): 0.074
Purging Sampling Device: Dedicated Bladder Pump
PID Reading at TOC: N/A
Water Level Instrument: Keck
Water Quality Meters: YSI + HACH

Well Diameter (in): 2" PVC
Static Water Level(ft) 68.55 @ 07:28
Total Well Depth (ft) Blocked by ded. water pump
Water Column Length (ft) At least 21.45
Minimum Purge Volume: N/A
Well Secure - yes/no: Yes
Sampler Name: Dana R. Brown

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Color ~~Salinity~~ %	Odor ~~TDS~~
07:29	0	Start pump - Immediate drawdown (> excess of 0.3'									
07:35	10 cups	0.100	69.25								
07:45	0.30	0.100	68.83	Set drawdown	meter @	69.13					
08:00	0.45	0.100	68.81								
08:05	0.5	0.11	68.87	2.574	7.38	28.57	6.11	63.2	2.60	Clear	None
08:15	0.75	0.175	68.95	2.582	7.63	27.92	5.77	63.5	2.19	"	"
08:23	1.0	0.150	68.92	2.578	7.67	27.63	5.50	63.5	2.10	"	"
08:30	1.4	0.150	68.94	2.583	7.70	27.41	5.93	63.7	3.35	"	"
08:40	1.6	0.150	68.94	2.584	7.71	27.52	5.80	63.7	2.57	"	"
08:45	1.8	0.150	68.94	2.588	7.70	27.77	5.54	63.3	2.97	"	"
08:50	2.1	0.150	68.94	2.589	7.71	27.91	5.61	63.4	1.97	"	"
Begin Sample Collection @			09:05								
11:34	Finish sample collection			23 bottles filled							
Re-connect Flow cell			69.05								
11:45			69.00	2.617	7.73	30.31	6.71	52.7	3.15	Clear	None
	Final Field Parameter Measurements										
11:50	~~5.0~~ 4.75	0.120	68.97	2.620	7.73	28.48	6.83	54.0	2.88	Clear	None

Comments:

15:27 @ M-103
15:29 @
@ 12:10

Modified From: Basic Remediation Company Standard operating Procedures
BMI Common Areas Clark County, Nevada
SOP-05 Water sampling and Field Measurements

RSAN4 = 0.5

Geotechnical Environmental Services, Inc.
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LOW FLOW PURGE AND SAMPLE FORM

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Well ID:	M-110A	Screened Interval (ft):	30'-40'	Well Diameter (in):	2" PVC
Date:	7-1-09	Pump Intake Depth (ft):	38'	Static Water Level(ft)	31.51
Sample ID:	M-110AB	Ave. Flow Rate (gpm/lpm)	0.224	Total Well Depth (ft)	41.51
Time:	09:00	Purging Sampling Device:	Bladder Pump	Water Column Length (ft)	10.00
Analysis:	Full Suite	PID Reading at TOC:	NA	Minimum Purge Volume:	N/A
QA/QC - Dup ID:	N/A	Water Level Instrument:	Keck	Well Secure - yes/no:	Yes
Rinsate ID:	N/A	Water Quality Meters:	YSI & HACH	Sampler Name:	Dana R. Brown
MS/MSD ID:	N/A				

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Color Salinity %	odor TDS
07:18	0	Pump On									
07:21	0.5	est@ 0.500	32.09	lowered pump rate							
07:28	1.0	0.250	32.81	6.971	6.98	26.29	0.30	79.4	5.31	Clear	No odor
07:40	1.6	0.200	32.97	6.986	6.98	26.37	0.35	78.6	11.0	"	"
07:43	Increase pump rate & attempt to purge dry.										
07:48	2.6	1.2	35.19	6.957	7.02	25.58	0.40	77.8	6.98	"	"
08:00	5.1	1.1	37.09	6.915	7.06	25.66	0.60	77.5	12.9	"	"
① 08:02	Cut flow rate way back										
② 08:07	6.0	0.200		6.917	7.06	26.08	0.62	77.4	9.58	"	"
③ 08:18	7.25	0.250	38.00+	6.911	7.15	25.79	0.68	77.6	9.09	"	"
	Pump shut off to allow recharge.										
08:40	7.25	0	34.16								
08:48	7.25		33.43								
08:58			33.01								
Begin sampling 09:00											
Finish	sample collection & re-hook up flow cell				09:53						
				Final Field Parameter Measurements							
10:00	9.5	0.200	38.00+	6.850	7.07	26.42	0.12	66.5	10.1	"	"

Comments: Pump turned all the way down = 200 ml/min = excessive drawdown

11.37
33.43
37.95
42.16

.33 ft stickup 20' screen 20'-45' Recovery well

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LOW FLOW PURGE AND SAMPLE FORM

Well ID: M-111A
Date: 6-29-09
Sample ID: M-111A.B
Time: 09:55
Analysis: Full Suite
QA/QC - Dup ID: NA
Rinsate ID: NA
MS/MSD ID: NA

Screened Interval (ft): 29.7-39.7
Pump Intake Depth (ft): 40.0
Ave. Flow Rate (gpm/lpm): 0.204
Purging Sampling Device: Bladder Pump
PID Reading at TOC: NA
Water Level Instrument: ~~HACH~~ KECK
Water Quality Meters: YSI 556 mps / HACH 2100P

Well Diameter (in): 2" PVC
Static Water Level(ft) 34.87
Total Well Depth (ft) 42.50
Water Column Length (ft) 7.63
Minimum Purge Volume: N/A
Well Secure - yes/no: YES
Sampler Name: Dana R. Brown

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Color ~~Salinity~~ %	Odor ~~TDS~~
08:51	Ø	Start Pump									
08:56	0.33	0.250	35.15	6.536	7.17	28.93	0.61	82.1	80.0	V. Pale Brn	None
08:57	Lowered	Flow 0.200									
09:00	0.55	0.200	35.00	6.544	7.18	29.60	0.42	82.5	53.9		
09:03	Lost Flow										
09:08	1.0	0.300	25.14	6.576	7.19	29.06	0.20	81.7	36.7	V. Pale Brn	None
09:15	1.5	0.300	35.15	6.560	7.19	28.97	0.18	81.6	33.5	"	"
09:20	2.0	0.200	35.12	6.572	7.18	29.63	0.16	80.9	20.5	"	"
09:25	Flow Stopped			6.581	7.18	30.04					
09:30	2.5	0.375	35.13	6.597	7.18	30.01	2.1	80.0	20.1	"	"
09:35	3.0	0.300	35.12	6.589	7.18	29.51	1.9	80.3	19.5	"	"
09:40	3.5	0.300	35.16	6.594	7.19	29.62	1.7	80.0	13.0	"	"
09:45	3.75	0.300	35.15	6.598	7.18	29.57	1.7	80.2	11.8	"	"
09:50	4.0	0.300	35.16	6.597	7.21	29.17	0.12	79.5	8.32	"	"
09:55	Begin filling bottles		35.16	6.599	7.20	29.38	0.20	80.1	7.99	"	"
10:54	Finish filling bottles										
	Final Field Parameter Measurements										
11:00	6.75	0.300	35.19	6.63	7.17	29.68	-0.04	77.8	6.39	"	"

Comments: 25 lbs pressure; Charge + discharge = 3 sec.

Modified From: Basic Remediation Company Standard operating Procedures
BMI Common Areas Clark County, Nevada
SOP-05 Water sampling and Field Measurements

Call Derrick → Refusal issue

Drilling crew scavenging GRO vials from terracores = NO!
5035 vials Dry = 02 leaked out / not sealed tightly
cover labels = NO

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LOW FLOW PURGE AND SAMPLE FORM

1/2

Well ID:	M-117	Screened Interval (ft):	130 – 150	Well Diameter (in):	2" PVC
Date:	7-6-09	Pump Intake Depth (ft):	Not known	Static Water Level(ft)	74.45
Sample ID:	M-117B	Ave. Flow Rate (gpm/lpm):	0.140	Total Well Depth (ft) ≈150. Tagged 136.60 ft = Top of pump?	
Time:	10:37	Purging Sampling Device:	Dedicated Bladder Pump	Water Column Length (ft)	75.55 Not true well depth
Analysis:	Full Suite	PID Reading at TOC:	N/A	Minimum Purge Volume:	12.54 ~~N/A~~ DCB 7-6-09
QA/QC - Dup ID:	N/A	Water Level Instrument:	Keck	Well Secure - yes/no:	yes
Rinsate ID:	N/A	Water Quality Meters:	YSI + HACH	Sampler Name:	Dana R. Brown
MS/MSD ID:	N/A				

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet-TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Color ~~Salinity~~ %	Odor ~~TDS~~
07:20		Pump ON	601bs	5+5 to	initiate	flow	5.52	Immediate drawdown		Warning occurred	
07:37	2 cups	0.175	78.93		7.57	26.96	67.7 ~~DCB~~	68.6	5.79	Clear	No Odor
07:45	0.4	0.170	77.01	1.191	7.75	26.22	3.56	68.9	25.1 Redo 22.6	"	"
07:55	0.8	0.175	78.33	1.191	7.91	26.23	3.24	67.4	13.1	"	"
07:58	Turned	pump up as fast as possible in attempt to purge well dry.									
08:10	2.0	0.700=max	85.50	1.188	7.99	24.55	2.80	67.1	23.0	"	"
08:20	4.0	0.700	92.97	1.188	8.02	24.64	3.27	66.7	9.33	"	"
08:30	6.0	0.700	99.59	1.188	8.02	24.67	3.25	66.5	9.01	"	"
08:40	8.0	0.700	103.41	1.188	8.05	24.84	3.15	66.4	6.78	"	"
08:50	10.0	0.700	106.51	1.188	8.04	24.76	3.20	66.2	5.99	"	"
09:00	Stopped	pumping =	Burped	DTW = 104.79		Set recharge meter @ 89					
09:25	Stopped	pump	95.23'								
09:35			93.03'								
09:45			90.21'								
10:07	Recharged to 89ft		87.00								
10:18	Restard	adjust flow to lowest	possible value d purge lives								
10:24	10.2	0.100	85.35	1.239	8:02	31.59	3.95	55.9	6.23	Clear	None
	Final Field Parameter Measurements										

Comments: 0.170 = lowest sustainable flow - drawdown excessive
0.8 recharge = 87'

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LOW FLOW PURGE AND SAMPLE FORM

2/2

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Well ID:	M-117	Screened Interval (ft):	130 - 150	Well Diameter (in):	2" PVC
Date:	7-6-09	Pump Intake Depth (ft):	Not known ≈ 105?	Static Water Level(ft)	74.45
Sample ID:	M-117B	Ave. Flow Rate (gpm/lpm):	0.140	Total Well Depth (ft)	≈ 150
Time:	10:37	Purging Sampling Device:	Dedicated Bladder Pump	Water Column Length (ft)	75.55
Analysis:	Full Suite	PID Reading at TOC:	N/A	Minimum Purge Volume:	~~12.54~~ 12.54
QA/QC - Dup ID:	N/A	Water Level Instrument:	Keck	Well Secure - yes/no:	Yes
Rinsate ID:	N/A	Water Quality Meters:	YSI + HACH	Sampler Name:	Dana R. Brown
MS/MSD ID:	N/A				

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ± 0.3 ft	Specific Conductance 5%	pH ± 0.1	Temp ± 1° C	DO (mg/l) ± 10%	ORP ± 10%	Turbidity ± 10% or <10 NTU	Color Salinity %	Odor TDS
10:30	10.5	0.100	84.07	1.215	8.01	31.60	3.87	55.70	6.31	Clear	none
10:35	10.6	0.100	83.91	1.203	8.00	31.72	3.91	55.79	6.07	"	"
10:37	Begin filling sample bottles										
12:44	Last sample bottle filled. Hook up flow cell					300 lbs	Teflon (previously full) 2500 psi			Nitrogen Tank	
	Final Field Parameter Measurements										
12.46	11.2	0.100	87.92	1.209	8.10	33.51	3.19	35.8	2.57		

Comments:

Modified From: Basic Remediation Company Standard operating Procedures
BMI Common Areas Clark County, Nevada
SOP-05 Water sampling and Field Measurements

SOP 5, Revision 2
Northgate Modified : May, 2009

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LOW FLOW PURGE AND SAMPLE FORM

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* = Top of dedicated pump

Well ID:	M-118	Screened Interval (ft):	138' - 158'	Well Diameter (in):	2" PVC
Date:	7-9-09	Pump Intake Depth (ft):	Not Known	Static Water Level(ft)	69.92
Sample ID:	M-118B	Ave. Flow Rate (gpm/lpm):		Total Well Depth (ft)	144.81 *
Time:	08:45	Purging Sampling Device:	Dedicated Bladder	Water Column Length (ft)	
Analysis:	Full Suite	PID Reading at TOC:	N/A	Minimum Purge Volume:	N/A
QA/QC - Dup ID:	N/A	Water Level Instrument:	Keck + Keck DO	Well Secure - yes/no:	Yes
Rinsate ID:	N/A	Water Quality Meters:	YSI + HACH-T	Sampler Name:	Dana R. Brown
MS/MSD ID:	N/A				

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Color Salinity %	Odor TDS
07:19	0	Pump Started									
07:21	10 cups	.150	70.5								
07:27		.175	71.42								
07:35	0.5	0.175	72.05								
07:36		0.100	72.00						Mild	V. Pale Yellow	None
07:45	0.7	0.100	72.00	1.239	7.13	26.90	4.49	61.1	44.3	"	"
08:00	1.0	0.100	72.00	1.237	7.32	26.99	4.17	61.5	41.0	"	"
08:10	1.1	0.100	72.12	1.234	7.80	27.09	4.11	61.9	18.5	"	"
08:15	1.25	0.105≈	72.15	1.232	7.92	27.15	4.44	60.8	11.1	Clear	"
08:20	1.45	0.100	72.16	1.232 ✓	7.94 ✓	27.30 ✓	4.38 ✓	60.5 ✓	8.40 ✓	"	"
08:25	1.7	0.100	72.18	1233 ✓	7.97 ✓	27.38 ✓	4.39 ✓	60.3 ✓	8.11 ✓	"	"
08:30	1.9	0.100	72.23	1.233 ✓	7.96 ✓	27.51 ✓	4.38 ✓	60.5 ✓	8.02 ✓	"	"
08:45 Begin	Sample Collection								5.38 ✓	Clear	
10:30	Standards	0.100	72.30								
11:15	Nitrogen	bottle run out = Switched to #2 bottle									
11:59	finish sample collection - 23 bottles filled. ≅ 3 gallons										
12:10	2.5	0.100	72.17	1.237	8.00	30.00	4.49	47.5	2.09	Clear	None
	Final Field Parameter Measurements										
12:11	2.5+3.0	0.100	72.18	1.239	7.99	30.19	4.34	48.5	2.14	Clear	None

Comments: TB = 08:00

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID: M-120
Date: 7-7-09
Sample ID: M-120AB
Time: 08:45
Analysis: Full Suite
QA/QC - Dup ID: N/A
Rinsate ID: N/A
MS/MSD ID: N/A

Screened Interval (ft): 80' - 100'
Pump Intake Depth (ft): Not Known - Dedicated
Ave. Flow Rate (gpm/lpm): 0.0931
Purging Sampling Device: Dedicated Bladder Pump
PID Reading at TOC: N/A
Water Level Instrument: Keck x 2
Water Quality Meters: YSI + HACH

Well Diameter (in): 2" PVC
Static Water Level(ft) 75.79
Total Well Depth (ft) 87.75 # Dedicated pump
Water Column Length (ft)
Minimum Purge Volume: N/A
Well Secure - yes/no: Yes
Sampler Name: Dana R Brown

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Color ~~Salinity~~ %	Odor ~~TDS~~
07:24	0	Start pump									
07:32	2 cups	Restart									
07:38	1/3 gallon	0.150	75.99								
07:41	1/2 gallon	0.200	76.00	2.400	7.25	24.83	4.96	66.8	81.4	V. Pale Yellow	Ush-smy M
07:50	0.7	0.225	76.14	2.374	7.34	24.29	4.75	65.4	20.3	V.P. Yellow	None
07:59	1.0	0.150	76.05	2.363	7.36	25.73	4.30	64.3	30.6	"	"
08:10	1.5	0.175	75.97	2.355	7.39	26.50	3.84	63.2	3.58	clear	None
08:20	2.1	0.175	75.97	2.353	7.41	26.93	3.88	62.7	1.47	"	"
08:30	2.5	0.175	75.97	2.355	7.42	27.29	3.50	61.8	1.01	"	"
Begin Sample collection @			08:45								
Finish sample collection @			10:50 23 cont. Filled								
11:01	5.8	0.150	75.98	2.356	7.40	28.45	4.68	58.1	0.86	Clear	None
	Final Field Parameter Measurements										
11:05	5.9	0.150	75.99	2.359	7.39	28.56	4.60	58.7	1.07	Clear	None

Comments:

1 x 2243 @ Drill 12/15

Modified From: Basic Remediation Company Standard operating Procedures
BMI Common Areas Clark County, Nevada
SOP-05 Water sampling and Field Measurements

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID: M-121
Date: 7-10-09
Sample ID: M-121B
Time: 07:45
Analysis: Full Suite
QA/QC - Dup ID: N/A
Rinsate ID: N/A
MS/MSD ID: N/A

Screened Interval (ft): 77-97
Pump Intake Depth (ft): Not Known
Ave. Flow Rate (gpm/lpm): 0.388
Purging Sampling Device: Dedicated Bladder Pump
PID Reading at TOC: N/A
Water Level Instrument: Keck + Keck O.D.
Water Quality Meters: YSI + HACH

Well Diameter (in): 7S,45
Static Water Level(ft): 2" PVC
Total Well Depth (ft): 880 = Top of pump
Water Column Length (ft): 21.55
Minimum Purge Volume: N/A
Well Secure - yes/no: Yes
Sampler Name: Dana R. Brown

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Color Salinity %	Odor TDS
06:15	∅	Start Pump									
06:30	0.25	0.100	75.58 ✓	2.955 ✓	7.65 ✓	27.70 ✓	4.56	65.9	9.35 ✓	Clear	None
06:35	0.3	0.100	75.55 ✓	2.918 ✓	7.66 ✓	27.76 ✓	4.20 ✓	65.6 ✓	14.9 —	"	"
06:43	0.5	0.100	75.59 ✓	2.886 ✓	7.67 ✓	26.84 ✓	4.52 ✓	65.0 ✓	16.2 —	"	"
06:53	0.7	0.100	75.60 ✓	2.887 ✓	7.66 ✓	27.09 ✓	4.52 ✓	65.2 ✓	13.9 —	"	"
07:03	1.0	0.100	75.57 ✓	2.890 ✓	7.66 ✓	27.25 ✓	4.02 ✓	65.3 ✓	15.2 —	V. Pale Yellow	None
07:12	1.1	0.100	75.58 ✓	2.884 ✓	7.66 ✓	27.30 ✓	4.09 ✓	65.4 ✓	11.6 —	"	"
07:20	1.25	0.100	75.60 ✓	2.884 ✓	7.65 ✓	27.55 ✓	3.92 ✓	65.5 ✓	9.27 ✓	"	"
07:30	1.4	0.100	75.59 ✓	2.885 ✓	7.67 ✓	27.81 ✓	3.98 ✓	65.4 ✓	8.62 ✓	"	"
07:35	1.6	0.100		2.892 ✓	7.64 ✓	28.14 ✓	4.60 ∅	66.3 ∅	4.03 ✓	"	"
07:40											
07:45	Begin sample collection										
09:41	Finish sample collection			23 bottles filled							
	Final Field Parameter Measurements										
09:47	3.0		75.65	3.151	7.63	27.32	4.71	61.1	1.73	Clear	None

+3.0 = sample bottles

Comments: 07:10 = TB071009-GW1

Modified From: Basic Remediation Company Standard operating Procedures
BMI Common Areas Clark County, Nevada
SOP-05 Water sampling and Field Measurements

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LOW FLOW PURGE AND SAMPLE FORM

Well ID: M-123
Date: 6-17-09
Sample ID: M-123B
Time: 1140
Analysis:
QA/QC - Dup ID: M-123BD
Rinsate ID:
MS/MSD ID:

Screened Interval (ft): 34-51
Pump Intake Depth (ft): 47
Ave. Flow Rate (gpm/lpm): 0.2000 l/m
Purging Sampling Device: Portable bladder
PID Reading at TOC: —
Water Level Instrument: Solinst # 27015
Water Quality Meters: YSI, turbidity

Well Diameter (in): 2
Static Water Level(ft) 41.71
Total Well Depth (ft) 54.4
Water Column Length (ft) 12.69
Minimum Purge Volume: 6
Well Secure - yes/no: yes
Sampler Name: Davis/Quills

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10% or <10 NTU	Salinity %	TDS
1113	2	0.200	41.82	17.33	7.23	27.53	0.16	64.2	4.94	NA	NA
1118	3	0.200	41.82	17.35	7.22	28.01	0.25	67.1	32.2	NA	NA
1123	4	0.200	41.83	17.36	7.22	27.57	0.27	70.1	25.8	NA	NA
1128	5	0.200	41.83	17.36	7.23	27.66	0.22	69.8	27.6	NA	NA
1133	6	0.200	41.83	17.35	7.23	27.66	0.23	70.0	24.5	NA	NA
									22.9 DO	—	
	Final Field Parameter Measurements										
1208	~~+~~ 13	0.200	41.87	17.38	7.25	26.92	0.22	62.9	22.9	NA	NA

Comments: Soft bottom. water is slightly cloudy, pale gray.
~~YSI measures conductivity as mS/cm~~ DO 6-17-09
Darren notes a "chemical" odor to the groundwater; doesn't think it's Veolia

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID: M-125
Date: 6-23-09
Sample ID: M-125B ; M-125BMS ; M-125 BMSD
Time: 10:14
Analysis: Full Suite
QA/QC - Dup ID:
Rinsate ID:
MS/MSD ID: M-125BMS/M-125BMSD

Screened Interval (ft): 35-50
Pump Intake Depth (ft): 49.0
Ave. Flow Rate (gpm/lpm): 0.40
Purging Sampling Device: Bladder pump
PID Reading at TOC: N/A
Water Level Instrument: Solonist
Water Quality Meters: YSI + HACH

Well Diameter (in): 2
Static Water Level(ft) 38.92
Total Well Depth (ft) 53.01
Water Column Length (ft) 14.09
Minimum Purge Volume: —
Well Secure - yes/no: Yes
Sampler Name: Dana R. Brown

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10% or <10 NTU	Salinity %	TDS
09:20	0	Start pump	38.92						Very Cloudy		
09:25		0.450	39.03						" "		
09:30	0.5	0.250	39.03						" "		
09:34	0.9	0.260	39.05	Started	Flow	cell			Cloudy		
09:40	1.5	0.450	39.05	19.30	6.92	26.00	0.35	104.4	297		
09:45	2.0	0.450	39.12	19.22	7.02	25.85	0.34	97.3	140		
09:50			39.09	19.16	7.05	25.90	0.34	94.2	123		
09:55	3.5	0.50	39.09	19.07	7.06	25.70	0.38	93.2	60.4		
10:00	4.0	0.65	39.15	19.02	7.07	25.63	0.40	91.7	320	Turned down	
10:02	4.5	0.55	39.14	19.15	7.08	26.06	0.36	89.9	30.2		
10:05	4.8	0.50	39.13	19.07	7.08	25.86	0.38	87.2	28.8		
10:10	5.00	0.45	39.12	19.05	7.08	25.91	0.39	86.8	27.9		
10:14 Begin collection											
13:35	Finish sample collection & took flow cell back up										
	Final Field Parameter Measurements										
13:44	12.0	0.40	39.09	19.01	7.10	25.96	0.39	71.8	2.91		

Comments: Removed tubing from well prior to sampling, stored in clean plastic bag + returned to well when finished. secured to cap. Pressure @ 25 psi, Charge + discharge = 6 sec. Adjusted to 5/5 @ 09:29. Re-adjusted to 4/6 @ 10:02.

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID: MW-127
Date: 28 MAY 09
Sample ID: MW-127B
Time:
Analysis:
QA/QC - Dup ID:
Rinsate ID:
MS/MSD ID:

Screened Interval (ft):
Pump Intake Depth (ft):
Ave. Flow Rate (gpm/lpm):
Purging Sampling Device:
PID Reading at TOC:
Water Level Instrument:
Water Quality Meters:

Well Diameter (in): 2.0 "
Static Water Level(ft) 38.60
Total Well Depth (ft) ~~38.60~~ 53.40
Water Column Length (ft) 14.8 x 0.17
Minimum Purge Volume: 2.5 gal
Well Secure - yes/no: Y
Sampler Name: V. HANSEN

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1° C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Salinity %	TDS
1500											
1600	2.0 gal		39.30	20.50	7.06	80.8	0.15	-33	385		
1610	4.0			20.53	7.01	78.7	0.05	-53	247		
1620			38.7	20.66	7.07	84.0	OR	-55	311		
1715	11.0		39.8	20.49	6.93	81.2	OR	-38	24		
				Final Field Parameter Measurements							

Comments:

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID:	M-128	Screened Interval (ft):	40-55	Well Diameter (in):	2
Date:	6-18-09	Pump Intake Depth (ft):	47'	Static Water Level(ft)	36.9
Sample ID:	M-128B	Ave. Flow Rate (gpm/lpm):	0.200 lpm	Total Well Depth (ft)	57.6
Time:	0840	Purging Sampling Device:	Portable bladder	Water Column Length (ft)	19.7
Analysis:		PID Reading at TOC:	—	Minimum Purge Volume:	9.5
QA/QC - Dup ID:		Water Level Instrument:	Solinst 22445	Well Secure - yes/no:	yes
Rinsate ID:		Water Quality Meters:	Drawdown - 974, YSI, turbidity.	Sampler Name:	Dains/Wells
MS/MSD ID:					

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1° C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10% or <10 NTU	Salinity %	TDS
0745	2	0.200	37.0	3.339	7.48	25.50	4.15	78.2	316	NA	NA
0750	3	0.200	37.01	3.321	7.52	25.21	4.30	78.8	207	NA	NA
0755	4	0.200	37.03	3.326	7.56	25.51	4.27	76.9	173	NA	NA
0800	5	0.200	37.07	3.312	7.56	26.13	4.50	76.1	109	NA	NA
0805	6.25	0.250	37.07	3.306	7.56	25.22	4.64	75.1	76.0	NA	NA
0810	7.50	0.250	37.06	3.309	7.56	25.17	4.63	75.4	55.6	NA	NA
0815	8.75	0.250	37.06	3.303	7.56	25.28	4.43	72.2	31.7	NA	NA
0820	10.00	0.250	37.06	3.305	7.56	25.30	4.48	74.7	34.8	NA	NA
0825	11.25	0.250	37.06	3.306	7.56	25.08	4.68	76.1	36.0	NA	NA
0830	12.50	0.250	37.07	3.308	7.55	25.03	4.58	77.4	42.7	NA	NA
0835	13.75	0.250	37.04	3.306	7.55	25.08	4.61	77.4	44.4	NA	NA
									~~51~~ DD		
					7.38 DD						
Final Field Parameter Measurements											
1000	36.25	0.250	37.11	3.306	7.58	24.67	5.19	64.9	28.1	NA	NA

Comments: Soft bottom. Water cloudy gray. Chemical ~~smell~~ odor; maybe ceolia. DD 6-18
Had to speed up pump slightly to pump through filters.
Turbidity increases. Check against standard - good.

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID: MW-142
Date: 6-12-09
Sample ID: MW-142B
Time: 0815
Analysis:
QA/QC - Dup ID: NA
Rinsate ID: NA
MS/MSD ID: NA

Screened Interval (ft): 30-45
Pump Intake Depth (ft): ~43
Ave. Flow Rate (gpm/lpm): 0.25 l/m
Purging Sampling Device: Portable bladder
PID Reading at TOC: NA
Water Level Instrument: Solinst
Water Quality Meters: YSI, Turb

Well Diameter (in): 2
Static Water Level(ft) 31.27
Total Well Depth (ft) 45.0
Water Column Length (ft) 13.73
Minimum Purge Volume: 6.59
Well Secure - yes/no: YES
Sampler Name: Davis / Russell

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp. ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10% or <10 NTU	Salinity %	TDS
0850	4	0.250	31.40	3.669	7.55	25.65	5.11	93.4	548	NA	NA
0910	~~12.89~~	0.250	31.38	3.661	7.56	25.60	5.52	92.5	E3	NA	NA
0917	10.75	0.250	31.38	3.659	7.56	25.58	5.34	92.9	E3	NA	NA
0922	12.0	0.250	31.38	3.656	7.56	25.74	5.30	92.9	622	NA	NA
0928	13.5	0.250	31.38	3.653	7.56	25.83	5.25	93.4	363	NA	NA
0933	14.5	0.200	31.37	3.650	7.56	25.99	5.17	92.8	192	NA	NA
0938	15.5	0.200	31.37	3.648	7.55	26.23	4.93	93.2	159	NA	NA
0943	16.5	0.200	31.40	3.659	7.85	25.52	5.25	93.6	184	NA	NA
~~1000~~		~~0.300~~	~~31.45~~	~~3.615~~	~~7.57~~	~~24.96~~	~~5.54~~	~~70.1~~	~~7.91~~	~~NA~~	~~NA~~ DD 6/12/09
	Final Field Parameter Measurements										
1100	35.75	~~0.30~~ 0.25 DD 3/16	31.45	3.675	7.57	24.96	5.54	70.1	7.91	NA	NA

Comments: 0900 Run out of Nitrogen, Swap tanks. Re-establish flow at 0.250 l/m
0910 E3 on turbidity, call Dana B., will log E3 since the meter works on the standard.
Water clear for final parameters

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID: MC-3B
Date: 27 MAY 09
Sample ID: MC-3B
Time:
Analysis:
QA/QC - Dup ID:
Rinsate ID:
MS/MSD ID:

Screened Interval (ft):
Pump Intake Depth (ft): 39.00'
Ave. Flow Rate (gpm/lpm):
Purging Sampling Device:
PID Reading at TOC:
Water Level Instrument:
Water Quality Meters:

Well Diameter (in): 2.0"
Static Water Level(ft) 38.92
Total Well Depth (ft) 44.25
Water Column Length (ft) 10.33 x 0.17
Minimum Purge Volume: 1.76 gal
Well Secure - yes/no: Y
Sampler Name: T.H.

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ± 0.3 ft	Specific Conductance 5%	pH ± 0.1	Temp ± 1° C	DO (mg/l) ± 10%	ORP ± 10%	Turbidity ± 10%or<10 NTU	Salinity %	TDS
1600	0.1	38.87		37.5	7.37	97.6	6.49	-051			
1615	0.2			38.8	7.30	97.5	3.05	-078	11.3		
1630	0.5			37.7	7.30	89.9	0.~~33~~	-079	5.02		
				~~37.8~~	~~7.29~~	~~82.4~~	0.33				
1640	1.5			37.8	7.29	82.4	0.14	-113	2.86		
1645	1.75			37.4	7.28	83.2	0.13	-123	3.15		
1650	2.25			37.1	7.29	82.4	0.12	-112	2.57		
1655	2.75	34.15		37.0		82.9	0.12	-111	2.23		
	Final Field Parameter Measurements										

Comments:

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID: MC-45
Date: 29 MAY 08
Sample ID: MC-45B
Time:
Analysis: GROUND WATER SAMPLING
QA/QC - Dup ID:
Rinsate ID:
MS/MSD ID:

Screened Interval (ft):
Pump Intake Depth (ft):
Ave. Flow Rate (gpm/lpm):
Purging Sampling Device:
PID Reading at TOC:
Water Level Instrument:
Water Quality Meters:

Well Diameter (in): 2.0 IN
Static Water Level(ft) 26.60
Total Well Depth (ft) 36.06
Water Column Length (ft) 9.46 x 0.17
Minimum Purge Volume: 1.6 gal
Well Secure - yes/no: No
Sampler Name: Y HANSEN

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Salinity %	TDS
1153	1.5 gal		26.62	15.26	7.47	79.8	0.14	098	46		
1205	~~2.5 gal~~		26.72	~~15.24~~ 15.26	7.45	79.2	0.07	116	1.4		
1215	3.5 gal	26.72	~~26.82~~	15.38	7.44	78.8	0.01	~~499~~	5.4		
1225	6.0 gal		26.75	15.41	7.42	78.6	0.03	122 → 130	0.96		
				Final Field Parameter Measurements							

Comments: H_2O QUALITY FOR FIRST READING : LIGHT PALE YELLOW IN COLOR - CLEAR ; NO SMELL
4 PARAM READING ; H_2O QUALITY CLEAR

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LOW FLOW PURG[illegible] [illegible]ND SAMPLE FORM

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Well ID:	TR-2	Screened Interval (ft):	144.5-174.5
Date:	5 JUNE 09	Pump Intake Depth (ft):	?
Sample ID:	TR-2B	Ave. Flow Rate (gpm/lpm):	1.44 gpm
Time:	1000	Purging Sampling Device:	GEOTECH BLADDER PUMP
Analysis:	SC, pH, T, DO, ORP, TURB.	PID Reading at TOC:	N/A
QA/QC - Dup ID:	N/A	Water Level Instrument:	SOLIST 200', KECK 150'
Rinsate ID:	N/A	Water Quality Meters:	HACH-40d, 2100P, POCKET PAL ORP
MS/MSD ID:	N/A		

Well Diameter (in):	4.0"
Static Water Level(ft)	27.48'
Total Well Depth (ft)	184.64'
Water Column Length (ft)	157.16' x 0.66
Minimum Purge Volume:	103.73 gal
Well Secure - yes/no:	N
Sampler Name:	VICTORIA HANSEN

Time	Volume Purged 0.5 (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1° C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Salinity %	TDS
1006	~~2.0~~ 2.0 gal	2.0	28.64	965	8.10	78.9	4.71	180	4.64		
1018	1.25 gal	0.51	29.02	967	8.10	79.2	4.73	148	5.44		
1027	1.5	2.8	29.72	964	8.08	79.4	4.70	139	3.46		
1037	1.6-1.75	0.46	29.79	965	8.08	79.4	4.70	125	5.23		
Final Field Parameter Measurements											

Comments: H_2O CLEAR ; SAMPLE NOT TAKE DUE TO NONCOMPLIANCE IN DROP DOWN RATE. ABORT WELL UNTIL FURTHER NOTIFIED.

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LOW FLOW PURGE AND SAMPLE FORM

Well ID: TR-6
Date: 7-17-09
Sample ID: TR-6B
Time: 07:50
Analysis: Full Suite +
QA/QC - Dup ID: N/A
Rinsate ID: EB071709-GW
MS/MSD ID: N/A

Screened Interval (ft): 60' - 80'
Pump Intake Depth (ft): Not Known
Ave. Flow Rate (gpm/lpm): 0.250
Purging Sampling Device: Dedicated Bladder Pump
PID Reading at TOC: N/A
Water Level Instrument: Keck + Keck OD.
Water Quality Meters: YSI + HACH

Well Diameter (in): 4" PVC
Static Water Level(ft) 37.60
Total Well Depth (ft) 81.00 @ pump
Water Column Length (ft) 43.40
Minimum Purge Volume: N/A
Well Secure - yes/no: Yes
Sampler Name: Dana R. Brown

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Color Salinity %	Odor TDS
06:55	Ø	Pump ON	37.60								
07:04	10 Cups	0.150								Clear	None
07:10	0.5	0.200	37.60	14.05	7.06	27.84	1.26 ↓ 1.67 ora	96.5	0.89 1.05	"	"
07:20	0.70	0.200	37.60	13.51	7.08	27.43	1.25	100.8	0.59	"	"
07:30	1.1	0.200	37.60	13.41 ✓	7.10 ✓	27.38 ✓	1.03 ✓	98.9 ✓	0.89 ✓	"	"
07:35	1.2	0.200	37.60	13.44 ✓	7.11 ✓	27.20 ✓	0.97 ✓	98.9 ✓	0.67 ✓	"	"
07:40	1.4	0.200								"	"
07:50	Commence sample collection										
09:10	Finish	sample collection: 29		bottles filled							
09:15	5+4+1	0.20	37.60	16.23	6.85	27.44	0.11	86.5	0.91	Clear	None
	Final Field Parameter Measurements										
09:20	10	0.20	37.60	16.27	6.86	27.19	0.10	87.4	1.23	Clear	None

Comments: TB = 07:17
EB = 09:45

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID: TR-8
Date: 7-14-09
Sample ID: TR-8B
Time: 11:45
Analysis: Full Suite
QA/QC - Dup ID: N/A
Rinsate ID: N/A
MS/MSD ID: N/A

Screened Interval (ft): 63-93
Pump Intake Depth (ft): Not known
Ave. Flow Rate (gpm/lpm): 0.315
Purging Sampling Device: Dedicated Bladder Pump
PID Reading at TOC: N/A
Water Level Instrument: KECK #2
Water Quality Meters: YSI + HACH

Well Diameter (in): 4" PVC
Static Water Level(ft) 51.02
Total Well Depth (ft) 93
Water Column Length (ft) 41.98
Minimum Purge Volume: N/A
Well Secure - yes/no: Yes
Sampler Name: Dana R. Brown

Time	Volume Purged (gal)/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Color Salinity %	Odor TDS
10:45	0	well on									
10:55	0.75	0.250	51.08	1.799	7.89	25.75	6.70	79.3	4.46 ✓	U. Pale Yellow	None
11:05	1.5	0.250	51.11	1.796 ✓	7.88 ✓	25.70 ✓	6.66 ✓	77.8 ✓	4.10 ✓	"	"
11:15	3.25	0.250	51.08	1.789 ✓	7.88 ✓	26.92 ✓	6.80 ✓	79.0 ✓	1.14 ✓	"	"
11:25	4.5	0.250	51.08	1.790 ✓	7.87 ✓	26.73 ✓	5.93 ✓	78.5 ✓	0.86 ✓	"	"
11:45	Commence sample collection										
12:30	Finish sample collection (26 bottles filled)										
	6.2 + 3 gal										
12:40	6.75	0.250	51.08	1.799	7.93	27.05	4.97	83.6	0.51	Clear	None
	Final Field Parameter Measurements										
12:45	7.0 + 3.0 (10)	0.250	51.08	1.796	7.95	27.13	4.99	84.0	0.63	Clear	None

Comments:

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID: TR-10
Date: 7-14-09
Sample ID: TR-10B
Time: 09:00
Analysis: Full Suite
QA/QC - Dup ID: N/A
Rinsate ID: N/A
MS/MSD ID: N/A

Screened Interval (ft): 80-100
Pump Intake Depth (ft): Not Known
Ave. Flow Rate (lpm): 0.22
Purging Sampling Device: Dedicated Bladder Pump
PID Reading at TOC: N/A
Water Level Instrument: Keck + Keck-DD
Water Quality Meters: YSI + HACH

Well Diameter (in): 4" PVC
Static Water Level(ft) ~~59.24'~~ DRS 59.08
Total Well Depth (ft) 100
Water Column Length (ft) 40.92
Minimum Purge Volume: N/A
Well Secure - yes/no: Yes
Sampler Name: Dana R. Brown

Time	Volume Purged (L) ~1	Flow Rate lpm	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity 10%or<10 NTU	Color %	Odor
07:16	0	Pump ON									
07:21		Pump off								Clear	None
07:35		Pump On									
07:42	0.6	0.150	59.05	2.358	7.64	27.65	5.24	87.7	1.22 ✓	Clear	None
07:50	1.25	0.200	59.07	2.358	7.69	27.53	5.10	87.4	1.04 ✓	"	"
07:55	1.5	0.200	59.05	2.356	7.71	27.63	5.08	86.8	0.98 ✓	"	"
08:05	2.0	0.200	59.07	2.354 ✓	7.74 ✓	27.92 ✓	6.07	86.4 ✓	0.71 ✓	"	"
08:10	2.33	0.200	59.08	2.353 ✓	7.74 ✓	28.03 ✓	5.61	86.8 ✓	0.54 ✓	"	"
08:20	2.5	0.200	59.08	2.355 ✓	7.75 ✓	27.92 ✓	5.77 ✓	86.7 ✓	0.42	"	"
08:30	2.75	0.200	59.08	2.351 ✓	7.75 ✓	28.31 ✓	5.70 ✓	85.9 ✓	0.65	"	"
08:40	3.0	0.200	59.08	2.356 ✓	7.76 ✓	27.95 ✓	5.73 ✓	86.3 ✓	0.48	"	"
08:45	3.5	0.200	59.08	2.352 ✓	7.75 ✓	28.03 ✓	5.77 ✓	86.0 ✓	0.41	"	"
09:00	Begin sample collection										
09:59	Finish sample collection - 2 3 bottles filled										
10:10	7.5+3	0.200	59.08	2.370	7.76	29.63	4.67	74.2	0.40	Clear	None
	Final Field Parameter Measurements										
10:15	7.5+3 (10.5)	0.200	59.08	2.371	7.74	29.76	4.94	78.0	0.38	Clear	None

Comments: TB = 0700

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SOP 5, Revision 2
Northgate Modified : May, 2009

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID: PC-40
Date: 1 JUNE
Sample ID: PC-40B
Time: 1245
Analysis: CONDUCT, pH, T, DO, ORP, TURB.
QA/QC - Dup ID: PC-40098
Rinsate ID: N/A
MS/MSD ID: N/A

Screened Interval (ft): 15-55'
Pump Intake Depth (ft): 40'
Ave. Flow Rate (gpm/lpm): 0.13
Purging Sampling Device: GEOTECH GROUNDWATER PUMP
PID Reading at TOC: N/A
Water Level Instrument: SOLINIST 200
Water Quality Meters: HACH 40qd

Well Diameter (in): 2.0"
Static Water Level(ft) 22.38
Total Well Depth (ft) 57.12
Water Column Length (ft) 34.74 x 0.17
Minimum Purge Volume: 5.91 gal
Well Secure - yes/no: Y
Sampler Name: V. HANSEN

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1° C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Salinity %	TDS
1255	1.5 gal	0.15	22.38	19.34	7.10	79.4	0.18	155	15.1		
1305	2.5	0.10		19.36	7.12	79.1	0.14	136	15.1		
1315	4.0	0.15		19.36	7.11	79.1	0.11	133	7.88		
1320	5.0	0.20	22.32	19.36	7.12	79.4	0.10	128	5.01		
1350	7.5	0.08	22.33	19.38	7.11	79.3	0.14	113	1.22		
1400	9.0	0.10	22.33	19.34	7.13	79.9	0.08	102	1.14		
1410	10.0	0.10	22.33	19.34	7.12	79.8	0.07	098	0.77		
				Final Field Parameter Measurements							

Sample →

Comments: GROUNDWATER GREY TO CLEAR

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LOW FLOW PURGE AND SAMPLE FORM

Well ID: M-7B
Date: 6-3-09
Sample ID: M-7BB
Time: 1025
Analysis: SC, pH, T, DO, ORP, TURB.
QA/QC -
Dup ID: N/A
Rinsate ID: N/A
MS/MSD ID: N/A

Screened Interval (ft): 25.5' - 50.5'
Pump Intake Depth (ft): 42.0'
Ave. Flow Rate (gpm/lpm): 0.07
Purging Sampling Device: Bladder Pump
PID Reading at TOC: N/A
Water Level Instrument: Solinst 200'
Water Quality Meters: HACH

Well Diameter (in): 2.0"
Static Water Level(ft): 36.01
Total Well Depth (ft): 54.91
Water Column Length (ft): 18.9 × 0.17
Minimum Purge Volume: 3.21 gal
Well Secure - yes/no: Yes
Sampler Name: Victoria Hansen

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Salinity %	TDS
1025	1.0 gal	0.16	35.99	12.16	7.25	81.7	0.82	105	5.74		
1035	1.5	0.13	36.15	12.00	7.22	83.9	0.78	075	3.31		
1050	2.0	0.0	36.28	12.05	7.25	80.8	0.60	055	3.40		
1200	2.5	0.01	36.28	11.99	7.26	82.2	0.77	045	1.90		
1215	3.0	0.09	36.29	12.08	7.26	82.5	0.49	015	0.98		
1245	5.0	0.00	36.38	12.07	7.24	80.7	0.82	028	056		
			36.38								
Final Field Parameter Measurements											

Sample ? → (margin note beside 1200 row)

Comments: @1055 N_2 out; sample TAKEN @ 1230; Bundit. @ 1300
H_2O clear

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID: PC-40
Date: 1 JUNE
Sample ID: PC-40B
Time: 1245
Analysis: CONDUCT, pH, T, DO, ORP TURB.
QA/QC - Dup ID: PC-40098
Rinsate ID: N/A
MS/MSD ID: N/A

Screened Interval (ft): 15 - 55'
Pump Intake Depth (ft): 40'
Ave. Flow Rate (gpm)/lpm): 0.13
Purging Sampling Device: GEOTECH BLADDER PUMP
PID Reading at TOC: N/A
Water Level Instrument: SOLINST 200'
Water Quality Meters: HACH 40qd

Well Diameter (in): 2.0"
Static Water Level(ft) 22.38
Total Well Depth (ft) 57.12
Water Column Length (ft) 34.74 x 0.17
Minimum Purge Volume: 5.91 gal
Well Secure - yes/no: Y
Sampler Name: V. HANSEN

Time	Volume Purged (gal/L)	Flow Rate (gpm)/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Salinity %	TDS
1255	1.5 gal	0.15	22.38	19.34	7.10	79.4	0.18	155	15.1		
1305	2.5	0.10		19.36	7.12	79.1	0.14	136	15.1		
1315	4.0	0.15		19.36	7.11	79.1	0.11	133	7.88		
1320	5.0	0.20	22.32	19.36	7.12	79.4	0.10	128	5.01		
1350	7.5	0.08	22.33	19.38	7.11	79.3	0.14	113	1.22		
1400	9.0	0.10	22.33	19.34	7.13	79.9	0.08	102	1.14		
1410	10.0	0.10	22.33	19.34	7.12	79.8	0.07	098	0.77		
	Final Field Parameter Measurements										

Sample 1

Comments: GROUNDWATER GREY TO CLEAR

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID:	M-33	Screened Interval (ft):	30-45	Well Diameter (in):	2" PVC
Date:	7-21-09	Pump Intake Depth (ft):	57.0	Static Water Level(ft)	46.75
Sample ID:	M-33B	Ave. Flow Rate (gpm/lpm):	0.260	Total Well Depth (ft)	58.19
Time:	11:15	Purging Sampling Device:	Bladder Pump	Water Column Length (ft)	11.44
Analysis:	Full Suite	PID Reading at TOC:	N/A	Minimum Purge Volume:	N/A
QA/QC - Dup ID:	N/A	Water Level Instrument:	Keck + Keck D.P.	Well Secure - yes/no:	Yes
Rinsate ID:	N/A	Water Quality Meters:	YSI + Hach	Sampler Name:	Dana R. Brown
MS/MSD ID:	N/A				

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Color Salinity %	Odor TDS
10:28	0	Pump On									
	0.5	0.275	46.85	4.672	7.01	28.00	4.66	83.7	18.0	Clear	None
10:43	0.75	0.275	46.90	4.685 ✓	7.01 ✓	28.11 ✓	4.70 ✓	79.9 ✓	10.01	"	"
10:50	1.20	0.250	46.90	4.683 ✓	7.02 ✓	28.11 ✓	4.67 ✓	80.3 ✓	8.40 ✓	"	"
10:55	1.50	0.250	46.90	4.697 ✓	7.02 ✓	28.18 ✓	4.57 ✓	79.7 ✓	6.88 ✓	"	"
11:15	Begin Sample collection										
11:59	Finish Sample collection - 23 bottles filled										
12:05	5.1+3	0.250	47.00	4.906	6.89	26.86	3.24	73.8	C.12	None	None
	Final Field Parameter Measurements										
12:10	5.25+3	0.250	47.03	4.910	6.93	26.77	3.41	74.02	6.19	None	None

Comments:

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LOW FLOW PURG[illegible] [illegible]ND SAMPLE FORM

Well ID: M-6A
Date: 10 JUNE 09
Sample ID: M-6AB
Time: 0900
Analysis:
QA/QC - Dup ID:
Rinsate ID:
MS/MSD ID:

Screened Interval (ft): 26.8 - 41.5
Pump Intake Depth (ft): 40.0'
Ave. Flow Rate (gpm/lpm):
Purging Sampling Device: Bladder Pump
PID Reading at TOC: N/A
Water Level Instrument: Solonist
Water Quality Meters: YSI

Well Diameter (in): 2.0"
Static Water Level(ft): 38.22
Total Well Depth (ft): 47.80
Water Column Length (ft):
Minimum Purge Volume:
Well Secure - yes/no:
Sampler Name: Dana R. Brown

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 3%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10% or <10 NTU	Salinity %	TDS
0910	1.0	~~0.05~~ 0.08 [illegible]	39.18	10.77	7.20	87.86	38.3	80.6	12.8		
0920	1.5	0.05	38.87	10.74	7.19	22.00	1.80	87.5	8.80		
0930	2.0	0.1	39.10	10.63	7.15	21.04	1.55	72.5	7.99		
Turned up rate 09:54	5.7	0.154	41.70	10.65	7.15	26.00	1.61	73.8	6.50		
10:16	11.0	0.24	43.55	10.66	7.16	25.89	1.59	73.7	6.60		
slowed 10:48	11.15 ?	0.075	42.05	10.65	7.15	25.90	1.60	73.7	6.51	stabilized drawdown then sampled.	
	Final Field Parameter Measurements										
10:40	13.5	0.12	45.10	10.63	7.15	26.01	1.57	72.9	6.75	During	Sampling flow turned down.

Comments: Not sampled low flow - purged 3 casing volumes then sampled.

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LOW FLOW PURG[illegible] ND SAMPLE FORM

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Well ID:	M-5A	Screened Interval (ft):	40-50.0'	Well Diameter (in):	3.0"
Date:	4 JUNE 09	Pump Intake Depth (ft):	43.0'	Static Water Level(ft)	38.60'
Sample ID:	M-5AB	Ave. Flow Rate (gpm/lpm):		Total Well Depth (ft)	47.35'
Time:	1000	Purging Sampling Device:	GEOTECH BLADDER PUMP	Water Column Length (ft)	8.75' x 0.38
Analysis:	SC, pH, T, DO, ORP, TURB.	PID Reading at TOC:	N/A	Minimum Purge Volume:	3.33
QA/QC - Dup ID:		Water Level Instrument:	SOLINST /	Well Secure - yes/no:	Y
Rinsate ID:		Water Quality Meters:	HACH 40d / HACH 2QOP	Sampler Name:	V. HANSEN
MS/MSD ID:					

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Salinity %	TDS
1015	3.0		38.87	17.26	6.80	79.6	0.16	082	1.17		
1020	4.0		38.88	17 31	6.79	79.3	0.12	-43	1.46		
1030	5.0		38.89	17.31	6.79	79.4	0.12	-71	1.56	*	
10.50	8.0		38.90	17.28	6.73	79.0	0.17	N/A *	1.39		
	Final Field Parameter Measurements										

Comments: * ORP WATER LOGGED & POSSIBLY SHORTED OUT; WILL GET NEW BATTERIES & DRY OUT.
H_2O CLEAR

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Well ID:	H-48	Screened Interval (ft):		Well Diameter (in):	4.0"
Date:	~~29 30~~ 29 MAY 09	Pump Intake Depth (ft):		Static Water Level(ft)	36.31
Sample ID:	H-48B	Ave. Flow Rate (gpm/lpm):		Total Well Depth (ft)	57.91
Time:		Purging Sampling Device:		Water Column Length (ft)	1.6 × 0.66
Analysis:		PID Reading at TOC:		Minimum Purge Volume:	1.06 gal
QA/QC - Dup ID:		Water Level Instrument:		Well Secure - yes/no:	Y
Rinsate ID:		Water Quality Meters:		Sampler Name:	K. HANSEN
MS/MSD ID:					

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10% or <10 NTU	Salinity %	TDS
1015	1.5			25.8	6.05	81.8	0.13	-036	150		
	Final Field Parameter Measurements										

Comments: 1st PARAM READING H2O BROWN-GREY / OPAQUE IN COLOR/CLARITY ; NO SHEEN @ 10:30 WELL DRY ; RECHARGE SURVEY TILL 1050 ~ NO RECHARGE STILL DRY

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID:	H-39	Screened Interval (ft):	24.9-39.9	Well Diameter (in):	20"
Date:	11 JUNE 09	Pump Intake Depth (ft):	36.0'	Static Water Level(ft)	31.72
Sample ID:	H-39B	Ave. Flow Rate (gpm)/lpm):	0.011 gpm	Total Well Depth (ft)	42.49'
Time:	1045	Purging Sampling Device:	GEOTECH BLADDER PUMP	Water Column Length (ft)	10.77 x 0.17
Analysis:	pH, SC, T, DO, ORP, TURB	PID Reading at TOC:	N/A	Minimum Purge Volume:	1.83
QA/QC - Dup ID:	N/A	Water Level Instrument:	SOLINST 200'; KEY	Well Secure - yes/no:	N - NO LOCK *
Rinsate ID:	N/A	Water Quality Meters:	YSI 556	Sampler Name:	Y-HANSEN
MS/MSD ID:	N/A				

* NO COVER - OVERGROWN/ROCK.

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Salinity %	TDS
1115	2.0	0.015	31.75	8.39	7.05	26.6	0.50	74.5	15.4		
1120	3.0	0.00	31.75	8.39	7.05	26.5	0.41	74.8	8.46		
1125	4.0	0.01	31.76	8.38	7.06	26.5	0.39	74.8	6.76		
1140	5.0	0.02	31.74	8.39	7.07	26.7	1.77	73.1	5.00		
	Final Field Parameter Measurements										

Comments: H2O COLOR LIGHT YELLOW

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Well ID: H-28A
Date: 9 JUNE 09
Sample ID: H-28AB
Time: 0945
Analysis: SC, pH, T, DO, ORP, TURB.
QA/QC - Dup ID: N/A
Rinsate ID: N/A
MS/MSD ID: N/A

Screened Interval (ft): N/A
Pump Intake Depth (ft): 44.0'
Ave. Flow Rate (gpm/lpm): 0.009
Purging Sampling Device: GEOTECH BLADDER PUMP
PID Reading at TOC: N/A
Water Level Instrument: SOLINST 200'; KECK 150'
Water Quality Meters: HANNA 401, 2100T,

Well Diameter (in): 2.0"
Static Water Level(ft) 38.55'
Total Well Depth (ft) 48.24'
Water Column Length (ft) 9.69 x 0.17
Minimum Purge Volume: 1.65 gal
Well Secure - yes/no: Y
Sampler Name: Y HANSEN

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10% or ≤10 NTU	Salinity %	TDS
0950	1.0	0.00	38.55	12.53	6.97	78.9	0.13	097	1.44		
1015	4.5	0.003	38.56	12.55	6.97	78.8	0.13	071	1.07		
1025	6.0	0.00	38.57	12.52	6.98	78.6	0.12	047	0.96		
1155	15.5	0.00	38.54	12.47	7.01	79.6	0.17	047	1.33		
1205	17.0	0.04	38.51	12.49	7.01	78.8	0.12	033	1.09		
	Final Field Parameter Measurements										

Sample

Comments: H2O CLEAR

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID: H-11
Date: 7-13-09
Sample ID: H-11B
Time: 09:00
Analysis: Full Suite
QA/QC - Dup ID: N/A
Rinsate ID: N/A
MS/MSD ID: N/A

Screened Interval (ft): 95'-105'
Pump Intake Depth (ft): 103'
Ave. Flow Rate (lpm): 0.100
Purging Sampling Device: Bladder Pump
PID Reading at TOC: N/A
Water Level Instrument: Keck + Keck O.D.
Water Quality Meters: YSI + HACH

Well Diameter (in): 6" Steel
Static Water Level(ft) 72.29
Total Well Depth (ft) 105'
Water Column Length (ft) 32.71
Minimum Purge Volume: N/A
Well Secure - yes/no: Yes
Sampler Name: Dana R. Brown

Time	Volume Purged (L)	Flow Rate lpm	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity 10%or<10 NT	Color %	Odor
07:46	0	Pump On	72.29							Blackish	mild
07:56	5 Cups	0.200	72.79						21.8	Clear	None
8:07	0.9	0.200	73.52	1.269	7.09	27.11	3.51	-58.3	21.6	"	"
08:18	1.25	0.150	74.00	1.247	6.62	28.41	0.74	-86.1	22.6	"	"
08:28	2.0	0.150	74.25	1.246	6.72	28.51	0.20	-104.9	17.6	"	"
08:33	2.2	0.150	74.46	1.246	6.72	28.73	0.26	-108.8	13.8	Clear	None
08:38	2.5	0.150	74.60	1.246	6.72	28.76	0.25	-112.8	13.0	"	"
08:43	2.7	0.150	74.76	1.247	6.73	28.74	0.24	-112.4	13.5	"	"
08:50	3.0	0.150	74.93	1.246	6.72	28.75	0.26	-112.1	13.9	"	"
Begin filling sample bottles 09:00											
12:40	Finish filling bottles: 27 bottles filled				(Std 23 +4 dissolved)						
	~~3~~ 4.0										
12:50	~~4.00~~	.100	80.81	1,260	6.72	30.03	0.08	-130.3	31.3	Pale brown	None
Final Field Parameter Measurements											
12:59	4.2 (4.0 (sample bottles))	0.100	80.84	1.263	6.75	30.01	0.15	-132.7	30.95	Pale Brn	None

Comments: TB = 06:45

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LOW FLOW PURG[illegible]ND SAMPLE FORM

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Well ID: AA-BW-02
Date: 6-10-09
Sample ID: AA-BW-023
Time:
Analysis:
QA/QC - Dup ID:
Rinsate ID:
MS/MSD ID:

Screened Interval (ft): 33'-53'
Pump Intake Depth (ft):
Ave. Flow Rate (gpm/lpm):
Purging Sampling Device: GeoTech Bladder Pump
PID Reading at TOC:
Water Level Instrument: Solinst 200'
Water Quality Meters:

Well Diameter (in): 4"
Static Water Level(ft) 41.69
Total Well Depth (ft)
Water Column Length (ft)
Minimum Purge Volume:
Well Secure - yes/no: Yes
Sampler Name: Dana R. Brown

ms/cm²

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Salinity %	TDS
11:20	0		41.69								
11:35	Commence	Purge	41.69	15.81	6.77	26.37	1.09	58.8	2.27		
11:40	0.5	0.1	41.71	15.82	6.80	26.90	5.0	69.9	3.82		
11:47	1.0	0.07	41.67	15.83	6.88	26.78	3.5	68.5	3.07		
11:50	1.1	0.03	41.70	15.82	6.89	26.71	3.4	67.7	0.96		
11:53	1.2	0.03	41.69	15.83	6.89	26.61	3.0	67.5	1.10		
11:58	1.35	0.1	41.69	15.83	6.89	26.60	2.9	68.0	1.09		
12:58	3.5	0.078	41.78	15.83	6.90	26.23	1.9	68.8	1.13		
	Final Field Parameter Measurements										
12:58	3.5		41.78	15.83	6.90	26.23	1.9	68.8	1.13		

Comments: Dedicated bladder pump inside well.

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Well ID: H-38
Date: 10-18-09
Sample ID: H-38B
Time: DD 1205 1240
Analysis:
QA/QC - Dup ID:
Rinsate ID:
MS/MSD ID:

Screened Interval (ft): 25-50
Pump Intake Depth (ft): 48
Ave. Flow Rate (gpm/lpm): 0.300 lpm
Purging Sampling Device: Portable bladder
PID Reading at TOC:
Water Level Instrument: Solinst
Water Quality Meters: YSI Turb. Hach

Well Diameter (in): 2"
Static Water Level(ft) 41.59
Total Well Depth (ft) 51.0
Water Column Length (ft) 9.41
Minimum Purge Volume:
Well Secure - yes/no: yes
Sampler Name: Davis/Quealy

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Salinity %	TDS
1125	4	0.300	41.72	17.77	6.87	26.21	0.54	47.1	2.16	NA	NA
1130	5.5	0.300	41.72	17.76	7.00	26.79	0.71	40.1	2.17	NA	NA
1135	7.0	0.300	41.73	17.77	6.95	26.74	0.91	40.8	2.07	NA	NA
1140	8.5	0.300	41.73	17.77	6.96	26.74	1.23	39.0	1.96	NA	NA
1145	10.0	0.300	41.73	17.77	6.96	26.91	1.19	39.5	2.03	NA	NA
1150	11.5	0.300	41.74	17.76	6.95	26.63	1.54	41.9	2.05	NA	NA
1155	13.0	0.300	41.74	17.74	6.96	26.66	1.59	39.5	1.84	NA	NA
1200	14.5	0.300	41.74	17.73	6.96	26.78	1.62	42.9	1.97	NA	NA
			41 Dtw								
	Final Field Parameter Measurements										
1342	45.1	0.300	41.90	17.67	7.07	26.30	0.59	30.9	1.66	NA	NA

Comments: 2" Steel Casing. Soft bottom water clear.
Sample collection at 1205 ABOVE BLANK YSI CONNECTED, DISCONNECT AND START RE-SAMPLING with new bottles.

Modified From: Basic Remediation Company Standard operating Procedures
BMI Common Areas Clark County, Nevada
SOP-05 Water sampling and Field Measurements

SOP 5, Revision 2
Northgate Modified : May, 2009

Geotechnical Environmental Services, Inc.
7150 Placid St.
Las Vegas, NV 89119

LOW FLOW PURGE AND SAMPLE FORM

Well ID: MW-6R
Date: 7-23-09
Sample ID: MW-6RB
Time: 09:17
Analysis: Full Suite
QA/QC - Dup ID: N/A
Rinsate ID: N/A
MS/MSD ID: N/A

Screened Interval (ft): 39.7 - 59.7
Pump Intake Depth (ft): Not Known
Ave. Flow Rate (gpm/lpm): 0.152
Purging Sampling Device: Dedicated Bladder Pump
PID Reading at TOC: N/A
Water Level Instrument: Solinst - Tronox
Water Quality Meters: QED MP-100

Well Diameter (in): 4" PVC
Static Water Level(ft) 42.45
Total Well Depth (ft) 59.7+
Water Column Length (ft) 17.25
Minimum Purge Volume: N/A
Well Secure - yes/no: Yes
Sampler Name: Dana R. Brown

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Color Salinity %	Odor TDS
08:48	0	Start pump									
08:51		0.20	43.55	4.14	6.43	25.74	3.85	223	0.41	Clear	None
08:54			42.56	4.16	6.82	24.86	3.21	224	0.38		
08:57			42.58	4.18	7.10	24.63	2.94	225	0.49		
09:00			42.57	4.19	7.22	24.92	2.85	226	0.19		
09:03			42.56	4.19	7.26	24.96	2.87	227	1.35		
09:06		Begin Purge	42.50	4.20	7.30	24.86	3.05	228			
09:09		0.15	42.56	4.20	7.32	24.97	2.98	228	0.36		
09:12			42.56	4.21	7.33	24.68	2.96	221	0.44		
09:17	Begin Sample Collection										
11:58	Finish sample collection - 23 bottles filled + 3.75 gallons (15 bottles for Time+)										
11:59	Reconnect flow cell & commence temp conditioning prior to final data set collection										
	Final Field Parameter Measurements										
12:10	1.75+3+3.5	0.15	42.56	4.19	7.43	26.20	3.10	187	0.37	Clear	None

Comments: TB = 07:17 David Moore - Timer was our escort. He performed well purging & parameter check using dedicated pump & Timer water level and water quality meters.
152760
152782 @ GTE
152780 @ QES

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LOW FLOW PURGE AND SAMPLE FORM

Well ID: M-11
Date: 7-27-09
Sample ID: M-11B
Time: 09:15
Analysis: Full Suite DRS 7-27
QA/QC - Dup ID: M-11 009B
Rinsate ID: N/A
MS/MSD ID: N/A

Screened Interval (ft): 33.5 - 53.0
Pump Intake Depth (ft): 51.0
Ave. Flow Rate (gpm/lpm): 0.219
Purging Sampling Device: Bladder Pump
PID Reading at TOC: N/A
Water Level Instrument: Keck + Keck OD
Water Quality Meters: YSI + HACH

Well Diameter (in): 6" Steel
Static Water Level(ft) DRS 7/27 41.86007:25
Total Well Depth (ft) DRS ~~53.0~~ 53.0
Water Column Length (ft) 11.14
Minimum Purge Volume: N/A
Well Secure - yes/no: Yes
Sampler Name: Dana R Brown

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1° C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Color Salinity %	Odor TDS
07:56	0	Pump ON									
08:05		0.200	41.91	3.850	7.98	29.66	3.42	110.0	76.1 ⊘	Pale yellow	None
08:09		0.300	41.89	3.852	7.96 ↓	28.92 ↓	3.68 ↑	111.5 ↑	74.1 ⊘	"	"
08:20	~~0~~ 1.5	0.300	41.95	3.834 ↓	7.92 ↓	27.46 ↓	3.62 ↓	111.8 ↑	67.1 ⊘	"	"
08:30	~~2.0~~ 1.75	0.200	41.89	3.825 ↓	7.28 ↓	27.22 ↓	3.32 ↓	162.3 ⊘	52.7	"	"
08:40	2.0	0.250	41.87	3.836 ↑	7.92 ⊘	26.59 ↓	3.86 ⊘	111.3 ⊘	44.4	"	"
08:50	3.0	0.175	41.90	3.832 ↓	7.92 ↓	28.95 ↑	3.77 ↓	110.9 ↓	39.5	"	"
08:55	3.25	0.150	41.90	3.845 ↓	7.92 ↓	29.04 ↓	3.39 ↓	111.1 ↓	37.1	"	"
09:00	3.5	0.300	41.96	3.839 ↓	7.93 ↓	26.86 ⊘	3.82 ⊘	105.3 ↓	35.0	"	"
09:05	3.75	0.250	41.91	3.836 ↓	7.92 ↓	26.08 ↓	4.09 ↓	110.0 ↓	32.9	"	"
09:10	4.0	0.250	41.92	3.828 ↓	7.91 ↓	26.18 ↓	4.01 ↓	110.9 ↓	31.0	"	"
09:15	Begin	Sample collection									
11:50	Finish	Sample collection - 54 bottles filled (dup sample collected+filtered)									
	Final Field Parameter Measurements										
12:05	7.5+7	0.250	41.99	3.872	7.83	27.11	4.25	88.2	37.1	V. Pale Yellow	None

Comments: TB072709-GW01 = 07:22 Inside of 6" steel casing = large patches of scale, some detaching from well

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID: M-10
Date: 7-10-09
Sample ID: M-10B
Time: 11:45
Analysis: Full Suite
QA/QC - Dup ID: N/A
Rinsate ID: N/A
MS/MSD ID: N/A

Screened Interval (ft): 43'-63'
Pump Intake Depth (ft): 61ft
Ave. Flow Rate (gpm/lpm): 0.417
Purging Sampling Device: Bladder Pump
PID Reading at TOC: N/A
Water Level Instrument: Keck + Keck 00
Water Quality Meters: YSI + HACH

Well Diameter (in): 6" Steel
Static Water Level(ft) 46.68
Total Well Depth (ft) 67.15
Water Column Length (ft) 20.47
Minimum Purge Volume: N/A
Well Secure - yes/no: Yes
Sampler Name: Dana R. Brown

Time	Volume Purged (ga)/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10% or <10 NTU	Color ~~Salinity~~ %	Odor ~~TDS~~
10:25	0	Pump ON							Very Turbid	Mod Brn	None
10:30	0.4	0.200	46.79	4.171	7.94	27.06	0.60	61.2	Cloudy	Lt Brn	None
10:40	1.2	0.250	46.82	4.167	7.92	26.59	0.61	60.1	209 ø	"	"
10:47	2.0	~~0.600~~ 250	46.82	4.150	7.88	26.62	0.89	60.9	140 ø	"	"
10:55	2.8	0.300	46.82	4.166	7.84	27.70	1.21	60.7	128 ø	"	"
11:05	~~3.30~~	0.300	46.82	4.161 ✓	7.78 ✓	26.42 ✓	1.41	60.4 ✓	162 ø	Clear	"
11:13	3.5	0.300	46.87	4.151 ✓	7.71 ✓	25.95 ✓	1.78 ø	61.0 ✓	71.5 ø	"	"
11:20	4.2	0.300	46.87	4.149 ✓	7.68 ✓	25.82 ✓	2.03 ø	60.6 ✓	67.6 ø	"	"
11:25	4.8	0.300	46.86	4.146 ✓	7.67 ✓	26.52 ✓	1.95 ✓	60.7 ✓	64.1 ø	"	"
11:30	5.2	0.300	46.82	4.148 ✓	7.64 ✓	26.55 ✓	2.02 ✓	61.0 ✓	61.3 ø	"	"
~~11:40~~											
11:45	Begin Sample Collection ✓										
12:31	Finish	Sample collection ✓		26 bottles filled		(Dissolved sample collected)					
	Final Field Parameter Measurements										
	9.75	0.300	46.99	4.132	7.33	25.18	2.85	58.0	41.4	Cloudy	None

Comments: +4.0 IS 2370 @ M-10

Modified From: Basic Remediation Company Standard operating Procedures
BMI Common Areas Clark County, Nevada
SOP-05 Water sampling and Field Measurements

Geotechnical Environmental Services, Inc.
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Las Vegas, NV 89119

LOW FLOW PURGE AND SAMPLE FORM

Well ID:	M-12A	Screened Interval (ft):	40.0 - 50.0	Well Diameter (in):	3" PVC
Date:	6-30-09	Pump Intake Depth (ft):	48.00	Static Water Level(ft)	40.00
Sample ID:	M-12AB	Ave. Flow Rate (gpm/lpm):	0.151	Total Well Depth (ft)	51.38
Time:	10:10	Purging Sampling Device:	Bladder Pump	Water Column Length (ft)	11.38
Analysis:	Full Suite	PID Reading at TOC:	N/A	Minimum Purge Volume:	N/A
QA/QC - Dup ID:	N/A	Water Level Instrument:	Keck x2	Well Secure - yes/no:	Yes
Rinsate ID:	N/A	Water Quality Meters:	YSI + HACH	Sampler Name:	Dana R. Brown
MS/MSD ID:	N/A				

Time	Volume Purged (ga)/L	Flow Rate (gpm)/lpm	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Color Salinity %	Odor TDS
09:32	0	Pump ON	40.00								
09:35	0.5	0.300	40.12	8.906	7.82	27.31	3.95	77.4	38.4	V. Pale Yellow	None
09:40	0.95	0.300	40.18	8.898	7.83	27.07	4.02	77.8	39.0	"	"
09:45	1.2	0.200	40.10	8.862	7.83	27.42	3.87	77.4	31.6	"	"
09:50	1.6	0.200	40.10	8.872	7.83	28.88	3.75	77.1	33.3	"	"
09:55	2.0	0.200	40.10	8.858	7.83	29.00	3.78	76.6	38.8	"	"
10:00	2.2	0.200	40.10	8.858	7.83	29.21	3.86	76.4	43.6	"	"
Begin filling bottles @ 10:10 am											
Finish filling bottles @ 11:01											
				Final Field Parameter Measurements							
11:12	4.2	0.200	40.20	8.986	7.80	27.35	3.82	73.3	31.0	Very Pale Yellow	None

Comments:

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LOW FLOW PURGE AND SAMPLE FORM

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M-13A

Well ID: M-13A
Date: 6-25-09
Sample ID: M-13AB
Time: 12:15
Analysis: Full Suite
QA/QC - Dup ID: M-1309AB
Rinsate ID: N/A
MS/MSD ID: N/A

Screened Interval (ft): 28-48
Pump Intake Depth (ft): 50.0
Ave. Flow Rate (gpm/lpm): 0.18
Purging Sampling Device: Bladder Pump
PID Reading at TOC: N/A
Water Level Instrument: Keck
Water Quality Meters: YSI + HACH

Well Diameter (in): 6
Static Water Level(ft) 44.95
Total Well Depth (ft) 52.0
Water Column Length (ft) 7.05
Minimum Purge Volume: NA
Well Secure - yes/no: N
Sampler Name: Dana R Brown

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10% or <10 NTU	Salinity %	TDS
11:16	0	Pump Started									
11:23	.75	45.21	~~45.02~~ DRB 6/25/09			— Pump stopped —					
11:24		Pump re-started									
11:30	1.4	0.400	45.23	4.364	7.34	26.64	0.43	-133.3	64.0	V. Pale Yellow	NONE
11:35	2.1	0.400	45.29	4.305	7.40	27.36	1.12	-98.2	45.3	"	"
11:40	2.8	0.400	45.28	4.284	7.46	27.04	1.57	-51.6	33.6	"	"
11:45	3.2	0.400	45.29	4.267	7.49	27.37	1.77	-14.8	27.3	"	"
11:50	4.0	0.375	45.29	4.254	7.54	27.04	1.75	18.8	20.1	Very Slight	"
11:55	4.5	0.400	45.29	4.241	7.53	26.83	2.43	33.6	17.7	Clear	NONE
12:00	4.75	0.400	45.29	4.237	7.53	26.69	2.62	36.9	16.1	"	"
12:05											
12:10											
	Begin Sample Collection @ 12:15 (Primary plus Dup)										
DRB ~~14:05~~ 6/26 14:05	Finish Sample Collection										
DRB 6/26 ~~14:10~~ 14:10	Final Field Parameter Measurements										
	8.7	0.400	45.29	4.181	7.41	25.62	4.60	66.6	9.3	Clear	NONE

Comments: 6" steel well inside 8" steel casing. Top head smashed - top resting on protective casing.

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID: M-17A
Date: 6-24-09
Sample ID: M-17AB
Time: 12:35
Analysis: Full Suite
QA/QC - Dup ID: Ø
Rinsate ID: Ø
MS/MSD ID: Ø

Screened Interval (ft): 35-45
Pump Intake Depth (ft): 42
Ave. Flow Rate (gpm/lpm): 0.294
Purging Sampling Device: Bladder Pump
PID Reading at TOC: N/A
Water Level Instrument: Solonist / Keck
Water Quality Meters: YSI + HACH

Well Diameter (in): 2
Static Water Level(ft) 32.72
Total Well Depth (ft) 44.98
Water Column Length (ft) 12.26
Minimum Purge Volume: N/A
Well Secure - yes/no: Yes
Sampler Name: Dana R. Brown

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Color Salinity %	Odor TDS
11:35	Ø	Start Pump	32.81								
11:45	DRB 3.020	0.550	32.87	15.21	7.22	25.44	5.37	82.3	90.87	Light Grn	None
11:50	6-24 3+ 2.1	0.575	32.86	15.30	7.24	24.82	5.38	80.2	46.8	Light Grn	None
11:55	2.5	0.200	32.85	15.31	7.21	25.31	4.83	81.3	60.0		
12:00	Well Stopped / Restarted			~~15.35~~	~~7.23~~	~~26.66~~	~~4.48~~	~~80.1~~	DRB	6/24/09	
12:05	2.7	0.380	32.84	15.35	7.22	24.73	5.35	83.2	16.1	Light Grn	None
12:10	3.0	0.55	32.85	15.36	7.22	24.62	5.33	83.2	16.1	Light Grn	
12:15	3.2	0.50	32.87	15.36	7.23	24.65	5.29	82.7	9.82	Light Grn	None
12:20	3.4	0.50	32.86	15.35	7.24	24.63	5.33	82.1	15.5		
12:30	4.2	0.50	32.85	15.36	7.22	24.66	5.25	82.1	11.3		
12:35	Commence sample collection										
13:40	End filling bombs										
	Final Field Parameter Measurements										
13:44	10.5	0.45	32.74	15.39	7.24	24.74	5.29	76.8	2.88	Light Grn	None

Comments: Flush mount completion & lid but no securing bolts, expansion plug & no lock.
Pump set @ 42'. pressure = 32 psi 4= charge and discharge.

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID:	M-19	Screened Interval (ft):	UNKNOWN.	Well Diameter (in):	2
Date:	6-19-09	Pump Intake Depth (ft):	39	Static Water Level(ft)	34.4
Sample ID:	M-19B	Ave. Flow Rate (gpm/lpm):	~~0.200~~ 0.250	Total Well Depth (ft)	41.1
Time:	9:10	Purging Sampling Device:	Portable	Water Column Length (ft)	6.7
Analysis:		PID Reading at TOC:	—	Minimum Purge Volume:	2.613
QA/QC - Dup ID:		Water Level Instrument:	Solinst, Pressure down	Well Secure - yes/no:	~~yes~~ NO
Rinsate ID:		Water Quality Meters:	YSI, Turbidity	Sampler Name:	Davis / Rucks
MS/MSD ID:					

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1° C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Salinity %	TDS
0817	4	0.200	34.50	4.171	7.29	24.72	2.21	93.1	2.81	NA	NA
0822	5	0.200	34.50	4.930	7.29	24.63	2.07	87.3	1.41	NA	NA
0827	6	0.200	34.50	4.925	7.25	24.85	1.58	87.7	0.85	NA	NA
0832	7	0.200	34.51	5.108	7.26	24.95	1.55	83.6	0.62	NA	NA
0837	8	0.200	34.51	5.294	7.24	25.17	1.40	80.3	0.72	NA	NA
0842	9	0.200	34.52	5.341	7.29	24.72	1.49	77.4	0.74	NA	NA
0847	10	0.200	34.51	5.422	7.28	24.75	1.50	80.0	0.56	NA	NA
0852	11.25	0.250	34.51	5.521	7.25	24.89	1.30	78.9	0.59	NA	NA
0857	12.5	0.250	34.51	5.530	7.26	24.80	1.32	78.4	0.59	NA	NA
0902	13.75	0.250	34.51	5.576	7.29	24.84	1.38	78.7	0.57	NA	NA
Final Field Parameter Measurements											
1002	28.75	0.250	34.53	5.798	7.26	24.81	0.86	71.3	0.45	NA	NA

Comments: Soft bottom water is clear.
INCREASE Flow to 0.250 to keep a steady low flow.

Modified From: Basic Remediation Company Standard operating Procedures
BMI Common Areas Clark County, Nevada
SOP-05 Water sampling and Field Measurements

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID:	M-21	Screened Interval (ft):	18-38	Well Diameter (in):	2" PVC
Date:	8-4-09	Pump Intake Depth (ft):	43.5	Static Water Level(ft)	40.75
Sample ID:	M-21B	Ave. Flow Rate (lpm):	0.168	Total Well Depth (ft)	44.43
Time:	09:30	Purging Sampling Device:	Bladder pump	Water Column Length (ft)	3.68
Analysis:	Full Suite	PID Reading at TOC:	N/A	Minimum Purge Volume:	N/A
QA/QC - Dup ID:	N/A	Water Level Instrument:	Keck Drawdown Meter	Well Secure - yes/no:	Yes
Rinsate ID:	N/A	Water Quality Meters:	YSI + Hach Turb.	Sampler Name:	Dana R. Brown
MS/MSD ID:	N/A				

Time	Volume Purged (L)	Flow Rate lpm	Water Level (feet - TOC) ± 0.3 ft	Specific Conductance 5%	pH ± 0.1	Temp ± 1° C	DO (mg/l) ± 10%	ORP ± 10%	Turbidity 10%or<10 NTU	Color %	Odor
08:34	0	Pump On									
08:40	0.4	0.250		Recharge not keeping pace with drawdown. Lower pump rate to							0.150
08:42	0.4	0.150	41.05						12.9	Clear	None
08:55	0.5	0.150	40.95	4.060	7.21	32.44	1.93	111.1	8.18 ↓	"	"
09:00	0.6	0.150	40.95	4.054 ↓	7.21 ↓	30.88	1.78 ↓	108.9	9.09 ↑	"	"
09:05	0.65	0.150	40.95	4.039 ↓	7.19 ↓	30.00 ↓	1.93 ↓	108.1 ↓	8.34 ↓	"	"
09:10	0.7	0.150	40.95	4.031 ↓	7.20 ↓	29.86 ↓	1.85 ↓	108.2 ↓	6.47 ↓	"	"
09:15	0.75	0.150	40.95	4.036 ↓	7.21 ↓	29.89 ↓	1.90 ↓	108.1 ↓	6.09 ↓	"	"
09:30	Begin sample collection										
10:26	Finish sample collection =		23 bottles filled								
	Final Field Parameter Measurements										
10:41	3.0+3.0	0.150	40.98	4.006	7.25	26.95	2.23	98.8	6.47	Clear	None

Comments: TB = 06:35 TB080409-W1

FB=11am

Modified From: Basic Remediation Company Standard operating Procedures
BMI Common Areas Clark County, Nevada
SOP-05 Water sampling and Field Measurements

SOP 5, Revision 2
Northgate Modified : May, 2009

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID: M-22A
Date: 6-24-09
Sample ID: M-22AB
Time: 09:06
Analysis: Full Suite
QA/QC - Dup ID: Ø
Rinsate ID: Ø
MS/MSD ID: Ø

Screened Interval (ft): 16'-36'
Pump Intake Depth (ft): 34.00
Ave. Flow Rate (gpm/lpm): 0.268
Purging Sampling Device: Bladder Pump
PID Reading at TOC: N/A
Water Level Instrument: Solonist / HACH
Water Quality Meters:

Well Diameter (in): 2
Static Water Level(ft) 30.33' @ 08:00
Total Well Depth (ft) 36.81'
Water Column Length (ft) 6.48
Minimum Purge Volume: N/A
Well Secure - yes/no: NO
Sampler Name: Dana R Brown

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet-TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Color Salinity %	TDS
08:18	Ø	Start Pump rate = 700ml/min lower rate								Mod-Grn	
08:22	0.7	Restart rate = 550 ml/min					0.16				
05:26	1.5	Adjust rate down =									
08:30	2.25	0.45	30.69	16.48	7.03	25.69	0.16	94.6	557	Mod-Grn	
08:35	3.0	0.53	30.91	16.48	7.05	25.38	~~2.0~~ DRS	94.0	2.01		lower rate
08:40	3.5	0.51	30.81	16.48	7.11	25.58	0.14	89.7	1.17	Lt Grn	
08:45	4.0	0.50	30.80	16.48	7.06	25.47	0.12	93.3	1.15		
08:50	5.0	0.50	30.51	16.49	7.07	25.45	0.15	91.9	1.03	Lt Grn	
08:55	5.5	0.50	30.59	16.47	7.07	25.37	0.17	91.8	1.05	Lt Grn	
09:00	6.0	0.48	30.63	16.48	7.06	25.38	0.13	91.3	1.07		
09:06	Begin	0.49	30.59	16.47	7.07	25.39	0.14	91.4	1.05		
10:19	Finish filling sample bottles										
	Final Field Parameter Measurements										
10:21	8.5	0.50	30.51	16.50	7.06	26.65	0.09	91.0	0.87	Lt Grn	

Comments: Pressure 25 psi 2=charge 7= discharge
No lock present on well. Dedicated bailer inside hole

3x3x6 = 2 Samples 4 pres + 2nd + VOAs

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LOW FLOW PURG··ND SAMPLE FORM

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Well ID: M-28
Date: 5 JUNE 09
Sample ID: M-23B
Time: 1310
Analysis: SC, PH, T, DO, ORP, TURB
QA/QC - Dup ID: M-23009B
Rinsate ID: N/A
MS/MSD ID: N/A

Screened Interval (ft): 9.4-37.4'
Pump Intake Depth (ft): 36.0'
Ave. Flow Rate (gpm/lpm): 0.01 gal/min
Purging Sampling Device: GEOTECH BLADDER PUMP
PID Reading at TOC: N/A
Water Level Instrument: SOLINST 200', KECK 158'
Water Quality Meters: HACH 40d 2100P POCKET PAL ORP

Well Diameter (in): 2.0"
Static Water Level(ft) 29.15'
Total Well Depth (ft) 44.90'
Water Column Length (ft) 15.75' X0.17
Minimum Purge Volume: 2.68
Well Secure - yes/no: N
Sampler Name: VICTORIA HANSEN

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ± 10%or<10 NTU	Salinity %	TDS
1315	1.0	~~29.16~~ 0.01	29.16	5.90	7.19	77.3	0.31	133	2.06		
1325	2.0	0.01	29.15	5.91	7.20	77.0	0.27	145	1.86		
1335	3.0	0.00	29.15	5.91	7.20	76.9	0.24	150	0.96		
1405	6.0	0.00	29.16	5.88	7.20	77.0	0.30	188	0.96		
	Final Field Parameter Measurements										

Comments: H2O CLEAR

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SS08-02 & 04 sent to Joni SS08-01 now versions >

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID:	~~M-25~~ PRB 6-30-09 M-25	Screened Interval (ft):	24.0 - 39.0	Well Diameter (in):	4" Steel
Date:	6-30-09	Pump Intake Depth (ft):	39.0	Static Water Level(ft)	33.56
Sample ID:	~~M-25FB~~ PRB M-25B	Ave. Flow Rate (gpm/lpm):	0.210	Total Well Depth (ft)	41.92
Time:	07:45 6-30-09	Purging Sampling Device:	Bladder Pump	Water Column Length (ft)	8.36
Analysis:	Full Suite	PID Reading at TOC:	NA	Minimum Purge Volume:	N/A
QA/QC - Dup ID:	N/A	Water Level Instrument:	Keck x 2	Well Secure - yes/no:	Yes
Rinsate ID:	N/A	Water Quality Meters:	YSI + HACH	Sampler Name:	Dana R. Brown
MS/MSD ID:	N/A				

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Color ~~Salinity~~ %	Odor ~~TDS~~
07:12	0	Start Pump								Lt. Yellowish-Green	None
07:20	0.6	0.200	33.69	11.29	7.03	25.93	0.24	81.9	1.06	"	"
07:30	1.2	0.300	33.62	11.28	7.10	26.60	0.24	82.2	0.82	"	"
07:35	2.0	0.300	33.79	11.30	7.12	26.57	0.25	81.6	0.80	"	"
07:40	2.25	0.350	33.78	11.28	7.12	25.79	0.16	82.2	0.69	"	"
07:45	2.50	0.300	33.76	11.28	7.10	26.20	0.17	82.3	0.71	"	"
Begin Sample collection 07:45											
Finish @ 08:30											
	Final Field Parameter Measurements										
08:40	5.0	0.350	34.00	11.26	7.12	26.85	0.04	79.3	1.40	"	"

Comments:

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID: M-29
Date: 6-16-09
Sample ID: M-29S
Time: ~~0845~~ 0900
Analysis:
QA/QC - Dup ID:
Rinsate ID:
MS/MSD ID:

Screened Interval (ft):
Pump Intake Depth (ft): NA
Ave. Flow Rate (gpm/lpm):
Purging Sampling Device: TEFLON BAILER
PID Reading at TOC:
Water Level Instrument: SOLINST #27045
Water Quality Meters: YSI 1662
Turbidity 393

Well Diameter (in): 2
Static Water Level(ft) 33.8
Total Well Depth (ft) 42
Water Column Length (ft) 8.2
Minimum Purge Volume: 4
Well Secure (yes) no: Yes.
Sampler Name: Davis/Quills

Time	Volume Purged (gal/l)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10% or <10 NTU	Salinity %	TDS
0845	5.5	—	34.26	4-603	6.47	27.63	4-06	168.2	541	NA	NA
				~~5.~~	~~6.351~~	~~29.44~~	⇒ OFF				
0943	Final Field Parameter Measurements										
~~0943~~ 0944 DI	—	—	34.58	4.842	6.34	27.10	3.10	134.1	616	NA	NA

Comments: Purged ~5.5 gallons collected samples for annual sampling event. Start sampling at 9:00, Complete sampling at 9:40. Take final readings.

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID:	M-3iA	Screened Interval (ft):	35-55	Well Diameter (in):	2" PVC
Date:	8-3-09	Pump Intake Depth (ft):	53.0'	Static Water Level(ft)	43.42
Sample ID:	M-3iAB	Ave. Flow Rate (gpm/lpm):	0.209	Total Well Depth (ft)	55.00
Time:	09:15	Purging Sampling Device:	Bladder Pump	Water Column Length (ft)	11.58
Analysis:	Full Suite	PID Reading at TOC:	N/A	Minimum Purge Volume:	N/A
QA/QC - Dup ID:	N/A	Water Level Instrument:	Keck Drawdown Meter	Well Secure - yes/no:	Yes
Rinsate ID:	N/A	Water Quality Meters:	YSI + HACH Turb.	Sampler Name:	Dana R. Brown
MS/MSD ID:	N/A				

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC)	Specific Conductance	pH	Temp	DO (mg/l)	ORP	Turbidity	Color / Salinity	Odor / TDS
			±0.3 ft	5%	±0.1	±1°C	±10%	±10%	±10% or <10 NTU	%	
08:00	0	Pump ON									
08:15	0.25	0.200	42.99	8.299	7.11	26.91	0.74	103.2	Very Turbid	-Yellowish Brn	None
08:25	0.6	0.200	43.01	8.231	7.16	27.06	0.52	104.0	Very Turbid	"	"
08:30	0.9	0.200	43.59 ↓	8.153 ↓	7.21 ↓	26.90 ↓	0.47 ↓	103.3 ↓	Very Turbid ↓	Yellowish Brn	None
08:35	1.4	0.200	43.57 ↓	8.169 ↓	7.20 ↓	26.88 ↓	0.42 ↓	104.5 ↓	81.9	Yellow-green	None
08:40	1.8	0.200	43.56 ↓	8.181 ↓	7.17 ↓	26.85 ↓	0.37 ↓	107.4 ↓	36.6	"	"
08:45	2.3	0.200	43.56	8.184 ↓	7.17 ↓	26.98 ↓	0.33 ↓	108.1 ↓	21.8	"	"
08:50	2.5	0.200	43.57	8.183 ↓	7.17 ↓	26.99 ↓	0.35 ↓	107.9 ↓	20.91	"	"
09:00	2.8	0.200	43.56	8.188 ↓	7.16 ↓	27.02 ↓	0.36 ↓	108.3 ↓	20.2	"	"
09:15	Begin Sample Collection 27			DRB 8/3/09							
10:20	Finish Sample Collection - 5 bottles filled (collected dissolved set)										
	Final Field Parameter Measurements										
10:30	4.8+3.5 = 8.3	0.200	43.64	8.329	7.36	32.40	1.09	92.2	25.8	Lt Yell Grn	None

Comments: TB = TB080309-GW1 @ 07:41

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID: M-34
Date: 6-19-05
Sample ID: M-34B
Time: 1140
Analysis: —
QA/QC - Dup ID: —
Rinsate ID: —
MS/MSD ID: —

Screened Interval (ft): [illegible]
Pump Intake Depth (ft): 40
Ave. Flow Rate (gpm/lpm): 0.300
Purging Sampling Device: Portable bladder
PID Reading at TOC: —
Water Level Instrument: Solinst, Keck
Water Quality Meters: YSI, Turbidity

Well Diameter (in): 2
Static Water Level(ft) 36.90
Total Well Depth (ft) 42.8
Water Column Length (ft) 5.9
Minimum Purge Volume: 3
Well Secure - yes/no: N
Sampler Name: Davis/Quills

Time	Volume Purged (gal/(l))	Flow Rate (gpm/lpm)	Water Level (feet- TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Salinity %	TDS
1058	3	0.300	36.92	11.18	7.14	26.18	0.10	84.5	5.34	NA	NA
~~1103~~	~~4.5~~	~~0.300~~	~~36.93~~	~~11.20~~	~~7.19~~	~~26.35~~	~~0.45~~	~~93.5~~		~~NA~~	~~NA~~
1108	6.0	0.300	36.93	11.20	7.14	26.37	0.51	75.9	4.77	NA	NA
1113	7.5	0.300	36.93	11.19	7.16	26.21	0.40	77.9	4.61	NA	NA
1118	9.0	0.300	36.93	11.19	7.15	26.21	0.62	79.3	4.91	NA	NA
1123	10.5	0.300	36.93	11.19	7.17	26.24	0.37	75.7	1.40	NA	NA
1128	12.0	0.300	36.93	11.20	7.17	26.37	0.32	73.0	1.19	NA	NA
1133	13.5	0.300	36.92	11.20	7.12	26.21	0.38	80.4	1.10	NA	NA
	Final Field Parameter Measurements										
1250	36.6	0.300	36.96	11.21	7.14	25.33	0.12	76.2	0.58	NA	NA

1105-

Comments: lose flow / Pump during liter because of heat or battery. Silt bottom water translucent, light green.

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LOW FLOW PURGE AND SAMPLE FORM

Area 1
I-5

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Well ID: M-35
Date: 7-24-09
Sample ID: M-35B
Time: 11:10
Analysis: Full Suite
QA/QC - Dup ID: N/A
Rinsate ID: N/A
MS/MSD ID: N/A

6 cool colors

Screened Interval (ft): 34.5-44.5
Pump Intake Depth (ft): 43'
Ave. Flow Rate (gpm/lpm): 0.284
Purging Sampling Device: Bladder Pump
PID Reading at TOC: N/A
Water Level Instrument: Keck + Keck OD
Water Quality Meters: YSI + HACH

Well Diameter (in): 2" PVC
Static Water Level(ft): 34.35
Total Well Depth (ft): 43.20
Water Column Length (ft): 8.85
Minimum Purge Volume: N/A
Well Secure - yes/no: Yes
Sampler Name: Dana R. Brown

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1° C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Color ~~Salinity~~ %	Odor ~~TDS~~
10:18											
10:22	0.4	0.400	34.40	3.124	7.47	28.61	1.16	90.9	16.0	Clear	None
10:29	1.1	0.400	34.40	3.293	7.23	28.06	0.67	105.0	9.999	"	"
10:35	2.2	0.400	34.40	3.539 ✓	7.41	27.86 ✓	0.56 ✓	95.5 ✓	4.37 ✓	Lt grn	"
10:40	2.5	0.400	34.40	3.705 ✓	7.39 ✓	27.84 ✓	0.51 ✓	96.2 ✓	4.36 ✓	"	"
10:45	3.0	0.400	34.40	3.873 ✓	7.38 ✓	27.79 ✓	0.52 ✓	97.9 ✓	2.06 ✓	"	"
10:50	3.25	0.400	34.40	3.909 ✓	7.41	27.98 ✓	0.53 ✓	~~95.6~~ DRB 7/24 98.2 ✓	2.18 ✓	V pale grn	
11:10	Commence sample collection										
11:55	Finish sample collection - 23 bottles filled										
	Final Field Parameter Measurements										
12:10	6+3	0.400	34.40	4.606	7.32	27.90	0.37	95.8	2.17	V pale grn	None

Comments: 407 5592239

Tronox Gene -2801 13:10
RSAH3

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID: M-39
Date: 6-16-09
Sample ID: M-39B
Time: 1200
Analysis:
QA/QC - Dup ID:
Rinsate ID:
MS/MSD ID:

Screened Interval (ft): 24.9-39.9
Pump Intake Depth (ft): ~38.5
Ave. Flow Rate (gpm/lpm):
Purging Sampling Device: Portable Bladder
PID Reading at TOC: -
Water Level Instrument: Solinst, draw down
Water Quality Meters: YSI, Turbidity

Well Diameter (in): 2
Static Water Level(ft) 31.83
Total Well Depth (ft) 42.0
Water Column Length (ft) 10.17
Minimum Purge Volume: 4.88
Well Secure - yes/no: YES
Sampler Name: Davis / Walls

Time	Volume Purged (gal)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance ±5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10% or <10 NTU	Salinity %	TDS
1120	3	0.200	31.87	0.274	7.02	26.54	0.58	84.0	58.5	NA	NA
1125	4	0.200	31.87	0.216	7.02	26.46	0.61	82.0	56.2	NA	NA
1130	5	0.200	31.87	0.182	7.02	26.93	0.70	81.6	34.7	NA	NA
1135	6	0.200	31.87	0.184	7.09	26.85	0.55	81.7	15.9	NA	NA
1140	7	0.200	31.86	0.164	7.07	27.04	0.47	81.2	11.7	NA	NA
1145	8	0.200	31.86	0.194	7.08	27.21	0.54	79.8	8.14	NA	NA
1150	9	0.200	31.86	0.182	7.07	27.46	0.47	80.1	4.17	NA	NA
1155	10	0.200	31.86	0.192	7.07	27.50	0.49	77.5	3.85	NA	NA
	Final Field Parameter Measurements										
1216	14.2	0.200	31.88	0.115	7.05	26.12	0.27	77.5	1.94	NA	NA

Comments: Soft bottom. Water is translucent, pale yellow

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LOW FLOW PURG[illegible]ND SAMPLE FORM

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Well ID: M-44
Date: 8 JUNE 09
Sample ID: M-44B
Time: 1220
Analysis: SC, pH, T, DO, ORP & TURB
QA/QC - Dup ID: N/A
Rinsate ID: N/A
MS/MSD ID: N/A

Screened Interval (ft): 5-35' ft
Pump Intake Depth (ft): 33.0' ft
Ave. Flow Rate (gpm/lpm): 0.10 gpm
Purging Sampling Device: GEOTECH BLADDER PUMP
PID Reading at TOC: N/A
Water Level Instrument: SOLINST 200'
Water Quality Meters: HACH 40d, 21000, POCKET PAL ORP

Well Diameter (in): 20"
Static Water Level(ft) 20.75'
Total Well Depth (ft) 37.05'
Water Column Length (ft) 16.30 x 0.17
Minimum Purge Volume: 2.77 gal
Well Secure - yes/no: Y
Sampler Name: V. HANSEN

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ± 0.3 ft	Specific Conductance 5%	pH ± 0.1	Temp ± 1° C	DO (mg/l) ± 10%	ORP ± 10%	Turbidity ± 10% or < 10 NTU	Salinity %	TDS
1230	1.0	0.15	20.090	11.05	7.44	79.2	0.26	—	—		
1310	3.0	0.04	20.98	9.53	7.52	78.0	0.84	155	2.10		
1315	3.5	0.20	20.88	9.26	7.52	78.4	0.47	140	2.12		
1320 1400	4.0	0.02	20.89	9.28	7.52	78.4	0.43	125	1.51		
1330	4.5	0.20	20.99	9.17	7.53	77.8	0.33	138	1.51		
1345	6.5	0.015	21.02	9.13	7.56	77.4	0.43	102	0.46		
	Final Field Parameter Measurements										

Comments: H2O CLEAR

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LOW FLOW PURGE AND SAMPLE FORM

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Well ID: M-50
Date: 8-3-09
Sample ID: M-50B
Time: 12:05
Analysis: Full Suite
QA/QC - Dup ID: N/A
Rinsate ID: N/A
MS/MSD ID: N/A

Screened Interval (ft): 39.6 - 59.6
Pump Intake Depth (ft): 60.5'
Ave. Flow Rate (gpm/lpm): 0.205
Purging Sampling Device: Bladder Pump
PID Reading at TOC: N/A
Water Level Instrument: Keck Drawdown Meter
Water Quality Meters: YSI + HACH Turb

Well Diameter (in): 2" PVC
Static Water Level(ft) DRB 8/3/09 ~~45.95~~ 45.95
Total Well Depth (ft): 62.5
Water Column Length (ft): 16.55
Minimum Purge Volume: N/A
Well Secure - yes/no: Yes
Sampler Name: Dana R. Brown

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Color Salinity %	Odor TDS
11:15	0	Pump ON									
11:25	0.5	0.200	46.01	16.15	7.21	31.45	1.40	90.0	40.4	V. Pale Green	None
11:30	0.7	0.250	46.13	16.28	7.18	28.67	0.97	95.8	25.5	"	"
11:35	1.0	0.150	46.04	16.21	7.18	30.45	0.89	97.3	17.8	"	"
11:40	1.1	0.150	46.02	16.29	7.19	31.29	0.90	99.1	14.1	"	"
11:45	1.25	0.250	46.04	16.34	7.20	32.45	0.87	99.5	7.59	"	"
11.50	1.6	0.200	46.06	16.30	7.20	32.44	0.91	98.6	9.01	"	"
12:05	Begin	sample collection									
12:55	Finish	sample collection (23 bottles filled)									
	Final Field Parameter Measurements										
13:15	3.5 +3.0	0.200	46.27	16.34	7.23	31.21	1.03	94.2	6.5	Pale Green	None

Comments: 35+ ~~mph~~ mph gusts, sustained 15-20 mph winds.

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LOW FLOW PURGE AND SAMPLE FORM

34.35

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Well ID: M-52
Date: 7-24-09
Sample ID: M-52B
Time: 08:10
Analysis: Full Suite
QA/QC - Dup ID: N/A
Rinsate ID: N/A
MS/MSD ID: N/A

Screened Interval (ft): 34.5 - 44.5
Pump Intake Depth (ft): 44'
Ave. Flow Rate (gpm/lpm): ~~0.054~~ 0.146 DRS 7/29
Purging Sampling Device: Bladder Pump
PID Reading at TOC: N/A
Water Level Instrument: Keck + Keck D.D.
Water Quality Meters: YSI + HACH

Well Diameter (in): 2" PVC
Static Water Level(ft) 38.86' @ 06:25
Total Well Depth (ft) 47.50
Water Column Length (ft) 8.64
Minimum Purge Volume: N/A
Well Secure - yes/no: Yes
Sampler Name: Dana R. Brown

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Color Salinity %	odor TDS
06:40	~~0~~	Start purge - Immediate drawdown past 0.3 ft.									
		Drawdown is an issue - slow pumped 100 ml/min = lowest sustainable flow								Pale Grey	Slight
07:02			39.22								
07:10	1.25	0.050	38.96	7.853	7.29	27.15	4.10	112.9	7.10 ✓	Pale Grn	Slight
07:15	1.4	0.100	38.93	7.818 ✓	7.30 ✓	27.81 ✓	3.84 ✓	112.6 ✓	8.78 ✓	"	"
07:20	1.5	0.075	38.92	7.787 ✓	7.31 ✓	28.47 ✓	3.70 ✓	111.2 ✓	8.11 ✓	"	"
07:25	1.5	0.050	38.92	7.783 ✓	7.31 ✓	28.83 ✓	3.75 ✓	110.8 ✓	7.2 ✓	"	"
07:30	1.7	0.050	38.92	7.791 ✓	7.31 ✓	29.08 ✓	3.49 ✓	111.4 ✓	7.80 ✓	"	"
07:35	1.8	0.200	39.09	7.834 ✓	7.32 ✓	28.12 ✓	4.24 ~~2~~	110.2 ✓	6.97 ✓	"	"
07:40	1.9	0.150	39.05	7.784 ✓	7.30 ✓	27.38 ✓	4.14 ✓	110.2 ✓	6.85 ✓	"	"
07:45	2.1	0.100	39.04	7.785 ✓	7.30 ✓	27.39 ✓	4.11 ✓	110.3 ✓	7.90 ✓	"	"
07:50	2.2	0.150	39.07	7.739 ✓	7.32 ✓	27.19 ✓	4.08 ✓	109.8 ✓	7.90 ✓	"	"
08:10	Begin Sample Collection										
09:16	Finish Sample collection 23 bottles filled										
					7.27						
	Final Field Parameter Measurements										
09:25	3.2+3.0	0.150	39.16	8.268	~~5.264~~ DRS 7-24-09	26.37	4.65	93.9	4.04	Pale Grn	Slight

Comments: TB = 07:07

Geotechnical Environmental Services, Inc.
7150 Placid St.
Las Vegas, NV 89119

LOW FLOW PURGE AND SAMPLE FORM

Page__ of __

Well ID: M-64
Date: 6-26-09
Sample ID: M-64B
Time: 12:35
Analysis: Full Suite
QA/QC - Dup ID: N/A
Rinsate ID: N/A
MS/MSD ID: N/A

Screened Interval (ft): 12.7-37.3
Pump Intake Depth (ft): 35
Ave. Flow Rate (gpm/lpm): 0.170
Purging Sampling Device: Bladder Pump
PID Reading at TOC: NA
Water Level Instrument: Keck
Water Quality Meters: YSI + HACH

Well Diameter (in): 2" PVC
Static Water Level(ft) 29.59
Total Well Depth (ft) 36.90
Water Column Length (ft) 7.31
Minimum Purge Volume: NA
Well Secure - yes/no: Yes
Sampler Name: Dana R. Brown

Time	Volume Purged (gal/L)	Flow Rate (gpm/lpm)	Water Level (feet - TOC) ±0.3 ft	Specific Conductance 5%	pH ±0.1	Temp ±1°C	DO (mg/l) ±10%	ORP ±10%	Turbidity ±10%or<10 NTU	Color Salinity %	Odor TDS
10:59	0	Pump Started Then shut off									
11:08		Restart pump							Very Slight	V. Pale Green	No
11:20	1.7			10.84	7.21	27.97	0.31	76.2			
11:25	2.5	0.450	Below 32'	10.84	7.20	28.34	0.35	72.3			
11:31	NOTE:	No recharge to well. Turned up pump rate to approx							to pump dry		
11:44	5.0	0.400	34.00	10.85	7.21	27.60	0.29	78.1	12.8	Very Pale grn	
	- Turn up pump rate again - not pump										
11:55	6.2		Below ~~pump~~	10.85	7.22	28.07	1.73	79.7	4.47	Very Pale green	
12:00	6.8		Below pump	10.87	7.19	28.09	1.76	80.0	5.54		
12:05	7	Pump off									
12:07			33.81								
12:10			~~31.00~~	DRS							
12:19			31.00								
12:31			30.00								
~~12:35~~	Begin Sample collection										
13:34	End Sample collection										
	Final Field Parameter Measurements										
13:40	7.2	0.400	Below top of pump	10.71	7.30	29.48	1.75	83.4	3.15	V. Pale Green	No

Comments:

Modified From: Basic Remediation Company Standard operating Procedures
BMI Common Areas Clark County, Nevada
SOP-05 Water sampling and Field Measurements

ENSR | AECOM

Well ID: M-6AB

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC
Project No: 04020-023-4312
Site Location: Henderson, NV
Weather Conds: HOT / CLEAR
Date: 6/27/08
Time: Start 0950 am/pm
Finish _____ am/pm
Collector(s): S. Wang / J. Trafasso

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 48.02 c. Length of Water Column _____ (a-b) Casing Diameter: _____ in

b. Water Table Depth 38.71 d. Calculated System Volume (see back) _____ Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% or < 10 NTUs

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0925		30.03	7.20	11.60	3.23	163	18.5	100ml	0	clear/none
0930		29.81	7.22	11.56	2.87	158	9.02	100ml	.00	
0935		29.77	7.22	11.46	2.13	145	5.32	100ml	.01	
0940										

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

Sample: 0950

	Yes	No	N/A
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

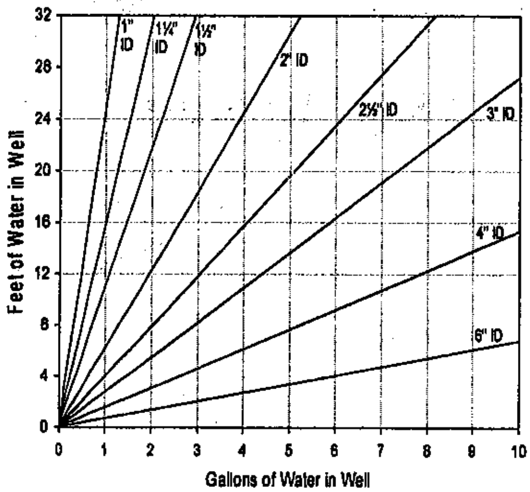
If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Dedicated Tubing

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	- Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr FILTER	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
12	amber glass	2	1 L	unpreserv	~~PCBs~~	N/A
13	plastic	2	1 L	HNO3	- Ra-226/228	X
14	plastic	2	1 L	HNO3	- Isotopic U/Th	X
15	amber glass	2	1 L	unpreserv	~~Formaldehyde~~	N/A
16	plastic	1	250 ml	unpreserv	- Perchlorate	X
17	amber glass	1	250 ml	EDA	- Chlorate	X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature _____ Date 6/27/08

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

* Due to Drawdown we had to set flow speed to a low level (150ml)

8 10 12 13.5 10 8 8 / 61.5

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Well ID: PC-400

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC
Project No: 04020-023-4312
Site Location: Henderson, NV
Weather Conds: HOT / WINDY

Date: 6/18/08
Time: Start 1130 am/pm
Finish 1300 am/pm
Collector(s): GAVEN COOTER / DEVON MELTON

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 58.9' c. Length of Water Column 36.26 (a-b) Casing Diameter: 2 in
   b. Water Table Depth 22.64 d. Calculated System Volume (see back) 5.92 gal Casing Material: PVC / Steel

2. **WELL PURGE DATA**
   a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)
   b. Acceptance Criteria defined (see workplan)

Temperature ±10%		**D.O.** ±10%	
pH ± 0.1 unit		**ORP** ±10 mV	
Conductivity ±3%		**Drawdown** < 0.3' (3.6-inches)	

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used:

	Make	Model	Serial Number
	TROLL	9500	47153
	LAMONT	20205	ME11660

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1150	1	27.02	7.08	114100	0.25	-148	19.38	200	0	NONE
1155	2	26.94	7.09	113700	0.20	-160	20.15	200	0	NONE
1200	3	26.54	7.09	112700	0.98	-162	8.49	200	0	NONE
1205	4	26.60	7.09	112700	0.25	-168	7.72	200	0	NONE
1210	5	26.69	7.09	112600	0.11	-172	3.91	200	0	NONE
1215	6	26.68	7.10	112700	0.10	-171	6.67	200	0	NONE
1220							6.53			

d. Acceptance criteria pass/fail — Yes / No / N/A (continued on back)

	Yes	No	N/A
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

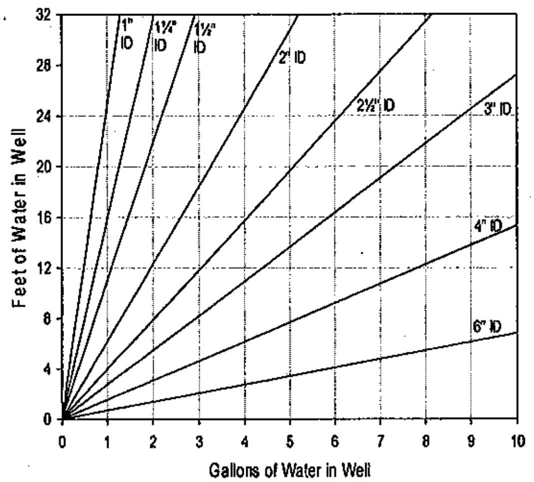
If no or N/A - Explain below.

3. **SAMPLE COLLECTION:** Method: LOW FLOW

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
12	amber glass	2	1 L	unpreserv	~~PCBs~~	
13	plastic	2	1 L	HNO3	Ra-226/228	X
14	plastic	2	1 L	HNO3	Isotopic U/Th	X
15	amber glass	2	1 L	unpreserv	~~Formaldehyde~~	
16	plastic	1	250 ml	unpreserv	Perchlorate	X
17	amber glass	1	250 ml	EDA	Chlorate	X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature _____ Date 6/18/08

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: H-48B

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 6-19-08 Time: Start 0950 am/pm Finish 1215 am/pm
Project No: 04020-023-4312
Site Location: Henderson, NV
Weather Conds: 100 + Collector(s): ROBERT P, ARTHUR Y

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 36.44 c. Length of Water Column 10.35 (a-b) Casing Diameter: 5 in

b. Water Table Depth 28.09 d. Calculated System Volume (see back) N/A Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10% **Turbidity** ±10% **or** < 10 NTUs
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

c. Field Testing Equipment used: Make (Model) Serial Number TROLL 950

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0950		27.99	4.63	27.47	1.78	55	48.8	100	28.20	CLOUDY
0955		27.23	4.64	27.22	1.02	73	44.3	100	28.21	CLOUDY
1000		27.23	4.63	27.08	.98	77	41.8	100	28.71	CLOUDY
1005		27.15	4.64	27.05	.92	77	41.8	100	29.00	CLOUDY
1010										

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

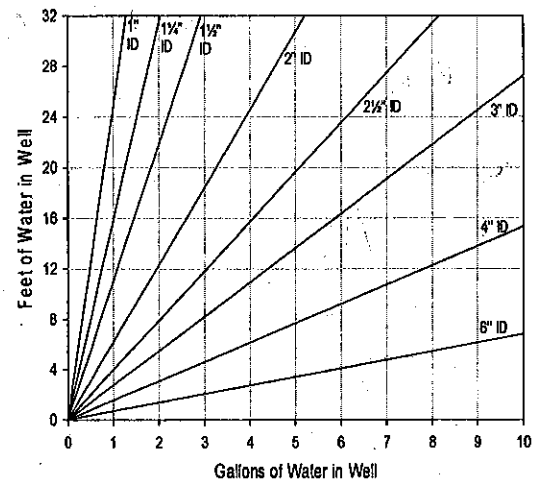
Has required turbidity been reached ☐ ☑ ☐
Have parameters stabilized ☑ ☐ ☐
If no or N/A - Explain below.
WELL HAS NO RECHARGE

3. SAMPLE COLLECTION: Method: LOW FLOW

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	
2	amber glass	2	1 L	unpreserv	SVOCs	
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	
4	amber glass	2	1 L	unpreserv	Pesticides	
5	plastic	1	1 L	HNO3	Metals	K
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	
7	plastic	1	250 ml	H2SO4	NH3, TPO4	
8	plastic	1	250 ml	NaOH	Filter Tot CN	
9	plastic	1	1 L	unpreserv	TSS	
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	
11	plastic	1	120 ml	unpreserv	pH	
12	amber glass	2	1 L	unpreserv	PCBs	
13	plastic	2	1 L	HNO3	Ra-226/228	C
14	plastic	2	1 L	HNO3	Isotopic U/Th	C
15	amber glass	2	1 L	unpreserv	Formaldehyde	
16	plastic	1	250 ml	unpreserv	Perchlorate	K
17	amber glass	1	250 ml	EDA	Chlorate	K
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: H-48B

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 6-18-08 Time: Start 1000 am/pm
Project No: 04020-023-4312 Finish 1245 am/pm
Site Location: Henderson, NV
Weather Conds: 105+ Collector(s): ROBERT P, ARTHUR Y

1. **WATER LEVEL DATA: (measured from Top of Casing)** 14.75
   a. Total Well Length 33.54 c. Length of Water Column (a-b) Casing Diameter: 4.5 in
   b. Water Table Depth d. Calculated System Volume (see back) N/A Casing Material: PVC / Steel
2. **WELL PURGE DATA** 23.79
   a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)
   b. Acceptance Criteria defined (see workplan)

Temperature ±10%	**D.O.** ±10%	**Turbidity** ±10% **or** < 10 NTUs
pH ± 0.1 unit	**ORP** ±10 mV	
Conductivity ±3%	**Drawdown** < 0.3' (3.6-inches)	

   c. Field Testing Equipment used: Make Model TROLL 950 Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH 5.88	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1400	1.27	82.26		27.39	-.38	-142	38.4	200	26FT	brownish/gray/no odor
1405	2.53	82.24	5.87	27.37	-.39	-145	42.1	200	26.55	
1419	3.75	83.01	5.85	27.60	-.40	-156	48.0	200	26.55	
1428	5.03	85.14	5.76	28.21	.04	-153				
1434	6.23	85.34	5.74	28.36	.04	-154				

   d. Acceptance criteria pass/fail Yes No N/A (continued on back)

	Yes	No	N/A
Has required turbidity been reached	☐	☑	☐
Have parameters stabilized	☐	☑	☐

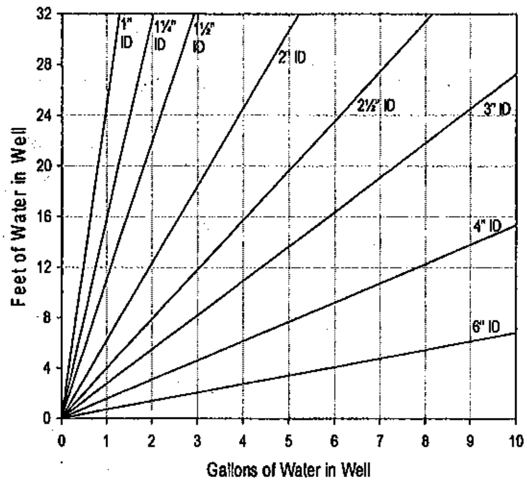
   If no or N/A - Explain below.
   WELL HAS NO RECHARGE

3. **SAMPLE COLLECTION:** Method: Low-flow sampling

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	
2	amber glass	2	1 L	unpreserv	SVOCs	
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	
4	amber glass	2	1 L	unpreserv	Pesticides	
5	plastic	1	1 L	HNO3	Metals	
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	
7	plastic	1	250 ml	H2SO4	NH3, TPO4	
8	plastic	1	250 ml	NaOH	Tot CN	
9	plastic	1	1 L	unpreserv	TSS	
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	
11	plastic	1	120 ml	unpreserv	pH	
12	amber glass	2	1 L	unpreserv	~~PCBs~~	
13	plastic	2	1 L	HNO3	Ra-226/228	
14	plastic	2	1 L	HNO3	Isotopic U/Th	
15	amber glass	2	1 L	unpreserv	~~Formaldehyde~~	
16	plastic	1	250 ml	unpreserv	Perchlorate	
17	amber glass	1	250 ml	EDA	Chlorate	
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: H-49A

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC
Project No: 04020-023-4312
Site Location: Henderson, NV
Weather Conds: HOT

Date: 6/19/08 Time: Start 1030 (am)/pm
Finish _____ am/pm
Collector(s): GALEN COOTER/DEVON MOLITOR

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 50.55 c. Length of Water Column 24.00 (a-b) Casing Diameter: 6 in

b. Water Table Depth 26.55 d. Calculated System Volume (see back) 35.25 Casing Material: (PVC) / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used:

Make	Model	Serial Number
MICROPURGE	MP-30	507338
LAMONT		

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1125	1	27.09	7.11	119.9	2.06	-101	2.68	200	0	NONE
1130	2	27.23	7.09	122.9	0.81	-137	2.58	200	0	NONE
1135	3	27.03	7.09	123.3	0.40	-159	2.16	200	0	NONE

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required turbidity been reached	X	☐	☐
Have parameters stabilized	X	☐	☐

If no or N/A - Explain below.

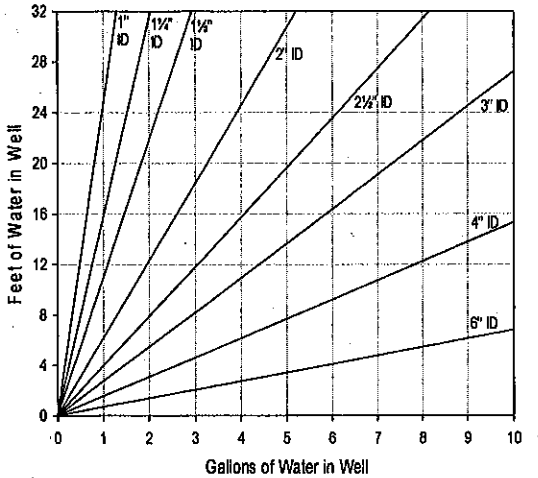
(continued on back)

3. SAMPLE COLLECTION: Method: Low Flow

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
12	amber glass	2	1 L	unpreserv	PCBs	NA
13	plastic	2	1 L	HNO3	Ra-226/228	X
14	plastic	2	1 L	HNO3	Isotopic U/Th	X
15	amber glass	2	1 L	unpreserv	Formaldehyde	NA
16	plastic	1	250 ml	unpreserv	Perchlorate	X
17	amber glass	1	250 ml	EDA	Chlorate	X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature _____ Date 6/19/08

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: MC-65

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 6/20/08 Time: Start 1200 am/pm
Project No: 04020-023-4312 Finish _____ am/pm
Site Location: Henderson, NV
Weather Conds: HOT Collector(s): GALEN COOTER/DEVON MOLITOR

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 41.53 c. Length of Water Column 8.37 (a-b) Casing Diameter: 2 in
   b. Water Table Depth 33.16 d. Calculated System Volume (see back) 1.37 Casing Material: PVC / Steel

2. **WELL PURGE DATA**
   a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

   b. Acceptance Criteria defined (see workplan)

Temperature ±10%	**D.O.** ±10%	**Turbidity** ±10% **or** < 10 NTUs
pH ± 0.1 unit	**ORP** ±10 mV	
Conductivity ±3%	**Drawdown** < 0.3' (3.6-inches)	

   c. Field Testing Equipment used: Make LAMONT Model 2020e Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1220	1	29.07	7.16	82.70	1.65	-109	46.9	200	0	NONE
1225	2	27.93	7.15	80.67	1.02	-109	31.4	200	0	NONE
1230	3	27.75	7.15	80.55	0.99	-101	19.9	200	0	NONE
1232	3.5	27.12	7.14	79.30	0.71	-76	15.4	200	0	NONE
1235	4	27.08	7.14	78.87	0.69	-48	9.7	200	0	NONE
1240	5	27.02	7.14	79.12	0.67	-42	8.11	200	0	NONE
1245	6	27.17	7.14	79.44	0.65	-51	5.24	200	0	NONE

   d. Acceptance criteria pass/fail Yes No N/A (continued on back)

	Yes	No	N/A
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

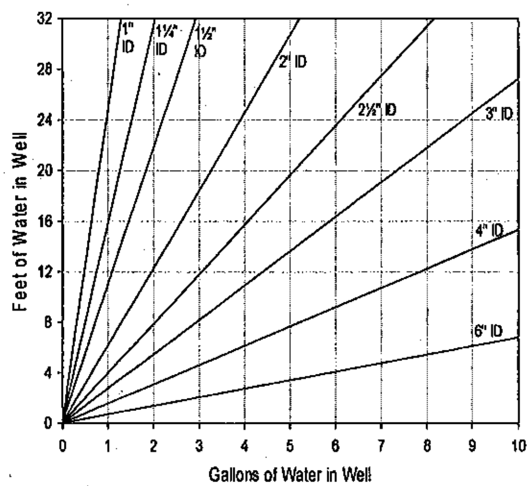
If no or N/A - Explain below.

3. **SAMPLE COLLECTION:** Method: Low FLOW

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
12	amber glass	2	1 L	unpreserv	PCBs	—
13	plastic	2	1 L	HNO3	Ra-226/228	X
14	plastic	2	1 L	HNO3	Isotopic U/Th	X
15	amber glass	2	1 L	unpreserv	Formaldehyde	—
16	plastic	1	250 ml	unpreserv	Perchlorate	X
17	amber glass	1	250 ml	EDA	Chlorate	X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: MC-66B

Low Flow Ground Water Sample Collection Record (DUP): MC-66BD

Client: Tronox LLC Date: 6-20-08 Time: Start 0900 am/pm
Project No: 04020-023-4312 Finish 1400 am/pm
Site Location: Henderson, NV
Weather Conds: Sunny 95° Collector(s): Robert P, Arthur Y

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 46.75 c. Length of Water Column 14.81 (a-b) Casing Diameter: 2 in

b. Water Table Depth 31.94 d. Calculated System Volume (see back) N/A Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make TROLL 950 Model Serial Number

1.27 Volume Removed (Liters)

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0940	1.27	28.33	6.94	11.58	2.37	-79	51.4	200	31.96	CLOUDY
0945	2.53	27.8	7.06	11.47	2.05	-58	55.2	150	32.00	CLOUDY
0950	3.79	27.90	7.13	11.48	2.13	-34	41.0	150	32.00	CLOUDY
0955	5.05	27.90	7.16	11.61	2.08	-19	32.7	150	32.00	CLOUDY
1000	6.31	28.09	7.17	11.69	1.94	-12	24.9	150	31.96	CLOUDY
1005	7.57	28.32	7.18	11.69	1.80	-4	21.5	150	32.00	CLOUDY
1010	8.83	28.42	7.20	11.71	1.91	4	17.9	150	31.97	CLEARING

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

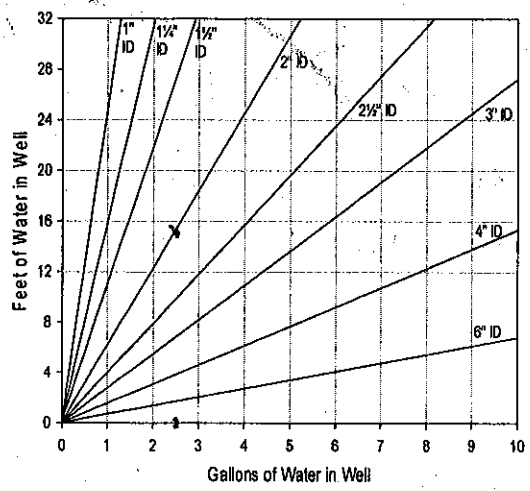
Has required turbidity been reached ☑ ☐ ☐
Have parameters stabilized ☑ ☐ ☐
If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: LOW FLOW

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	
2	amber glass	2	1 L	unpreserv	SVOCs	
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	
4	amber glass	2	1 L	unpreserv	Pesticides	
5	plastic	1	1 L	HNO3	Metals	
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	
7	plastic	1	250 ml	H2SO4	NH3, TPO4	
8	plastic	1	250 ml	NaOH	Tot CN	
9	plastic	1	1 L	unpreserv	TSS	
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	
11	plastic	1	120 ml	unpreserv	pH	
12	amber glass	2	1 L	unpreserv	PCBs	
13	plastic	2	1 L	HNO3	Ra-226/228	
14	plastic	2	1 L	HNO3	Isotopic U/Th	
15	amber glass	2	1 L	unpreserv	Formaldehyde	
16	plastic	1	250 ml	unpreserv	Perchlorate	
17	amber glass	1	250 ml	EDA	Chlorate	
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1016	10.09	28.60	7.21	11.79	1.96	14	14.1	150	32.00	CLEAR
1020	11.35	28.61	7.21	11.68	1.70	14	12.4	150	32.00	CLEAR
1025	12.61	28.59	7.22	11.63	1.68	17	10.7	150	31.96	CLEAR
1030	13.83	28.60	7.23	11.57	1.65	18	9.6	150	32.00	CLEAR
1035	15.13	28.62	7.23	11.50	1.64	19	9.1	150	32.00	CLEAR

ENSR | AECOM

Well ID: PC-37

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC
Date: 6/20/08
Time: Start 830 am/pm
Project No: 04020-023-4312
Finish _____ am/pm
Site Location: Henderson, NV
Weather Conds: HOT
Collector(s): GALEN COOTER / DEVON MALTOR

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 43.50 c. Length of Water Column 17.65 (a-b)
Casing Diameter: 2 in

b. Water Table Depth 25.85 d. Calculated System Volume (see back) 2.88
Casing Material: (PVC) / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make LAMONT Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0905	1	26.62	7.40	56.45	3.84	-67	12.6	200	0	NONE
0910	2	26.41	7.40	55.56	3.13	-87	8.10	200	0	NONE
0915	3	26.50	7.41	54.45	0.93	-126	7.03	200	0	NONE
0920	4	26.48	7.41	54.31	0.86	-124	4.18	200	0	NONE

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

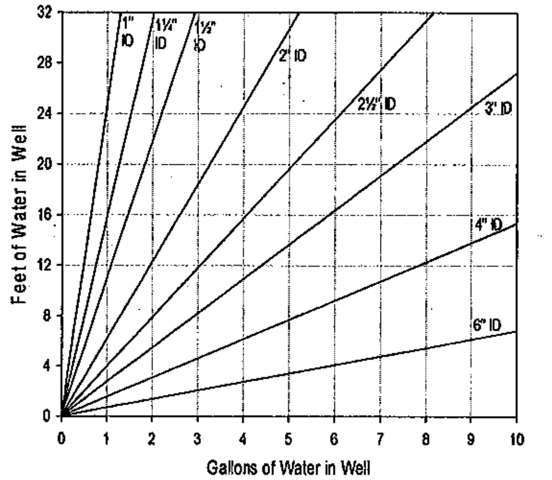
Has required turbidity been reached ☒ ☐ ☐
Have parameters stabilized ☐ ☐ ☐
If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: _____

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
12	amber glass	2	1 L	unpreserv	PCBs	—
13	plastic	2	1 L	HNO3	Ra-226/228	X
14	plastic	2	1 L	HNO3	Isotopic U/Th	X
15	amber glass	2	1 L	unpreserv	Formaldehyde	—
16	plastic	1	250 ml	unpreserv	Perchlorate	X
17	amber glass	1	250 ml	EDA	Chlorate	X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature _____ Date 6/20/08

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: MC-62B

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 6-23-08 Time: Start ~~0900~~ 0930 am/pm
Project No: 04020-023-4312 Finish 1200 am/pm
Site Location: Henderson, NV
Weather Conds: 100° Collector(s): ROBERT P, ARTHUR Y

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 50.38 c. Length of Water Column 18.62 (a-b) Casing Diameter: 2 in

b. Water Table Depth 31.76 d. Calculated System Volume (see back) N/A Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10% **Turbidity** ±10% **or** < 10 NTUs
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

c. Field Testing Equipment used: Make Model Serial Number

TROLL 950

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1000	1.20	28.34	6.34	21.00	.49	149	4.12	200	31.76	CLEAR
1005	2.17	28.19	6.33	20.94	.38	148	2.23	200	31.76	CLEAR
1010	3.71	28.14	6.33	20.92	.31	147	1.94	200	31.76	CLEAR
1015	5.00	28.10	6.33	20.89	.25	146	1.11	200	31.76	CLEAR

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

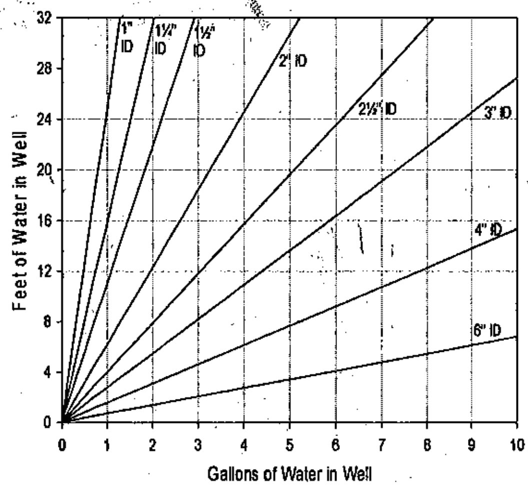
Has required turbidity been reached ☑ ☐ ☐
Have parameters stabilized ☑ ☐ ☐
If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: LOW FLOW

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	
2	amber glass	2	1 L	unpreserv	SVOCs	
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	
4	amber glass	2	1 L	unpreserv	Pesticides	
5	plastic	1	1 L	HNO3	Metals	
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	
7	plastic	1	250 ml	H2SO4	NH3, TPO4	
8	plastic	1	250 ml	NaOH	Tot CN	
9	plastic	1	1 L	unpreserv	TSS	
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	
11	plastic	1	120 ml	unpreserv	pH	
12	amber glass	2	1 L	unpreserv	PCBs	
13	plastic	2	1 L	HNO3	Ra-226/228	
14	plastic	2	1 L	HNO3	Isotopic U/Th	
15	amber glass	2	1 L	unpreserv	Formaldehyde	
16	plastic	1	250 ml	unpreserv	Perchlorate	
17	amber glass	1	250 ml	EDA	Chlorate	
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: PC-72B

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC
Project No: 04020-023-4312
Site Location: Henderson, NV
Weather Conds: 100°

Date: 6/23/08
Time: Start 1245 am/pm
Finish 1530 am/pm
Collector(s):

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 39.07
b. Water Table Depth 27.72
c. Length of Water Column 11.35 (a-b)
d. Calculated System Volume (see back) N/A

Casing Diameter: 2 in
Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% — **D.O.** ±10%
pH ± 0.1 unit — **ORP** ±10 mV
Conductivity ±3% — **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make TROLL 9500 Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1310		28.65	6.41	9.152	1.08	133	26.7	200	27.76	CLEAR
1315		29.02	6.34	9.200	.80	144	17.1	200	27.75	CLEAR
1320		28.84	6.31	9.172	.67	145	10.06	200	27.75	CLEAR
1325		28.84	6.31	9.162	.65	145	9.54	200	27.75	CLEAR
1330		28.83	6.31	9.158	.63	144	7.80	200	27.75	CLEAR

d. Acceptance criteria pass/fail — Yes / No / N/A (continued on back)

	Yes	No	N/A
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

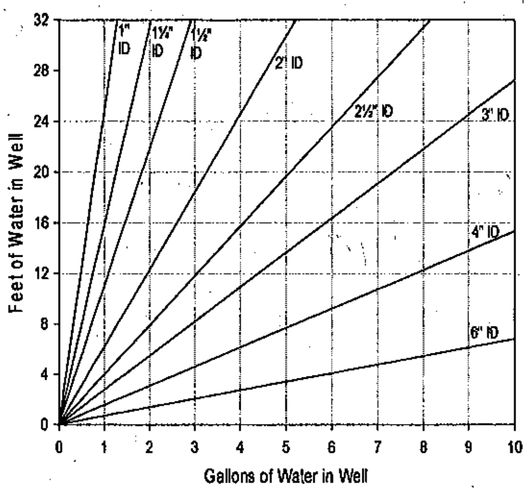
If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: LOW FLOW

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.
1	VOA vial	3	40 ml	HCL	VOCs
2	amber glass	2	1 L	unpreserv	SVOCs
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3
4	amber glass	2	1 L	unpreserv	Pesticides
5	plastic	1	1 L	HNO3	Metals
6	plastic	1	250 ml	buffer + NaOH	Hex Cr
7	plastic	1	250 ml	H2SO4	NH3, TPO4
8	plastic	1	250 ml	NaOH	Tot CN
9	plastic	1	1 L	unpreserv	TSS
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon
11	plastic	1	120 ml	unpreserv	pH
12	amber glass	2	1 L	unpreserv	PCBs
13	plastic	2	1 L	HNO3	Ra-226/228
14	plastic	2	1 L	HNO3	Isotopic U/Th
15	amber glass	2	1 L	unpreserv	Formaldehyde
16	plastic	1	250 ml	unpreserv	Perchlorate
17	amber glass	1	250 ml	EDA	Chlorate
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: H-49N3

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 6/24/08 Time: Start 0830 am/pm
Project No: 04020-023-4312 Finish _____ am/pm
Site Location: Henderson, NV
Weather Conds: HOT Collector(s): GALEN COOPER / DEVON MOCITOR

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 50.55 c. Length of Water Column 23.86 (a-b) Casing Diameter: 6 in

b. Water Table Depth 26.63 d. Calculated System Volume (see back) 35.05 Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make LAMONT Model _____ Serial Number _____

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0920	1	26.74	7.41	75.42	6.62	-64	5.80	200	0	NONE
0925	2	26.61	7.40	76.16	6.11	-66	2.83	200	0	NONE
0930	3	26.43	7.37	77.06	5.53	-68	3.13	200	0	NONE

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

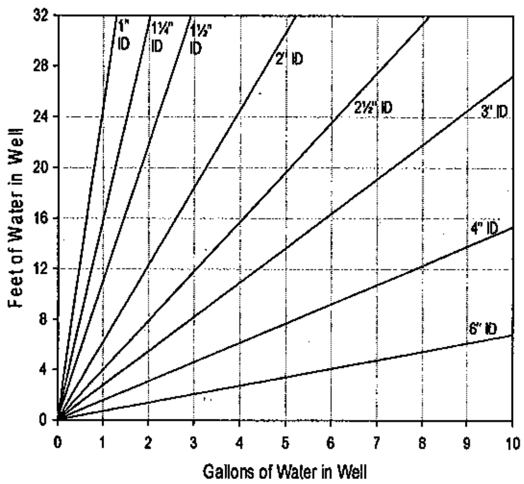
Has required turbidity been reached ☐ ☐ ☐
Have parameters stabilized ☐ ☐ ☐
If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: LOW FLOW SAMPLING

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals	
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
12	amber glass	2	1 L	unpreserv	PCBs	⌒
13	plastic	2	1 L	HNO3	Ra-226/228	
14	plastic	2	1 L	HNO3	Isotopic U/Th	
15	amber glass	2	1 L	unpreserv	Formaldehyde	—
16	plastic	1	250 ml	unpreserv	Perchlorate	
17	amber glass	1	250 ml	EDA	Chlorate	
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: ~~MW~~ M-44B

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC
Date: 6/24/08
Time: Start 0830 am/pm
Finish 1030 am/pm
Project No: 04020-023-4312
Site Location: Henderson, NV
Weather Conds: 95° +
Collector(s): Robert P, Arthur Y

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 37.52 c. Length of Water Column ~~17.57~~ 17.57 (a-b) Casing Diameter: 2 in

b. Water Table Depth 19.95 d. Calculated System Volume (see back) N/A Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make (Model) Serial Number

TROLL 950

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0850	1.27	26.24	6.38	11.47	.75	167	2.98	200	19.98	CLEAR
0855	2.54	26.25	6.36	11.52	.55	169	2.56	200	19.98	CLEAR
0900	3.75	26.11	6.35	11.50	.39	171	2.82	200	19.98	CLEAR

d. Acceptance criteria pass/fail — Yes / No / N/A (continued on back)

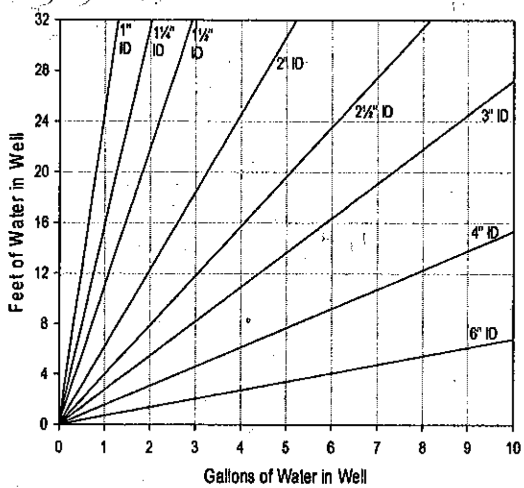
Has required turbidity been reached ☑ ☐ ☐
Have parameters stabilized ☑ ☐ ☐
If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: LOW FLOW

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	
2	amber glass	2	1 L	unpreserv	SVOCs	
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	
4	amber glass	2	1 L	unpreserv	Pesticides	
5	plastic	1	1 L	HNO3	Metals	
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	
7	plastic	1	250 ml	H2SO4	NH3, TPO4	
8	plastic	1	250 ml	NaOH	Tot CN	
9	plastic	1	1 L	unpreserv	TSS	
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	
11	plastic	1	120 ml	unpreserv	pH	
12	amber glass	2	1 L	unpreserv	PCBs	
13	plastic	2	1 L	HNO3	Ra-226/228	
14	plastic	2	1 L	HNO3	Isotopic U/Th	
15	amber glass	2	1 L	unpreserv	Formaldehyde	
16	plastic	1	250 ml	unpreserv	Perchlorate	
17	amber glass	1	250 ml	EDA	Chlorate	
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: M-95B

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC
Date: 6/24/08
Time: Start 1100 am/pm
Project No: 04020-023-4312
Finish ____ am/pm
Site Location: Henderson, NV
Weather Conds: 100°
Collector(s): ROBERT P / ARTHUR Y

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 19.63 c. Length of Water Column 7.58 (a-b) Casing Diameter: 2 in

b. Water Table Depth 12.05 d. Calculated System Volume (see back) n/a Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make MULTI-PARAMETER Model TROLL 950 Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1120		26.93	7.53	8.476	.58	104	19.8	200	12.10	CLEAR
1125		25.98	7.52	8.310	.21	91	13.4	200	12.05	CLEAR
1130		25.71	7.51	8.249	.12	83	11.8	200	12.03	CLEAR
1135		25.62	7.50	8.229	.09	79	9.27	200	12.03	CLEAR
1140		25.59	7.50	8.204	.08	77	8.37	200	12.10	CLEAR
	2.5 GAL									

d. Acceptance criteria pass/fail — Yes / No / N/A (continued on back)

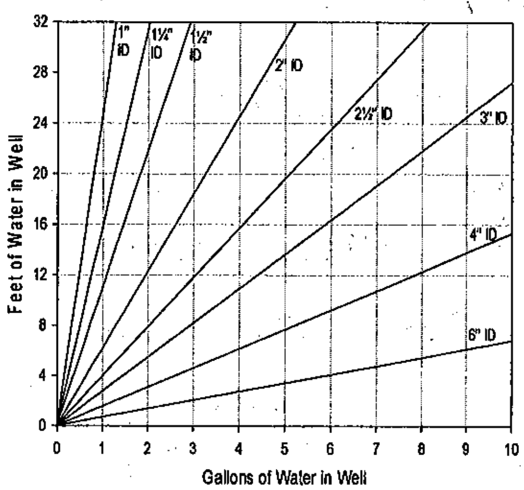
Has required turbidity been reached ☑ ☐ ☐
Have parameters stabilized ☑ ☐ ☐
If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: low flow

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	
2	amber glass	2	1 L	unpreserv	SVOCs	
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	
4	amber glass	2	1 L	unpreserv	Pesticides	
5	plastic	1	1 L	HNO3	Metals	
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	
7	plastic	1	250 ml	H2SO4	NH3, TPO4	
8	plastic	1	250 ml	NaOH	Tot CN	
9	plastic	1	1 L	unpreserv	TSS	
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	
11	plastic	1	120 ml	unpreserv	pH	
12	amber glass	2	1 L	unpreserv	PCBs	
13	plastic	2	1 L	HNO3	Ra-226/228	
14	plastic	2	1 L	HNO3	Isotopic U/Th	
15	amber glass	2	1 L	unpreserv	Formaldehyde	
16	plastic	1	250 ml	unpreserv	Perchlorate	
17	amber glass	1	250 ml	EDA	Chlorate	
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: MC-97B

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 6/25/08 Time: Start 0830 am/pm
Project No: 04020-023-4312 Finish 1130 am/pm
Site Location: Henderson, NV
Weather Conds: 90° Collector(s): ROBERT P, ARTHUR Y

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 42.18 c. Length of Water Column 7.44 (a-b) Casing Diameter: 2 in

b. Water Table Depth 34.74 d. Calculated System Volume (see back) N/A Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make Model Serial Number

TROLL 9500

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0850		27.31	7.31	16.12	6.13	390	35.2	200	34.78	CLOUDY
0855		27.38	7.31	16.25	6.05	447	22.6	200	34.75	CLOUDY
0900		27.29	7.32	16.45	6.33	463	17.4	200	34.76	CLEAR
0905		27.20	7.32	16.59	6.51	468	13.1	200	34.78	CLEAR
0910		27.14	7.33	16.67	6.67	471	11.7	200	34.75	CLEAR
0915		27.19	7.33	16.66	6.64	474	7.30	200	34.76	CLEAR
0920		27.17	7.33	16.59	6.61	469	6.60	200	34.78	CLEAR

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

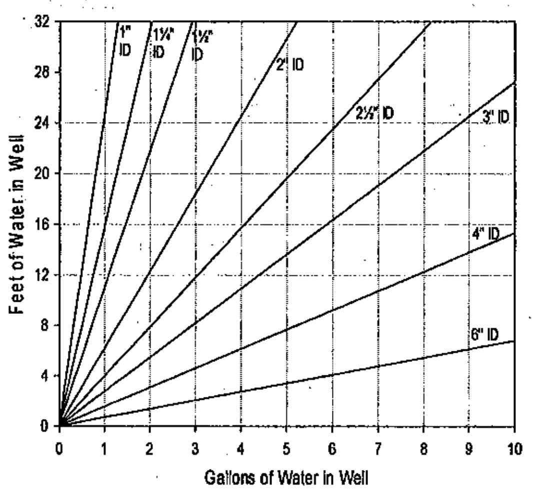
Has required turbidity been reached ☑ ☐ ☐
Have parameters stabilized ☑ ☐ ☐
If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: LOW FLOW

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	
2	amber glass	2	1 L	unpreserv	SVOCs	
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	
4	amber glass	2	1 L	unpreserv	Pesticides	
5	plastic	1	1 L	HNO3	Metals	
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	
7	plastic	1	250 ml	H2SO4	NH3, TPO4	
8	plastic	1	250 ml	NaOH	Tot CN	
9	plastic	1	1 L	unpreserv	TSS	
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	
11	plastic	1	120 ml	unpreserv	pH	
12	amber glass	2	1 L	unpreserv	PCBs	
13	plastic	2	1 L	HNO3	Ra-226/228	
14	plastic	2	1 L	HNO3	Isotopic U/Th	
15	amber glass	2	1 L	unpreserv	Formaldehyde	
16	plastic	1	250 ml	unpreserv	Perchlorate	
17	amber glass	1	250 ml	EDA	Chlorate	
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: ~~MC-35~~ MC-45B

Low Flow Ground Water Sample Collection Record

1200

Client: Tronox LLC Date: 6/25/08 Time: Start ~~1130~~ 1200 am/pm

Project No: 04020-023-4312 Finish 1430 am/pm

Site Location: Henderson, NV

Weather Conds: 100° WINDY Collector(s): ROBERT P, ARTHUR Y

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 36.10 c. Length of Water Column _____ (a-b) Casing Diameter: 2 in

b. Water Table Depth 26.82 d. Calculated System Volume (see back) N/A Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%

pH ± 0.1 unit **ORP** ±10 mV

Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1235		30.21	8.09	16.55	5.47	218	11.4	200	26.85	CLEAR
1240		30.37	7.30	17.27	2.97	216	3.8	200	26.85	CLEAR
1245		30.13	7.56	17.90	1.49	208	3.9	200	26.85	CLEAR
1250		30.14	7.24	18.23	.49	204	2.4	200	26.85	CLEAR
1255		30.12	7.24	18.39	.40	202	3.5	200	26.85	CLEAR
1300		30.17	7.24	18.43	.39	201	3.9	200	26.86	CLEAR

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

Has required turbidity been reached ☑ ☐ ☐

Have parameters stabilized ☑ ☐ ☐

If no or N/A - Explain below.

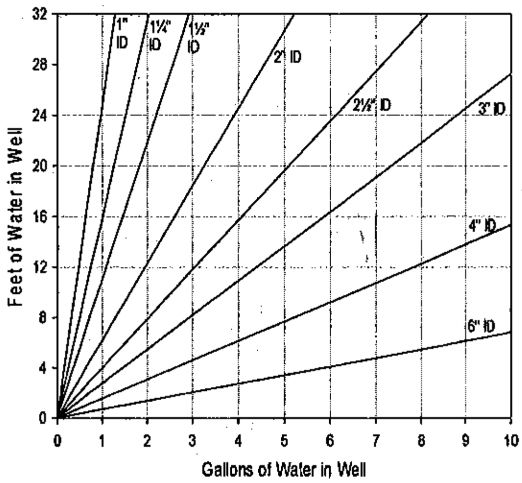
_____

3. SAMPLE COLLECTION: Method: LOW FLOW

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	
2	amber glass	2	1 L	unpreserv	SVOCs	
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	
4	amber glass	2	1 L	unpreserv	Pesticides	
5	plastic	1	1 L	HNO3	Metals	
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	
7	plastic	1	250 ml	H2SO4	NH3, TPO4	
8	plastic	1	250 ml	NaOH	Tot CN	
9	plastic	1	1 L	unpreserv	TSS	
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	
11	plastic	1	120 ml	unpreserv	pH	
12	amber glass	2	1 L	unpreserv	PCBs	
13	plastic	2	1 L	HNO3	Ra-226/228	
14	plastic	2	1 L	HNO3	Isotopic U/Th	
15	amber glass	2	1 L	unpreserv	Formaldehyde	
16	plastic	1	250 ml	unpreserv	Perchlorate	
17	amber glass	1	250 ml	EDA	Chlorate	
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: MC-32B

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 6/25/08 Time: Start 1125 am/pm
Project No: 04020-023-4312 Finish _____ am/pm
Site Location: Henderson, NV
Weather Conds: _____ Collector(s): _____

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 32.87 c. Length of Water Column _____ (a-b) Casing Diameter: _____ in

b. Water Table Depth DRY d. Calculated System Volume (see back) _____ Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10% **Turbidity** ±10% **or** < 10 NTUs
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

Has required turbidity been reached ☐ ☐ ☐
Have parameters stabilized ☐ ☐ ☐
If no or N/A - Explain below.

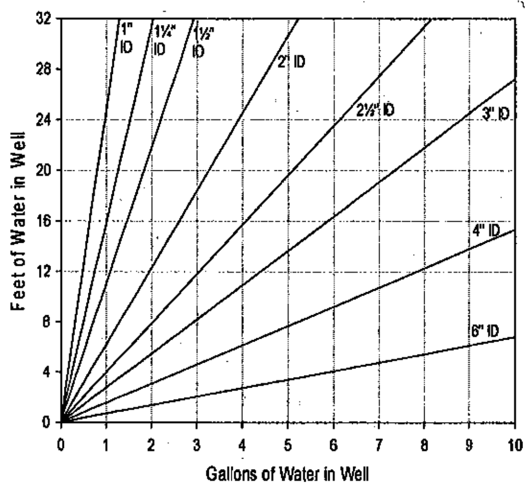
_____

3. SAMPLE COLLECTION: Method: _____

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	
2	amber glass	2	1 L	unpreserv	SVOCs	
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	
4	amber glass	2	1 L	unpreserv	Pesticides	
5	plastic	1	1 L	HNO3	Metals	
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	
7	plastic	1	250 ml	H2SO4	NH3, TPO4	
8	plastic	1	250 ml	NaOH	Tot CN	
9	plastic	1	1 L	unpreserv	TSS	
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	
11	plastic	1	120 ml	unpreserv	pH	
12	amber glass	2	1 L	unpreserv	PCBs	
13	plastic	2	1 L	HNO3	Ra-226/228	
14	plastic	2	1 L	HNO3	Isotopic U/Th	
15	amber glass	2	1 L	unpreserv	Formaldehyde	
16	plastic	1	250 ml	unpreserv	Perchlorate	
17	amber glass	1	250 ml	EDA	Chlorate	
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: M-88B

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC
Date: 6/26/08
Time: Start 0800 am/pm
Finish _____ am/pm
Project No: 04020-023-4312
Site Location: Henderson, NV
Weather Conds: HOT
Collector(s): GALEN COOTER/DEVON MOLITOR

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 41.31
c. Length of Water Column 9.31 (a-b)
Casing Diameter: 2 in

b. Water Table Depth 32.00
d. Calculated System Volume (see back) 1.52
Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10%
pH ± 0.1 unit
Conductivity ±3%
D.O. ±10%
ORP ±10 mV
Drawdown < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make LAMOTTE Model 2020E Serial Number _____

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0830	1	28.17	7.33	53.46	1.97	-53	4.93	200	0	NONE
0835	2	26.90	7.32	51.94	1.34	-64	4.66	200	0	NONE
0840	3	26.76	7.32	51.66	1.28	-68	2.53	200	0	NONE

d. Acceptance criteria pass/fail — Yes / No / N/A (continued on back)

Has required turbidity been reached — Yes ☒ No ☐ N/A ☐
Have parameters stabilized — Yes ☒ No ☐ N/A ☐
If no or N/A - Explain below.

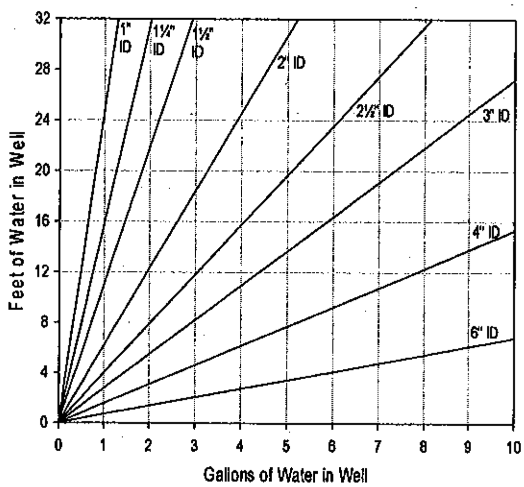
_____

3. SAMPLE COLLECTION: Method: Low Flow Sampling

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
12	amber glass	2	1 L	unpreserv	PCBs	—
13	plastic	2	1 L	HNO3	Ra-226/228	X
14	plastic	2	1 L	HNO3	Isotopic U/Th	X
15	amber glass	2	1 L	unpreserv	Formaldehyde	—
16	plastic	1	250 ml	unpreserv	Perchlorate	X
17	amber glass	1	250 ml	EDA	Chlorate	X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature _____ Date 6/26/08

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: M-23

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 6/25/08 Time: Start 0700 am/pm
Project No: 04020-023-4312 Finish _____ am/pm
Site Location: Henderson, NV
Weather Conds: HOT Collector(s): GALEN COUTER / DEVON MOLITOR

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 44.89 c. Length of Water Column 16.05 (a-b) Casing Diameter: 2 in
   b. Water Table Depth 28.84 d. Calculated System Volume (see back) 2,62 Casing Material: PVC / Steel

2. **WELL PURGE DATA**
   a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

   b. Acceptance Criteria defined (see workplan)

Temperature ±10%	**D.O.** ±10%	**Turbidity** ±10% **or** < 10 NTUs
pH ± 0.1 unit	**ORP** ±10 mV	
Conductivity ±3%	**Drawdown** < 0.3' (3.6-inches)	

   c. Field Testing Equipment used: Make LAMONT Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0740	0	26.01	7.35	36.96	5.34	-68	2.47	200	0	NONE
0745	1	26.85	7.34	36.96	1.60	-111	0.9	200	0	NONE
0750	2	26.23	7.34	36.60	1.74	-107	0.34	200	0	NONE

   d. Acceptance criteria pass/fail Yes No N/A (continued on back)

	Yes	No	N/A
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

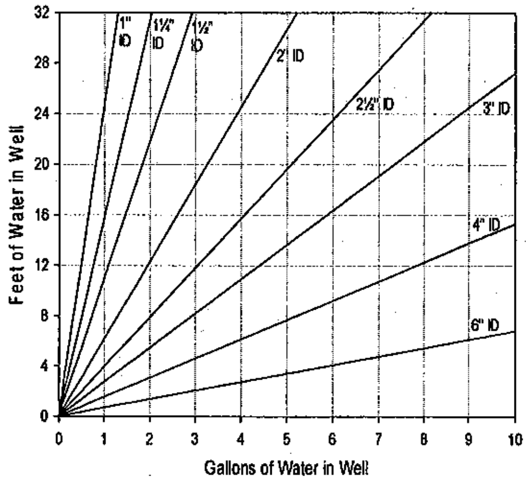
If no or N/A - Explain below.

3. **SAMPLE COLLECTION:** Method: LOW FLOW SAMPLING

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
12	amber glass	2	1 L	unpreserv	PCBs	—
13	plastic	2	1 L	HNO3	Ra-226/228	X
14	plastic	2	1 L	HNO3	Isotopic U/Th	X
15	amber glass	2	1 L	unpreserv	Formaldehyde	—
16	plastic	1	250 ml	unpreserv	Perchlorate	X
17	amber glass	1	250 ml	EDA	Chlorate	X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature _____ Date 6/25/08

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: MC-53

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 6/25/08 Time: Start 1100 am/pm
Project No: 04020-023-4312 Finish _____ am/pm
Site Location: Henderson, NV
Weather Conds: HOT / WINDY Collector(s): GALEN COOTER / DEVON MOLITOR

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a: Total Well Length 40.83 c. Length of Water Column 10.92 (a-b) Casing Diameter: 2 in
   b. Water Table Depth 29.91 d. Calculated System Volume (see back) 1.78 Casing Material: PVC / Steel

2. **WELL PURGE DATA**
   a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

   b. Acceptance Criteria defined (see workplan)

Temperature ±10%	**D.O.** ±10%	**Turbidity** ±10% **or** < 10 NTUs
pH ± 0.1 unit	**ORP** ±10 mV	
Conductivity ±3%	**Drawdown** < 0.3' (3.6-inches)	

   c. Field Testing Equipment used: Make: LAMOTT Model: _____ Serial Number: _____

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1140	0	27.52	7.11	93.86	1.57	534	1.85	200	0	NONE
1145	1	27.36	7.11	93.27	1.55	528	0.53	200	0	NONE
1150	2	27.32	7.11	92.57	1.61	529	0.98	200	0	NONE

   d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

   If no or N/A - Explain below.

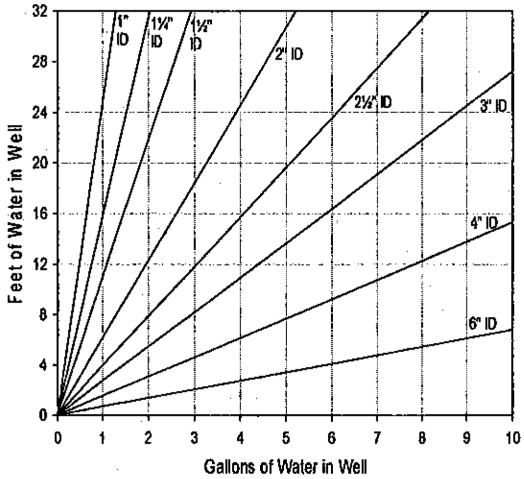
(continued on back)

3. **SAMPLE COLLECTION:** Method: LOW FLOW

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
12	amber glass	2	1 L	unpreserv	PCBs	—
13	plastic	2	1 L	HNO3	Ra-226/228	X
14	plastic	2	1 L	HNO3	Isotopic U/Th	X
15	amber glass	2	1 L	unpreserv	Formaldehyde	—
16	plastic	1	250 ml	unpreserv	Perchlorate	X
17	amber glass	1	250 ml	EDA	Chlorate	X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature _____ Date 6/25/08

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: MC-94

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC
Date: 6/25/08
Time: Start 1130 am/pm
Finish ______ am/pm
Project No: 04020-023-4312
Site Location: Henderson, NV
Weather Conds: Hot / Clear
Collector(s): ______

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 43.00 c. Length of Water Column ______ (a-b) Casing Diameter: ____ in

b. Water Table Depth 32.45 FROM TOP of PVC d. Calculated System Volume (see back) ______ Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **pH** ± 0.1 unit **Conductivity** ±3% **D.O.** ±10% **ORP** ±10 mV **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% or < 10 NTUs

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1350	1000 ml	28.93	7.13	17.37	4.39	449		250ml		Start Pump
1355	1000	27.94	7.14	17.16	4.31	480		250ml		
1405	2000	27.72	7.15	16.95	4.29	492		250ml		
1410	1000	27.61	7.15	16.85	4.24	492	30.6	250ml		
1415	1000	27.54	7.15	16.71	4.17	492	14.7	250ml		
1420	750	28.19	7.15	16.85	4.20	489	11.8	150ml		
1425	750	29.41	7.14	17.39	4.17	480	11.9	100ml		

Turned flow rate down 250ml to 100ml

d. Acceptance criteria pass/fail (Yes) No N/A (continued on back)

Has required turbidity been reached ☒ ☐ ☐
Have parameters stabilized ☒ ☐ ☐
If no or N/A - Explain below.

5:45pm

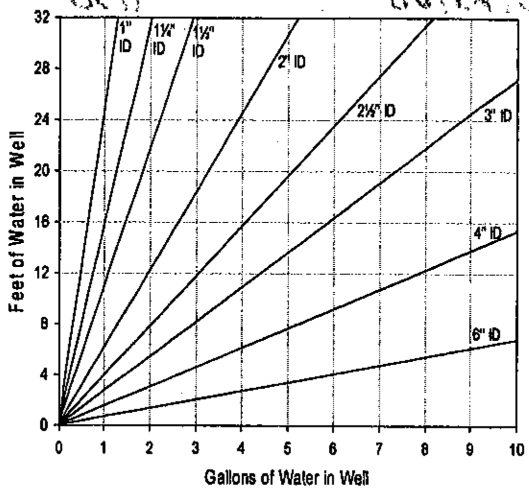
3. SAMPLE COLLECTION: Method: Dedicated tubing

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals → 1 each	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	
7	plastic	1	250 ml	H2SO4	NH3, TPO4	
8	plastic	1	250 ml	NaOH	Tot CN	
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	
11	plastic	1	120 ml	unpreserv	pH	
12	amber glass	2	1 L	unpreserv	PCBs	
13	plastic	2	1 L	HNO3	Ra-226/228	
14	plastic	2	1 L	HNO3	Isotopic U/Th	
15	amber glass	2	1 L	unpreserv	Formaldehyde	X
16	plastic	1	250 ml	unpreserv	Perchlorate	
17	amber glass	1	250 ml	EDA	Chlorate	
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	

Signature [signature] Date 6/25/08 - 1431

4 Rn Filter - 4 un Filter
1 metal filter
8 - Anion field filter
1 metal unfilter

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1430		29.18	7.14	17.48	4.19	48c	9.8	100 ml		

ENSR | AECOM

Well ID: M-7BB

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC
Date: 6/26/08
Time: Start 0730 am/pm
Project No: 04020-023-4312
Finish _____ am/pm
Site Location: Henderson, NV
Weather Conds: 100°
Collector(s): ROBERT P / ARTHUR Y

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 54.85
c. Length of Water Column 18.56 (a-b)
Casing Diameter: 2 in

b. Water Table Depth ~~54.85~~ 36.29
d. Calculated System Volume (see back) N/A
Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10%
pH ± 0.1 unit
Conductivity ±3%
D.O. ±10%
ORP ±10 mV
Drawdown < 0.3' (3.6-inches)
Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make TROLL Model 9505 Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0815		26.83	7.20	12.34	1.43	831	37.0	200	36.34	CLEAR
0820		27.13	7.19	12.41	1.24	304	35.9	200	36.34	CLEAR
0825		27.34	7.19	12.44	1.10	289	31.6	200	36.34	CLEAR
0830		27.40	7.19	12.46	.98	280	31.2	200	36.33	CLEAR
0835		27.45	7.19	12.47	.91	272	26.0	200	36.33	CLEAR
0840		27.50	7.19	12.48	.87	264	22.7	200	36.34	CLEAR
0845		27.60	7.19	12.49	.85	252	16.3	200	36.34	CLEAR

d. Acceptance criteria pass/fail — Yes / No / N/A

(continued on back)

	Yes	No	N/A
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

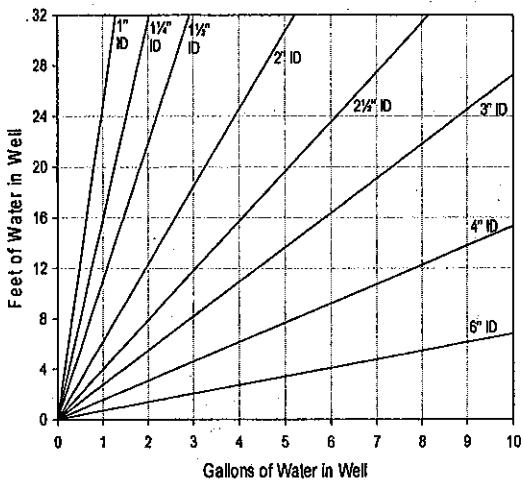
If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: LOW FLOW

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.
1	VOA vial	3	40 ml	HCL	VOCs
2	amber glass	2	1 L	unpreserv	SVOCs
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3
4	amber glass	2	1 L	unpreserv	Pesticides
5	plastic	1	1 L	HNO3	Metals
6	plastic	1	250 ml	buffer + NaOH	Hex Cr
7	plastic	1	250 ml	H2SO4	NH3, TPO4
8	plastic	1	250 ml	NaOH	Tot CN
9	plastic	1	1 L	unpreserv	TSS
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon
11	plastic	1	120 ml	unpreserv	pH
12	amber glass	2	1 L	unpreserv	PCBs
13	plastic	2	1 L	HNO3	Ra-226/228
14	plastic	2	1 L	HNO3	Isotopic U/Th
15	amber glass	2	1 L	unpreserv	Formaldehyde
16	plastic	1	250 ml	unpreserv	Perchlorate
17	amber glass	1	250 ml	EDA	Chlorate
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)

Signature _____ Date 6/26/08

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
0850		27.72	7.18	12.53	.83	248	11.2	200	36.34	CLEAR
0855		27.74	7.18	12.54	.82	239	15.6	200	36.34	CLEAR
0900		27.78	7.18	12.54	.82	230	10.6	200	36.33	CLEAR
0905		27.92	7.18	12.58	.83	211	9.9	200	36.34	CLEAR
0910		27.95	7.18	12.57	.83	204	8.6	200	36.34	CLEAR
	5 GAL									

ENSR | AECOM

Well ID: M-61

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 6/26/08 Time: Start 1100 am/pm
Project No: 04020-023-4312 Finish _____ am/pm
Site Location: Henderson, NV
Weather Conds: HOT / WINDY Collector(s): GALEN COOTER/DEVON MOLITOR

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 42.00 c. Length of Water Column 17.03 (a-b) Casing Diameter: 2 in

b. Water Table Depth 24.97 d. Calculated System Volume (see back) 2.78 Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make LAMOTTE Model 2020E Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1120	1	26.72	7.29	39.96	0.98	-95	2.78	200	0	NONE
1125	2	26.26	7.29	39.65	1.24	-80	2.39	200	0	NONE
1130	3	25.97	7.29	39.39	1.57	-68	3.32	200	0	NONE

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

	Yes	No	N/A
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

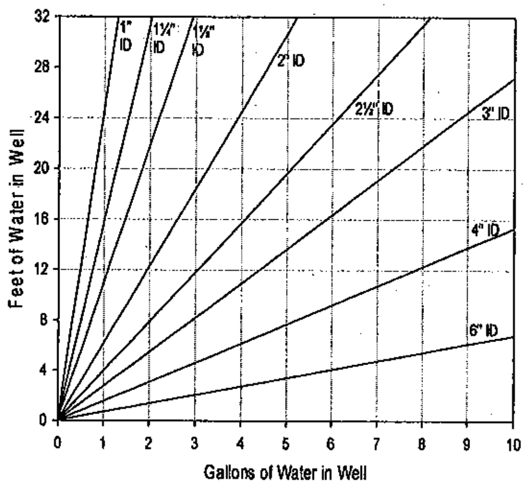
If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: LOW FLOW SAMPLING

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
12	amber glass	2	1 L	unpreserv	PCBs	—
13	plastic	2	1 L	HNO3	Ra-226/228	X
14	plastic	2	1 L	HNO3	Isotopic U/Th	X
15	amber glass	2	1 L	unpreserv	Formaldehyde	—
16	plastic	1	250 ml	unpreserv	Perchlorate	X
17	amber glass	1	250 ml	EDA	Chlorate	X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature _____ Date 6/26/08

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 6/26/08 Time: Start 0840 am/pm
Project No: 04020-023-4312 Finish _____ am/pm
Site Location: Henderson, NV
Weather Conds: Clear/Hot Collector(s): _____

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 58.72 c. Length of Water Column _____ (a-b) Casing Diameter: 3 in

b. Water Table Depth 47.31 d. Calculated System Volume (see back) _____ Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% or < 10 NTUs

c. Field Testing Equipment used:

Make	Model	Serial Number
Hach	2100P (Turbidity)	990500014124

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0845	1200ml	27.49	6.95	18.05	1.42	-17	17.5	200		clear/none
0850	2400ml	27.31	6.90	17.88	.31	-89	11.3	200		" "
0855		27.10	6.90	17.84	.23	-100	8.0	200		" "
0900		27.27	6.90	17.90	.18	-104	7.41	200		

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

Has required turbidity been reached ☐ ☐ ☐
Have parameters stabilized ☐ ☐ ☐
If no or N/A - Explain below.

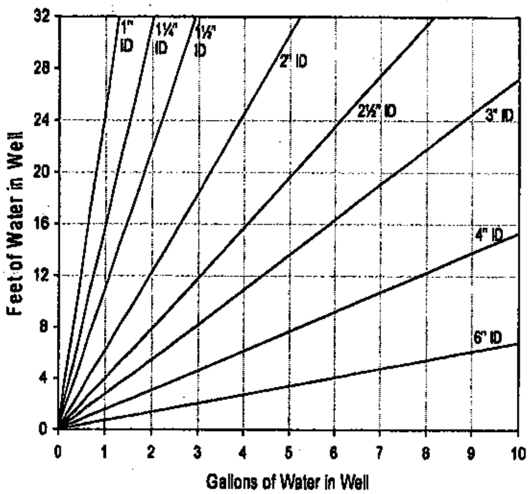
_____

3. SAMPLE COLLECTION: Method: Sample Cart

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	
7	plastic	1	250 ml	H2SO4	(NH3, TPO4	
8	plastic	1	250 ml	NaOH	(Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
12	amber glass	2	1 L	unpreserv	PCBs	X
13	plastic	2	1 L	HNO3	Ra-226/228	X
14	plastic	2	1 L	HNO3	Isotopic U/Th	
15	amber glass	2	1 L	unpreserv	Formaldehyde	
16	plastic	1	250 ml	unpreserv	Perchlorate	
17	amber glass	1	250 ml	EDA	Chlorate	
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	

Signature _____ Date 6/26/08

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: MW-16B

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 6/25/08 Time: Start 1305 am/pm
Project No: 04020-023-4312 Finish _____ am/pm
Site Location: Henderson, NV
Weather Conds: Windy/hot/clear Collector(s): S. Wang / J. Trapasso

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 42.92 c. Length of Water Column _____ (a-b) Casing Diameter: 2 in

b. Water Table Depth 37.07 d. Calculated System Volume (see back) _____ Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% or < 10 NTUs

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
~~1300~~		31.03	7.6	15.08	7.07	50	9.5	100 ml		
1315	100	30.42	7.5	14.71	7.30	50	9.2	100 ml		
1320	200	30.21	7.3	14.92	5.2	52	9.2	100ml		
1325	300	30.06	7.3	14.86	4.71	41	9.0	100 ml		
1330	400	30.15	7.2	14.88	4.04	14	9.1	100ml		
1335	500	30.82	7.2	15.05	3.6	-3	9.2	100 ml		
1340										

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

Has required turbidity been reached ☐ ☐ ☐
Have parameters stabilized ☐ ☐ ☐
If no or N/A - Explain below.

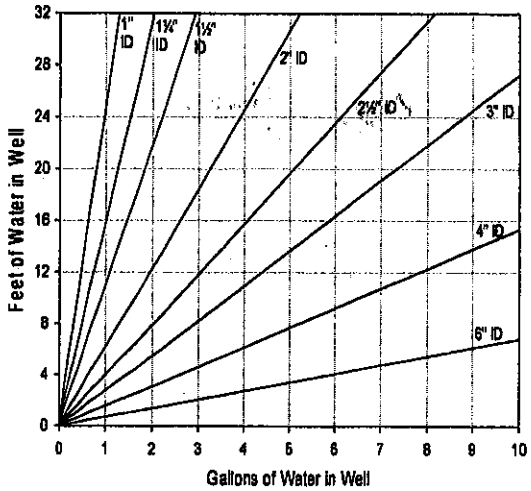
_____

3. SAMPLE COLLECTION: Method: Sample @ 1405

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	
2	amber glass	2	1 L	unpreserv	SVOCs	
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	
4	amber glass	2	1 L	unpreserv	Pesticides	
5	plastic	1	1 L	HNO3	Metals	
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	Field Filter
7	plastic	1	250 ml	H2SO4	NH3, TPO4	
8	plastic	1	250 ml	NaOH	Tot CN	
9	plastic	1	1 L	unpreserv	TSS	
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	
11	plastic	1	120 ml	unpreserv	pH	
12	amber glass	2	1 L	unpreserv	PCBs	
13	plastic	2	1 L	HNO3	Ra-226/228	
14	plastic	2	1 L	HNO3	Isotopic U/Th	
15	amber glass	2	1 L	unpreserv	Formaldehyde	
16	plastic	1	250 ml	unpreserv	Perchlorate	
17	amber glass	1	250 ml	EDA	Chlorate	
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	

Signature _____ Date 6/26/08

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1345	700	31.05	7.21	15.10	2.8	-9	69.4	100ml		
1350	800	30.73	7.21	15.03	2.4	-16	9.1	100ml		Stabilized numbers
1355	—	—	—	—	—	—	—	—		

ENSR | AECOM

Well ID: M-57A

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC
Project No: 04020-023-4312
Site Location: Henderson, NV
Weather Conds: 100°
Date: 6/27/08
Time: Start 1025 am/pm
Finish 1400 am/pm
Collector(s): ROBERT P, TOM S

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 42.20
b. Water Table Depth 30.04
c. Length of Water Column 12.16 (a-b)
d. Calculated System Volume (see back) N/A

Casing Diameter: 2 in
Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% | **D.O.** ±10% | **Turbidity** ±10% **or** < 10 NTUs
pH ± 0.1 unit | **ORP** ±10 mV
Conductivity ±3% | **Drawdown** < 0.3' (3.6-inches)

c. Field Testing Equipment used: Make TROLL Model 9500 Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1030		27.10	7.60	4.560	6.24	177	92.4	200	30.05	light Brown
10:35		27.94	7.61	4.622	5.66	176	25.4	200	30.05	light brown
10:40		28.06	7.59	4.620	5.69	175	25.2	200	30.05	" "
10:45		27.96	7.59	4.610	5.57	173	24.6	200	30.05	" "
10:50		29.21	7.81	0.0033	8.04	118	92.3	200	30.05	clear
10:55		27.04	7.60	4.519	5.48	126	72.3	200	30.05	clear
11:00		27.39	7.58	4.553	5.41	129	56.6	200	30.05	clear

d. Acceptance criteria pass/fail — Yes / No / N/A (continued on back)

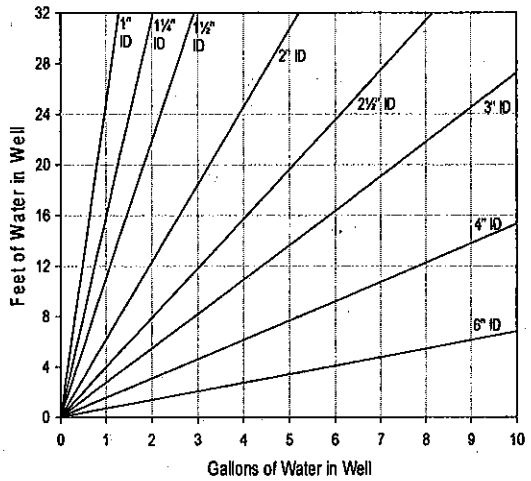
Has required turbidity been reached ☑ ☐ ☐
Have parameters stabilized ☑ ☐ ☐
If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: LOW FLOW

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.
1	VOA vial	3	40 ml	HCL	VOCs
2	amber glass	2	1 L	unpreserv	SVOCs
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3
4	amber glass	2	1 L	unpreserv	Pesticides
5	plastic	1	1 L	HNO3	Metals
6	plastic	1	250 ml	buffer + NaOH	Hex Cr
7	plastic	1	250 ml	H2SO4	NH3, TPO4
8	plastic	1	250 ml	NaOH	Tot CN
9	plastic	1	1 L	unpreserv	TSS
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon
11	plastic	1	120 ml	unpreserv	pH
12	amber glass	2	1 L	unpreserv	PCBs
13	plastic	2	1 L	HNO3	Ra-226/228
14	plastic	2	1 L	HNO3	Isotopic U/Th
15	amber glass	2	1 L	unpreserv	Formaldehyde
16	plastic	1	250 ml	unpreserv	Perchlorate
17	amber glass	1	250 ml	EDA	Chlorate
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
11:05		27.63	7.58	4.569	5.40	136	41.1	200	30.05	Clear
11:10		27.67	7.57	4.573	5.39	130	32.3	200	30.05	Clear
11:15		27.64	7.57	4.569	5.39	130	26.5	200	30.05	Clear
11:20		27.69	7.57	4.570	5.39	129	20.3	200	30.05	Clear
11:25		27.66	7.57	4.568	5.40	128	17.0	200	30.05	Clear
11:30		27.69	7.57	4.586	5.40	127	14.8	200	30.05	Clear
11:35		27.94	7.57	4.596	5.39	127	12.4	200	30.05	Clear
11:40		28.01	7.56	4.599	5.41	125	9.61	200	30.05	Clear
	5 GAL									

ENSR | AECOM

Well ID: M-95B

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 6/27/08 Time: Start ~~0755~~ 0720 am/pm
Project No: 04020-023-4312 Finish 1000 am/pm
Site Location: Henderson, NV
Weather Conds: 85° Collector(s): Robert P, Tom S

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 19.60 c. Length of Water Column 7.51 (a-b) Casing Diameter: 2 in

b. Water Table Depth 12.09 d. Calculated System Volume (see back) N/A Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make Model Serial Number

ROLL 950

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0755		25.12	7.53	8.174	.52	151	23.0	200		CLEAR
08:00	24.*	25.12	7.53	8.044	.29	144	17.2	200	12.09	clear
08:05		24.24	7.51	8.005	.29	139	13.8	200	12.09	clear
08:10		24.12	7.51	7.991	.30	134	12.8	200	12.09	clear
08:15		24.10	7.51	7.975	.33	131	10.74	200	12.09	clear
08:20		24.05	7.50	7.970	.37	128	8.3	200	12.09	clear
	2 GAL									

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

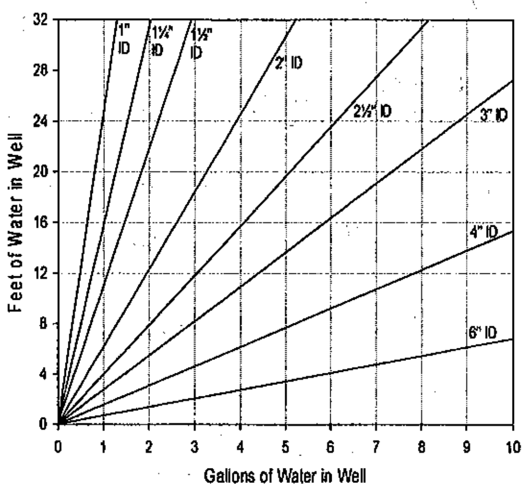
Has required turbidity been reached ☑ ☐ ☐
Have parameters stabilized ☑ ☐ ☐
If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low Flow

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	
2	amber glass	2	1 L	unpreserv	SVOCs	
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	
4	amber glass	2	1 L	unpreserv	Pesticides	
5	plastic	1	1 L	HNO3	Metals	
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	
7	plastic	1	250 ml	H2SO4	NH3, TPO4	
8	plastic	1	250 ml	NaOH	Tot CN	
9	plastic	1	1 L	unpreserv	TSS	
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	
11	plastic	1	120 ml	unpreserv	pH	
12	amber glass	2	1 L	unpreserv	PCBs	
13	plastic	2	1 L	HNO3	Ra-226/228	
14	plastic	2	1 L	HNO3	Isotopic U/Th	
15	amber glass	2	1 L	unpreserv	Formaldehyde	
16	plastic	1	250 ml	unpreserv	Perchlorate	
17	amber glass	1	250 ml	EDA	Chlorate	
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: MW-68

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC
Date: 6/27/08
Time: Start 1000 am/pm
Finish 1200 am/pm
Project No: 04020-023-4312
Site Location: Henderson, NV
Weather Conds: HOT
Collector(s): GALEN LOOTER / DEVON MOLITOR

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 44.63
c. Length of Water Column 17.63 (a-b)
Casing Diameter: 2 in

b. Water Table Depth 27.0
d. Calculated System Volume (see back) 2.88
Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10%
pH ± 0.1 unit
Conductivity ±3%
D.O. ±10%
ORP ±10 mV
Drawdown < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make LAMOTTE Model 2020E Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1005	1	27.37	7.37	43.39	2.15	-128	3.99	200	0	NONE
1010	2	26.64	7.36	42.62	2.78	-152	0.31	200	0	NONE
1015	3	26.41	7.36	42.20	1.99	-176	0.97	200	0	NONE

d. Acceptance criteria pass/fail — Yes / No / N/A

(continued on back)

	Yes	No	N/A
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

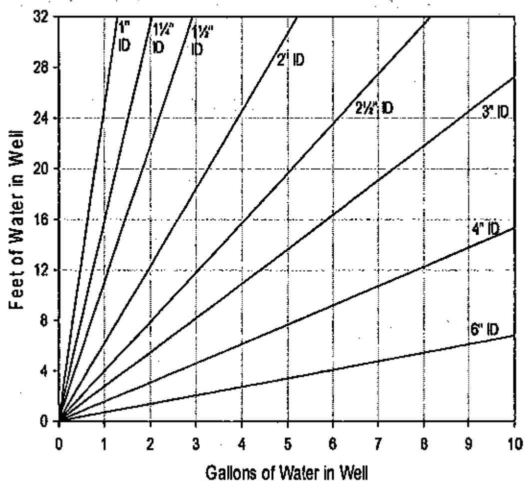
If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: LOW FLOW

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
12	amber glass	2	1 L	unpreserv	PCBs	—
13	plastic	2	1 L	HNO3	Ra-226/228	X
14	plastic	2	1 L	HNO3	Isotopic U/Th	X
15	amber glass	2	1 L	unpreserv	Formaldehyde	—
16	plastic	1	250 ml	unpreserv	Perchlorate	X
17	amber glass	1	250 ml	EDA	Chlorate	X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature _____ Date 6/27/08

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: MW-67

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC
Project No: 04020-023-4312
Site Location: Henderson, NV
Weather Conds: HOT

Date: 6/27/08
Time: Start 700 am/pm
Finish _____ am/pm
Collector(s): GALEN COOTER/DEVON MOLITOR

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length ~~47.00~~ 32.68 c. Length of Water Column 17.19 (a-b)

Casing Diameter: 2 in

b. Water Table Depth 22.49 d. Calculated System Volume (see back) 2.81

Casing Material: (PVC) Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make CAMOTTE Model 2020E Serial Number _____

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0735	1	25.77	7.11	51.79	2.30	-61	0.72	200	0	NONE
0740	2	25.31	7.11	51.28	1.32	-74	0.32	200	0	NONE
0745	3	26.39	7.13	51.07	1.44	-72	1.54	200	0	NONE

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

Has required turbidity been reached ☒ ☐ ☐
Have parameters stabilized ☒ ☐ ☐
If no or N/A - Explain below.

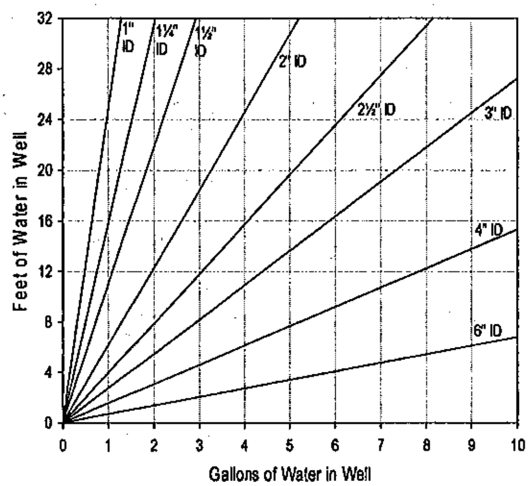
_____

3. SAMPLE COLLECTION: Method: LOW FLOW

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
12	amber glass	2	1 L	unpreserv	PCBs	—
13	plastic	2	1 L	HNO3	Ra-226/228	X
14	plastic	2	1 L	HNO3	Isotopic U/Th	X
15	amber glass	2	1 L	unpreserv	Formaldehyde	—
16	plastic	1	250 ml	unpreserv	Perchlorate	X
17	amber glass	1	250 ml	EDA	Chlorate	X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature _____ Date 6/27/08

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

M-79

Well ID: M-79

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 6-29-08 Time: Start 1200 am/pm
Project No: 04020-023-4312 Finish _____ am/pm
Site Location: Henderson, NV
Weather Conds: Hot Collector(s): Tom Shook

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 40.22 c. Length of Water Column _____ (a-b) Casing Diameter: 2 in

b. Water Table Depth 23.89 d. Calculated System Volume (see back) _____ Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make In-Situ Model Troll 9500 Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
13:05		25.04	7.80	1.276	6.88	132		200	24.00	clear
13:15		24.69	7.75	1.253	7.47	126		200	24.00	clear
13:20		23.98	7.70	1.246	8.20	119		200	24.00	clear
13:25		23.69	7.70	1.245	8.19	117	7.78	200	24.00	clear
13:30		23.91	7.70	1.257	8.15	114	6.69	200	24.00	clear

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

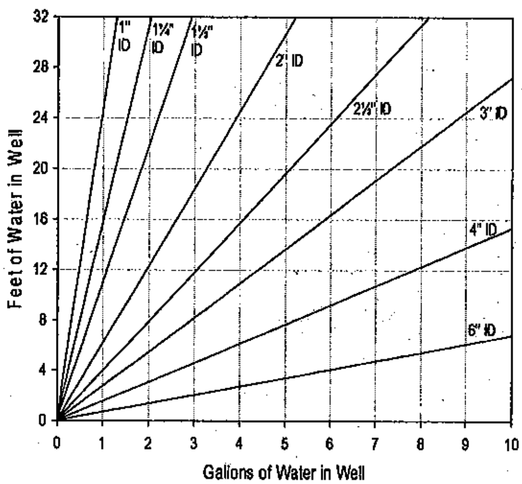
Has required turbidity been reached ☒ ☐ ☐
Have parameters stabilized ☒ ☐ ☐
If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: pump

Order	Container Type	Bottles per sample	Volume	Preservative		Analysis Req.	
1	VOA vial	3	40 ml	HCL	R	VOCs	X
2	amber glass	2	1 L	unpreserv	R	SVOCs	X
3	plastic	1	250 ml	unpreserv	R	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	R	Pesticides	X
5	plastic	1	1 L	HNO3	R	Metals	X
6	plastic	1	250 ml	buffer + NaOH	R	Hex Cr — Filter	X
7	plastic	1	250 ml	H2SO4		NH3, TPO4	X
8	plastic	1	250 ml	NaOH		Tot CN WC	X
9	plastic	1	1 L	unpreserv		TSS	X
10	VOA vial	3	40 ml	H2SO4		Tot organic carbon WC	X
11	plastic	1	120 ml	unpreserv		pH	X
12	amber glass	2	1 L	unpreserv	H	PCBs	
13	plastic	2	1 L	HNO3	J	Ra-226/228	X
14	plastic	2	1 L	HNO3	J	Isotopic U/Th	X
15	amber glass	2	1 L	unpreserv		Formaldehyde	
16	plastic	1	250 ml	unpreserv	K	Perchlorate	X
17	amber glass	1	250 ml	EDA	K	Chlorate	X
18	plastic	1	250 ml	unpreserv		Cl, NO3, NO2, SO4, Br, TDS WC	X
19	plastic	1	500 ml	unpreserv		MBA (Surfactants)	X

Signature Tom Shook Date 6-29-08

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: M-126

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 6.29.08 Time: Start 1232 am/pm Finish _____ am/pm
Project No: 04020-023-4312
Site Location: Henderson, NV
Weather Conds: SUNNY + HOT Collector(s): CHRIS DRABANDT + SARA

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length ~~43.5~~ 43.18' c. Length of Water Column 7.0' (a-b) Casing Diameter: 2 in

b. Water Table Depth ~~35.5~~ 36.18' d. Calculated System Volume (see back) 4.3L Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make _____ Model _____ Serial Number _____

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1242	1	28.66	6.5	111.3	0.52	-44	330	200	36.12	AMBER
1247	2	28.7	6.5	111.3	0.40	-43	78	200	36.18	CLEAR
1252	3	28.7	6.5	110.7	0.32	-42	51	200	36.17	CLEAR
1257	4	28.58	6.49	111.0	0.26	-42	33	200	36.18	CLEAR
1302	5	28.66	6.49	111.2	0.24	-41	20	200	36.15	CLEAR
1307	6	28.57	6.49	111.0	0.23	-41	14	200	36.16	CLEAR
1312	7	28.55	6.49	110.8	0.20	-41	12	200	36.16	CLEAR

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

Has required turbidity been reached ☐ ☐ ☐
Have parameters stabilized ☐ ☐ ☐
If no or N/A - Explain below.

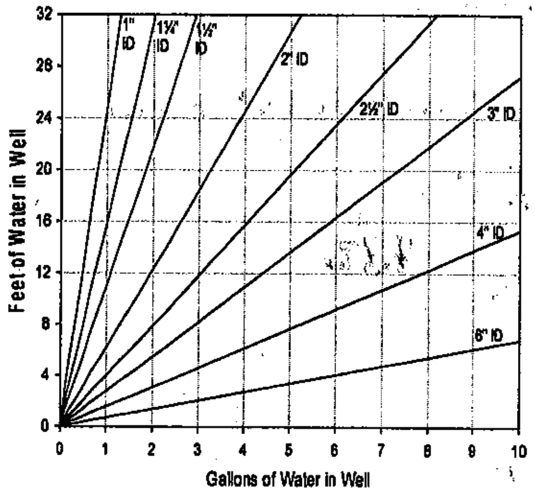
_____

3. SAMPLE COLLECTION: Method: _____

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
12	amber glass	2	1 L	unpreserv	~~PCBs~~	NA
13	plastic	2	1 L	HNO3	Ra-226/228	X
14	plastic	2	1 L	HNO3	Isotopic U/Th	X
15	amber glass	2	1 L	unpreserv	~~Formaldehyde~~	NA
16	plastic	1	250 ml	unpreserv	Perchlorate	X
17	amber glass	1	250 ml	EDA	Chlorate	X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1317	8	2834	6.49	110.3	0.20	-212	10	200	36.16	CLEAR

ENSR | AECOM

Well ID: M-84

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 6/29/08 Time: Start 1130 (am/pm)
Project No: 04020-023-4312 Finish _____ am/pm
Site Location: Henderson, NV
Weather Conds: _____ Collector(s): SARA WANG / CELSO R. A.

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 38.71 c. Length of Water Column 15.98 (a-b) Casing Diameter: 2 in

b. Water Table Depth 22.73 d. Calculated System Volume (see back) _____ Casing Material: (PVC) / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1150										
~~1115~~		25.5	7.6	1.8	0.83	166	7.38	250		
1155		24.6	7.5	1.7	0.35	144	2.94	250		
1200		24.8	7.5	1.7	0.33	126	2.96	250		
~~1205~~		24.9	7.5	1.7	0.38	115	2.49	250		
1210		24.8	7.5	1.7	0.36	112	2.37	250		

d. Acceptance criteria pass/fail (Yes) No N/A (continued on back)

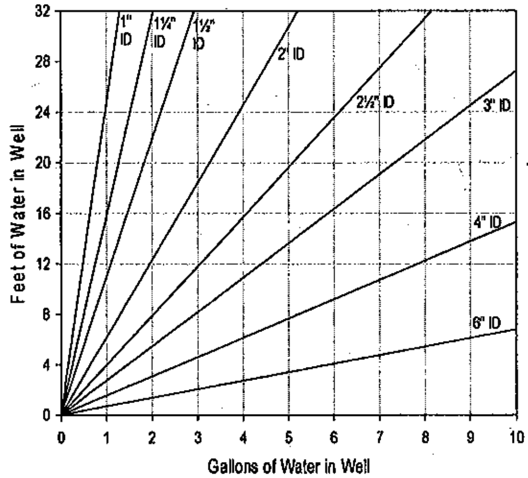
Has required turbidity been reached ☒ ☐ ☐
Have parameters stabilized ☒ ☐ ☐
If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: _____

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
12	amber glass	2	1 L	unpreserv	~~PCBs~~	N/A
13	plastic	2	1 L	HNO3	Ra-226/228	X
14	plastic	2	1 L	HNO3	Isotopic U/Th	X
15	amber glass	2	1 L	unpreserv	~~Formaldehyde~~	N/A
16	plastic	1	250 ml	unpreserv	Perchlorate	X
17	amber glass	1	250 ml	EDA	Chlorate	X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

MP-14A

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC
Project No: 04020-023-4312
Site Location: Henderson, NV
Weather Conds: HOT / SUNNY

Date: 6/30/08
Time: Start 9:50 am/pm
Finish 10 30 am/pm
Collector(s): SARA WANG

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 42.5 c. Length of Water Column 9.15 (a-b) Casing Diameter: 2 in

b. Water Table Depth 33.35 d. Calculated System Volume (see back) _____ Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% or < 10 NTUs

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
950	.5	30.63	7.59	28.27	5.48	-34	255	200	33.35	DARK CLEAR
955	1.5	28.90	7.54	27.60	4.56	-49	71	200	33.35	CLEAR
1000	2.5	28.48	7.53	27.60	4.56	-49	57	200	33.35	CLEAR
1005	3.5	28.20	7.53	27.39	4.45	-51	42	200	33.35	CLEAR
1010	4.5	27.85	7.53	27.14	4.33	-52	52	200	33.35	CLEAR
1015	5.5	27.77	7.53	27.09	4.33	-50	40	200	33.35	CLEAR
1020	6.5	27.58	7.53	26.94	4.28	-50	29	200	33.35	CLEAR

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

Has required turbidity been reached ☐ ☐ ☐
Have parameters stabilized ☐ ☐ ☐
If no or N/A - Explain below.

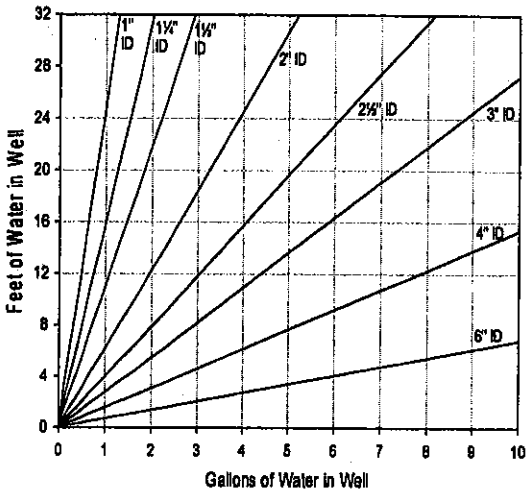
_____

3. SAMPLE COLLECTION: Method: _____

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X X
2	amber glass	2	1 L	unpreserv	SVOCs	X X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X X
4	amber glass	2	1 L	unpreserv	Pesticides	X X
5	plastic	1	1 L	HNO3	Metals	X X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X X
8	plastic	1	250 ml	NaOH	Tot CN	X X
9	plastic	1	1 L	unpreserv	TSS	X X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X X
11	plastic	1	120 ml	unpreserv	pH	X X
12	amber glass	2	1 L	unpreserv	~~PCBs~~	N/A X
13	plastic	2	1 L	HNO3	Ra-226/228	X X
14	plastic	2	1 L	HNO3	Isotopic U/Th	X X
15	amber glass	2	1 L	unpreserv	~~Formaldehyde~~	N/A
16	plastic	1	250 ml	unpreserv	Perchlorate	X X
17	amber glass	1	250 ml	EDA	Chlorate	X X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X X

Signature _____ Date 6/30/08

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1025	7.5	27.46	7.54	26.90	4.30	-50	27	200	33.35	CLEAR
1030	8.5	27.46	7.54	26.90	4.30	-50	20	200	33.35	CLEAR
1035	9.5	27.54	7.53	26.92	4.32	-50	19	200	33.35	CLEAR

ENSR | AECOM

Well ID: MW-55

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 7/1/08 Time: Start 0700 (am/pm)
Project No: 04020-023-4312 Finish 744 (am/pm)
Site Location: Henderson, NV
Weather Conds: SUNNY, HOT Collector(s): SARA WANG

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 46.35 c. Length of Water Column _____ (a-b) Casing Diameter: _____ in

b. Water Table Depth 29.6 d. Calculated System Volume (see back) _____ Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
7:23	1.5	29.56	7.31	0.2013	7.58	222	3	200	29.35	CLEAR-GREENISH
7:28	2.5	27.44	7.19	11.59	1.78	212	1	200	29.35	CLEAR-GREENish
7:33	3.5	27.37	7.17	11.57	1.85	205	1	200	29.35	CLEAR-GREENish
7:38	4.5	27.40	7.17	11.57	1.87	203	1	200	29.35	CLEAR-GREENish
7:43	5.5	27.59	7.16	11.59	1.85	199	1			

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

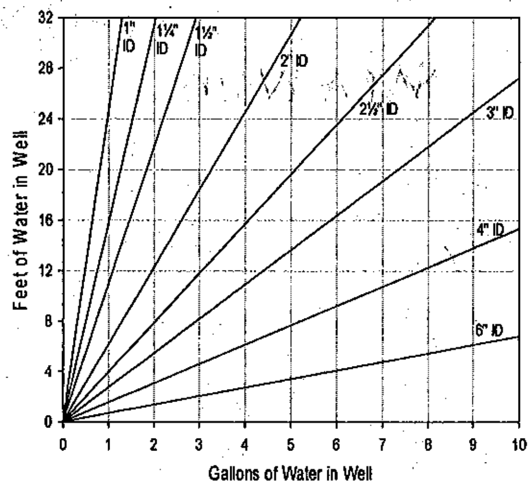
Has required turbidity been reached ☐ ☐ ☐
Have parameters stabilized ☐ ☐ ☐
If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: _____

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X X
2	amber glass	2	1 L	unpreserv	SVOCs	X X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X X
4	amber glass	2	1 L	unpreserv	Pesticides	X X
5	plastic	1	1 L	HNO3	Metals	X X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr FILTER	X X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X X
8	plastic	1	250 ml	NaOH	Tot CN	X X
9	plastic	1	1 L	unpreserv	TSS	X X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X X
11	plastic	1	120 ml	unpreserv	pH	X X
12	amber glass	2	1 L	unpreserv	PCBs	N/A
13	plastic	2	1 L	HNO3	Ra-226/228	X X
14	plastic	2	1 L	HNO3	Isotopic U/Th	X X
15	amber glass	2	1 L	unpreserv	~~Formaldehyde~~	N/A
16	plastic	1	250 ml	unpreserv	Perchlorate	X X
17	amber glass	1	250 ml	EDA	Chlorate	X X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X X

Signature _____ Date 07/01/08

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: M-78 CRK

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 7-1-08 Time: Start 7:30 am/pm
Project No: 04020-023-4312 Finish _____ am/pm
Site Location: Henderson, NV
Weather Conds: Hot Collector(s): Tom Shook

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 45.37 c. Length of Water Column _____ (a-b) Casing Diameter: 4 In

b. Water Table Depth 32.87 d. Calculated System Volume (see back) _____ Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
8:10		30.08	6.82	13.42	1.82	155	7.60	200	32.80	light green
8:15		30.06	6.80	13.50	1.17	167	6.67	200	32.80	light green
8:20		30.01	6.78	13.47	0.85	175	4.58	200	32.80	light green
8:25		29.96	6.78	13.45	0.66	181	4.72	200	32.80	light green
8:30		29.83	6.77	13.48	0.54	186	4.35	200	32.80	light green

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

Has required turbidity been reached ☒ ☐ ☐
Have parameters stabilized ☐ ☐ ☐
If no or N/A - Explain below.

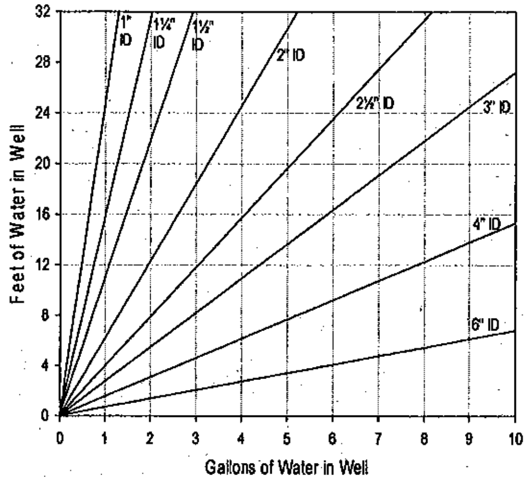
3. SAMPLE COLLECTION: Method: _____

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.
1	VOA vial	3	40 ml	HCL	VOCs
2	amber glass	2	1 L	unpreserv	SVOCs
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3
4	amber glass	2	1 L	unpreserv	Pesticides
5	plastic	1	1 L	HNO3	Metals
6	plastic	1	250 ml	buffer + NaOH	Hex Cr
7	plastic	1	250 ml	H2SO4	NH3, TPO4
8	plastic	1	250 ml	NaOH	Tot CN
9	plastic	1	1 L	unpreserv	TSS
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon
11	plastic	1	120 ml	unpreserv	pH
12	amber glass	2	1 L	unpreserv	PCBs
13	plastic	2	1 L	HNO3	Ra-226/228
14	plastic	2	1 L	HNO3	Isotopic U/Th
15	amber glass	2	1 L	unpreserv	Formaldehyde
16	plastic	1	250 ml	unpreserv	Perchlorate
17	amber glass	1	250 ml	EDA	Chlorate
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)

N/A
N/A

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 7-2-08 Time: Start 6:30 am/pm
Project No: 04020-023-4312 Finish 7:45 am/pm
Site Location: Henderson, NV
Weather Conds: Hot Collector(s): TS SW

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 41.27 c. Length of Water Column _____ (a-b) Casing Diameter: 2 in

b. Water Table Depth 33.00 d. Calculated System Volume (see back) _____ Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ±0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
7:10		27.94	7.03	17.87	7.82	170	58.0	200	33.10	green
7:15		27.57	7.05	17.71	1.45	169	58.6	200	33.10	green
7:20		27.26	7.05	17.63	0.99	175	45.0	200	33.12	green
7:25		27.04	7.04	17.56	0.83	180	35.4	200	33.12	green
7:30		26.99	7.04	17.53	0.72	186	24.6	200	33.12	green
7:35		26.82	7.04	17.51	0.64	190	15.2	200	33.12	green
7:40		26.85	7.04	17.48	0.60	194	13.6	200	33.12	green

d. Acceptance criteria pass/fail Yes No N/A

(continued on back)

Has required turbidity been reached ☐ ☐ ☐
Have parameters stabilized ☐ ☐ ☐
If no or N/A - Explain below.

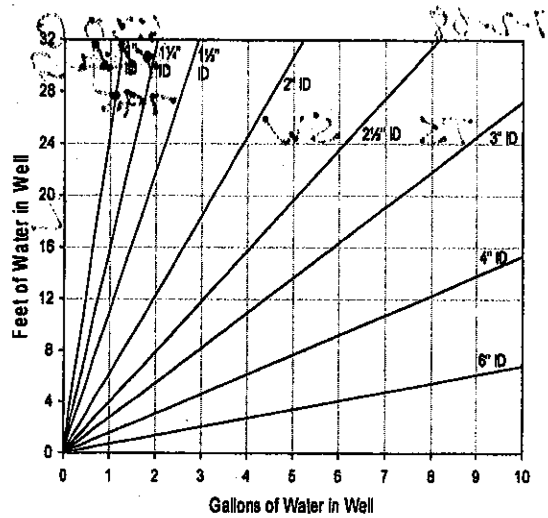
_____

3. SAMPLE COLLECTION: Method: _____

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
12	amber glass	2	1 L	unpreserv	PCBs	N/A
13	plastic	2	1 L	HNO3	Ra-226/228	X
14	plastic	2	1 L	HNO3	Isotopic U/Th	X
15	amber glass	2	1 L	unpreserv	Formaldehyde	N/A
16	plastic	1	250 ml	unpreserv	Perchlorate	X
17	amber glass	1	250 ml	EDA	Chlorate	X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature _____ Date 07/02/08

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
7:45		26.78	7.04	17.50	0.58	198	9.64	200	33.12	Green

ENSR | AECOM

Well ID: TR-2

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC
Project No: 04020-023-4312
Site Location: Henderson, NV
Weather Conds: HOT

Date: 7/8/08
Time: Start 1200 am/pm
Finish _____ am/pm
Collector(s): GALEN COOTER / DEVON MOLITOR

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 27.96 2008 c. Length of Water Column 7. (a-b)

b. Water Table Depth 27.96 d. Calculated System Volume (see back) 7.

Casing Diameter: 4 in

Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make LAMOTTE Model 2020E Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1230	0	29.88	7.44	1.121	2.46	141	0.65	200	0	NONE
1235	1	27.42	7.96	1.017	3.17	129	0.12	200	0	NONE
1240	2	26.64	8.03	0.9979	3.70	126	0.05	200	0	NONE

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

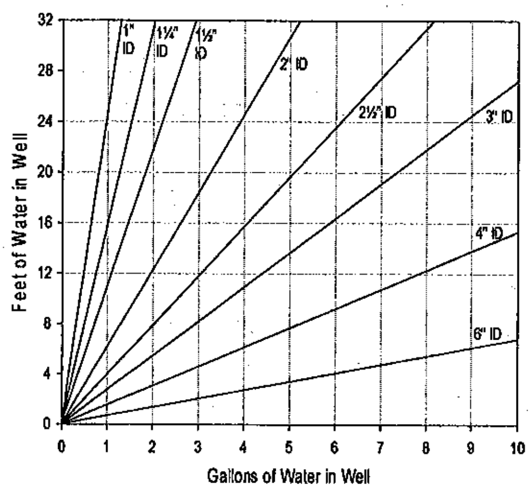
(continued on back)

3. SAMPLE COLLECTION: Method: Low Flow / Dedicated Pump

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
12	amber glass	2	1 L	unpreserv	PCBs	—
13	plastic	2	1 L	HNO3	Ra-226/228	X
14	plastic	2	1 L	HNO3	Isotopic U/Th	X
15	amber glass	2	1 L	unpreserv	Formaldehyde	—
16	plastic	1	250 ml	unpreserv	Perchlorate	X
17	amber glass	1	250 ml	EDA	Chlorate	X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature _____ Date 7/8/08

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: MW-3913

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 7/8/08 Time: Start 0800 am/pm
Project No: 04020-023-4312 Finish _____ am/pm
Site Location: Henderson, NV
Weather Conds: HOT Collector(s): GAVEN COOTER / DEVON MOLITOR

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 42.47 c. Length of Water Column 10.22 (a-b) Casing Diameter: 2 in

b. Water Table Depth 32.25 d. Calculated System Volume (see back) 1.67 Casing Material: (PVC) Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make LAMOTTE Model 2020E Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0840	0	26.41	7.08	8.634	1.12	115	9.40	200	0	NONE
0845	1	26.32	7.07	8.668	0.99	113	6.45	200	0	NONE
0850	2	26.09	7.07	8.660	0.96	113	4.81	200	0	NONE

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

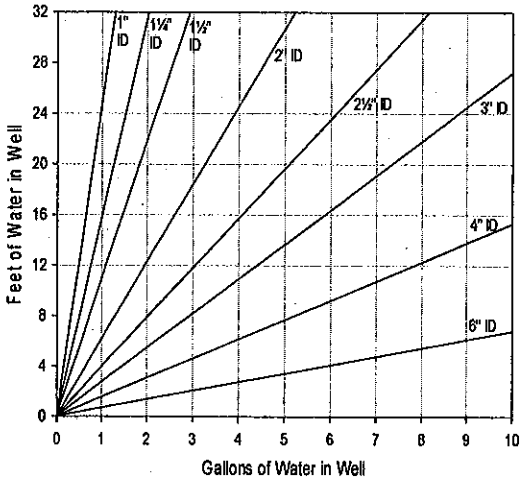
Has required turbidity been reached ☒ ☐ ☐
Have parameters stabilized ☒ ☐ ☐
If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: LOW FLOW SAMPLING

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
12	amber glass	2	1 L	unpreserv	PCBs	—
13	plastic	2	1 L	HNO3	Ra-226/228	X
14	plastic	2	1 L	HNO3	Isotopic U/Th	X
15	amber glass	2	1 L	unpreserv	Formaldehyde	—
16	plastic	1	250 ml	unpreserv	Perchlorate	X
17	amber glass	1	250 ml	EDA	Chlorate	X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature _____ Date 7/8/08

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: IB-B

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 7/8/08 Time: Start 1120 am/pm
Project No: 04020-023-4312 Finish _____ am/pm
Site Location: Henderson, NV
Weather Conds: SUNNY, HOT Collector(s): SARAH WANG, CELSO ALVIZURI

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length N/A c. Length of Water Column N/A (a-b) Casing Diameter: N/A in

b. Water Table Depth N/A d. Calculated System Volume (see back) _____ Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10% **Turbidity** ±10% **or** < 10 NTUs
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

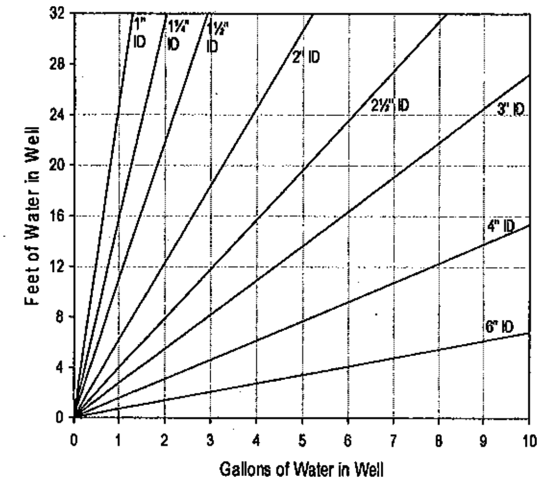
Has required turbidity been reached ☐ ☐ ☒
Have parameters stabilized ☐ ☐ ☒
If no or N/A - Explain below.
WELL HAS DEDICATED PUMP, SAMPLES TAKEN DIRECTLY FROM TAP.

3. SAMPLE COLLECTION: Method: _____

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
~~12~~	~~amber glass~~	~~2~~	~~1 L~~	~~unpreserv~~	~~PCBs~~	
13	plastic	2	1 L	HNO3	Ra-226/228	X
14	plastic	2	1 L	HNO3	Isotopic U/Th	X
~~15~~	~~amber glass~~	~~2~~	~~1 L~~	~~unpreserv~~	~~Formaldehyde~~	
16	plastic	1	250 ml	unpreserv	Perchlorate	X
17	amber glass	1	250 ml	EDA	Chlorate	X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: M-69

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 7/8/08 Time: Start 0645 (am/pm) Finish _____ am/pm
Project No: 04020-023-4312
Site Location: Henderson, NV
Weather Conds: HOT, SUNNY Collector(s): SARAH WANG, CELSO ALVIRAR

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 41.35 c. Length of Water Column _____ (a-b) Casing Diameter: 2 in

b. Water Table Depth 29.95 d. Calculated System Volume (see back) _____ Casing Material: (PVC) / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0750		27.68	7.36	6.15	2.06	192	9.91	200		CLEAR
0755		27.73	7.36	6.01	2.07	164	8.83	200		CLEAR
0800		27.64	7.37	5.98	2.23	142	9.52	200		CLEAR
0805		27.59	7.38	6.01	2.27	127	8.05	200		CLEAR
0810		27.66	7.38	6.03	2.31	117	6.52	200		CLEAR
0815		27.70	7.39	6.05	2.37	114	5.33	200		CLEAR

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

Has required turbidity been reached ☒ ☐ ☐
Have parameters stabilized ☒ ☐ ☐
If no or N/A - Explain below.

_____

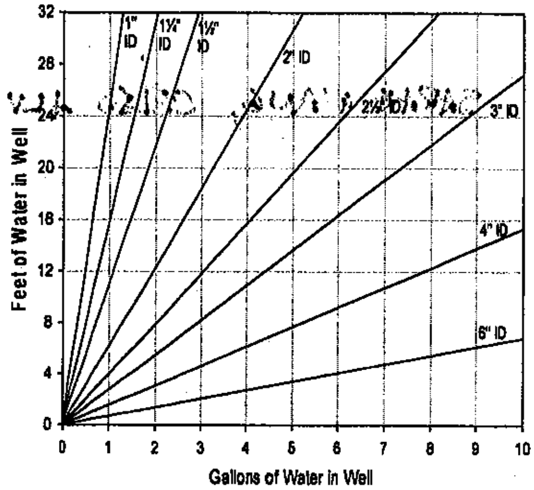
3. SAMPLE COLLECTION: Method: _____

0825

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.		
1	VOA vial	3	40 ml	HCL	VOCs	X	Rock
2	amber glass	2	1 L	unpreserv	SVOCs	XX	WC
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X	
4	amber glass	2	1 L	unpreserv	Pesticides	XX	WC
5	plastic	1	1 L	HNO3	Metals	X	
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X	
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X	WC
8	plastic	1	250 ml	NaOH	Tot CN	X	
9	plastic	1	1 L	unpreserv	TSS	X	WC
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X	
11	plastic	1	120 ml	unpreserv	pH	X	WC
~~12~~	~~amber glass~~	~~2~~	~~1 L~~	~~unpreserv~~	~~PCBs~~	N/A	
13	plastic	2	1 L	HNO3	Ra-226/228	XX	
14	plastic	2	1 L	HNO3	Isotopic U/Th	XX	
~~15~~	~~amber glass~~	~~2~~	~~1 L~~	~~unpreserv~~	~~Formaldehyde~~	N/A	
16	plastic	1	250 ml	unpreserv	Perchlorate	X	KELSO
17	amber glass	1	250 ml	EDA	Chlorate	X	KELSO
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X	WC
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X	WC

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: ~~MW-09~~ P-16D

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 7/9/08 Time: Start 0620 (am/pm)
Project No: 04020-023-4312 Finish _____ am/pm
Site Location: Henderson, NV
Weather Conds: _____ Collector(s): SARA WANG / CELSO R. A.

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 16.2' c. Length of Water Column _____ (a-b) Casing Diameter: _____ in

b. Water Table Depth 12.00' d. Calculated System Volume (see back) _____ Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0658	1	27.55	7.52	7.684	1.11	164	802	200	9.00	CLOUDY
0703		27.51	7.51	7.677	0.67	155	572	200		CLOUDY
0716		27.27	7.52	7.633	0.32	141	185	200		CLOUDY
0722		27.14	7.53	7.604	0.24	135	138	200		CLOUDY
0726		27.05	7.53	7.591	0.18	129	124.5	200		LT. CLOUDY
0731		26.98	7.53	7.578	0.17	127	87.3	200		LT. CLOUDY
0737		27.02	7.53	7.577	0.14	120	66.0	200		

d. Acceptance criteria pass/fail Yes No N/A

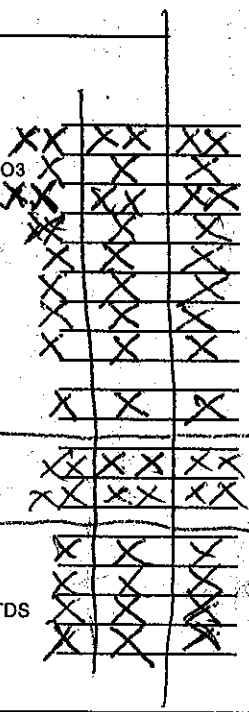
(continued on back)

Has required turbidity been reached ☒ ☐ ☐
Have parameters stabilized ☒ ☐ ☐
If no or N/A - Explain below.

_____

3. SAMPLE COLLECTION: Method: _____

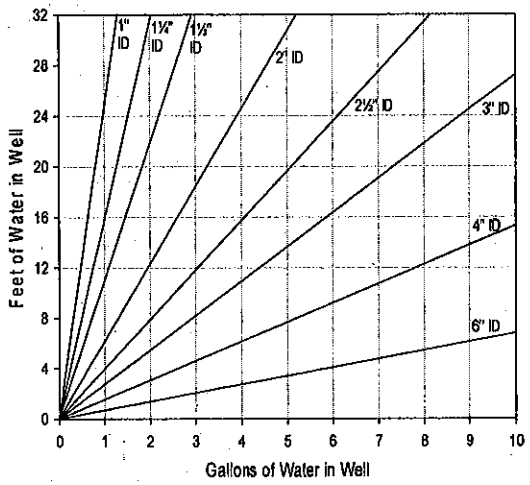
Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.
1	VOA vial	3	40 ml	HCL	VOCs
2	amber glass	2	1 L	unpreserv	SVOCs
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3
4	amber glass	2	1 L	unpreserv	Pesticides
5	plastic	1	1 L	HNO3	Metals
6	plastic	1	250 ml	buffer + NaOH	Hex Cr
7	plastic	1	250 ml	H2SO4	NH3, TPO4
8	plastic	1	250 ml	NaOH	Tot CN
9	plastic	1	1 L	unpreserv	TSS
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon
11	plastic	1	120 ml	unpreserv	pH
~~12~~	~~amber glass~~	~~2~~	~~1 L~~	~~unpreserv~~	~~PCBs~~
13	plastic	2	1 L	HNO3	Ra-226/228
14	plastic	2	1 L	HNO3	Isotopic U/Th
~~15~~	~~amber glass~~	~~2~~	~~1 L~~	~~unpreserv~~	~~Formaldehyde~~
16	plastic	1	250 ml	unpreserv	Perchlorate
17	amber glass	1	250 ml	EDA	Chlorate
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)



Signature _____ Date _____

0750

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
0742		27.05	7.53	7.581	0.13	117	55.3	200		CLEAR
0747		27.08	7.53	7.580	0.12	113	54.4	200		CLEAR

ENSR | AECOM

Well ID: TR-4

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 7/9/08 Time: Start 0830 am/pm
Project No: 04020-023-4312 Finish _____ am/pm
Site Location: Henderson, NV
Weather Conds: _____ Collector(s): GC / DM

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length Deep c. Length of Water Column _____ (a-b) Casing Diameter: 4 in

b. Water Table Depth 37.48 d. Calculated System Volume (see back) _____ Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make LAMOTTE Model 2020e Serial Number _____

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0835	0	26.66	7.66	1.522	1.94	78	1.25	200	0	NONE
0840	1	26.81	8.00	1.514	2.23	63	0.74	200	0	NONE
0845	2	26.75	8.04	1.513	~~1.98~~ 2.32	58	1.10	200	0	NONE

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

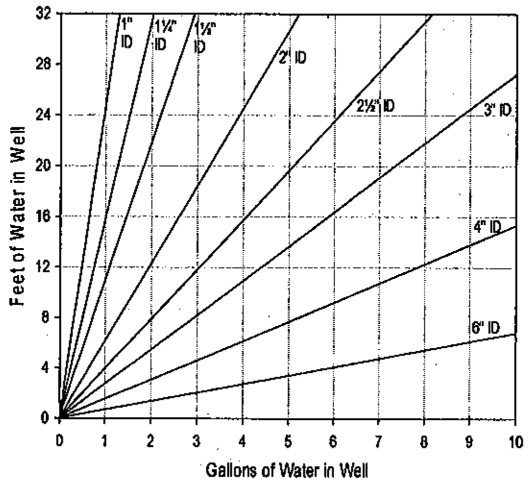
Has required turbidity been reached ☒ ☐ ☐
Have parameters stabilized ☒ ☐ ☐
If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low Flow / Dedicated pump

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
12	amber glass	2	1 L	unpreserv	PCBs	—
13	plastic	2	1 L	HNO3	Ra-226/228	X
14	plastic	2	1 L	HNO3	Isotopic U/Th	X
15	amber glass	2	1 L	unpreserv	Formaldehyde	—
16	plastic	1	250 ml	unpreserv	Perchlorate	X
17	amber glass	1	250 ml	EDA	Chlorate	X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature _____ Date 7/9/08

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: M-48

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 7/9/08 Time: Start 1200 am/pm
Project No: 04020-023-4312 Finish _____ am/pm
Site Location: Henderson, NV
Weather Conds: HOT Collector(s): GC / DM

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 36.0 c. Length of Water Column 8.0 (a-b) Casing Diameter: 2 in

b. Water Table Depth 28.0 d. Calculated System Volume (see back) _____ Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make LAMOTTE Model 2020E Serial Number _____

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1200	0	28.46	7.47	4.245	0.09	118	1.01	200	NONE	NONE
1205	1	27.54	7.49	4.173	0.11	103	0.27	200	0	NONE
1210	2	27.48	7.49	4.071	0.10	99	0.41	200	0	NONE

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

Has required turbidity been reached ☒ ☐ ☐
Have parameters stabilized ☒ ☐ ☐
If no or N/A - Explain below.

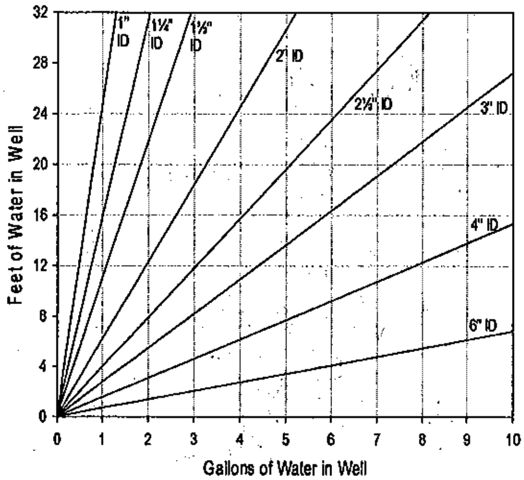
_____

3. SAMPLE COLLECTION: Method: LOW FLOW

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
12	amber glass	2	1 L	unpreserv	PCBs	—
13	plastic	2	1 L	HNO3	Ra-226/228	X
14	plastic	2	1 L	HNO3	Isotopic U/Th	X
15	amber glass	2	1 L	unpreserv	Formaldehyde	—
16	plastic	1	250 ml	unpreserv	Perchlorate	X
17	amber glass	1	250 ml	EDA	Chlorate	X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature _____ Date 7/9/08

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: CLD 1R

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC
Project No: 04020-023-4312
Site Location: Henderson, NV
Weather Conds: WINDY, SUNNY

Date: 7/10/08
Time: Start 0854 am/pm
Finish _____ am/pm
Collector(s): SAFA W., CELSO

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 33.52 c. Length of Water Column _____ (a-b)

b. Water Table Depth 30.62 d. Calculated System Volume (see back) _____

Casing Diameter: 4 in

Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% or < 10 NTUs

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0855		31.16	7.31	8.936	2.54	201	8.49	200		CLEAR
0900		30.65	7.30	8.843	1.20	183	5.15	200		CLEAR
0905		30.52	7.30	8.818	1.04	175	3.79	200		CLEAR
0910		30.47	7.32	~~8.875~~ CAL 8.758	0.83	167	2.95	200		CLEAR
0915		29.90	7.34	8.759	0.73	153	2.38	200		CLEAR

d. Acceptance criteria pass/fail Yes No N/A

(continued on back)

Has required turbidity been reached ☐ ☐ ☐
Have parameters stabilized ☐ ☐ ☐
If no or N/A - Explain below.

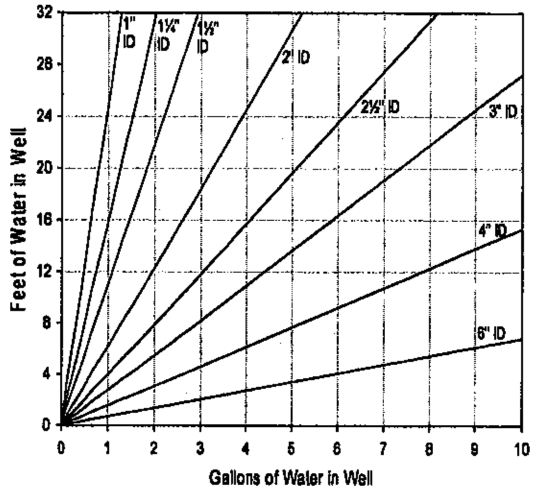
_____

3. SAMPLE COLLECTION: Method: _____

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	XX
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	XX
5	plastic	1	1 L	HNO3	Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
~~12~~	~~amber glass~~	~~2~~	~~1 L~~	~~unpreserv~~	~~PCBs~~	
13	plastic	2	1 L	HNO3	Ra-226/228	XX
14	plastic	2	1 L	HNO3	Isotopic U/Th	XX
~~15~~	~~amber glass~~	~~2~~	~~1 L~~	~~unpreserv~~	~~Formaldehyde~~	
16	plastic	1	250 ml	unpreserv	Perchlorate	X
17	amber glass	1	250 ml	EDA	Chlorate	X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

NOTES: 0946 - WATER LEVEL @ 30.68 (W/PUMP SUBMERGED FULLY)

ENSR | AECOM

Well ID: CDD 2-R

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 7/10/08 Time: Start 7:39 am/pm
Project No: 04020-023-4312 Finish _____ am/pm
Site Location: Henderson, NV
Weather Conds: WINDY, SUNNY Collector(s): SAPA, CELSO

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length ~~35.54~~ 35.54 c. Length of Water Column _____ (a-b) Casing Diameter: _____ in

b. Water Table Depth 35.3 d. Calculated System Volume (see back) _____ Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make Model Serial Number

_____
_____

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

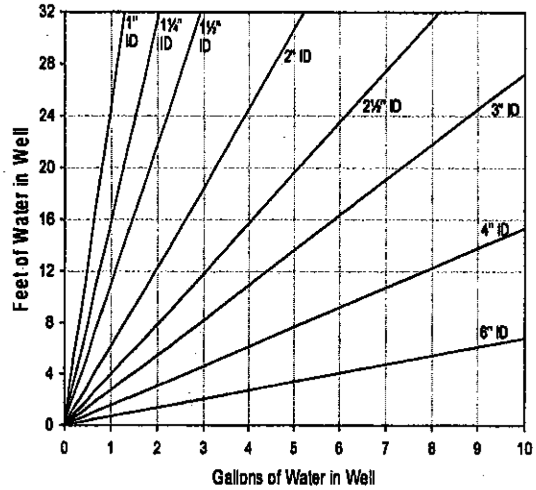
Has required turbidity been reached ☐ ☐ ☒
Have parameters stabilized ☐ ☐ ☒
If no or N/A - Explain below.
UNABLE TO SAMPLE - WELL DRY

3. SAMPLE COLLECTION: Method: _____

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	
2	amber glass	2	1 L	unpreserv	SVOCs	
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	
4	amber glass	2	1 L	unpreserv	Pesticides	
5	plastic	1	1 L	HNO3	Metals	
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	
7	plastic	1	250 ml	H2SO4	NH3, TPO4	
8	plastic	1	250 ml	NaOH	Tot CN	
9	plastic	1	1 L	unpreserv	TSS	
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	
11	plastic	1	120 ml	unpreserv	pH	
12	amber glass	2	1 L	unpreserv	PCBs	
13	plastic	2	1 L	HNO3	Ra-226/228	
14	plastic	2	1 L	HNO3	Isotopic U/Th	
15	amber glass	2	1 L	unpreserv	Formaldehyde	
16	plastic	1	250 ml	unpreserv	Perchlorate	
17	amber glass	1	250 ml	EDA	Chlorate	
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

ENSR | AECOM

Well ID: CLD-3

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: 7/10/08 Time: Start 800 am/pm
Project No: 04020-023-4312 Finish _____ am/pm
Site Location: Henderson, NV
Weather Conds: HOT / WINDY Collector(s): GC / DM

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 43.74 c. Length of Water Column 7.99 (a-b) Casing Diameter: 4 in

b. Water Table Depth 35.75 d. Calculated System Volume (see back) _____ Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make LAMOTTE Model 2020E Serial Number _____

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0945	0	26.15	7.32	18.19	2.13	187	0.37	200	0	NONE
0950	1	26.11	7.31	17.91	0.66	183	0.03	200	0	NONE
0955	2	26.07	7.30	17.90	0.45	180	0.42	200	0	NONE

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

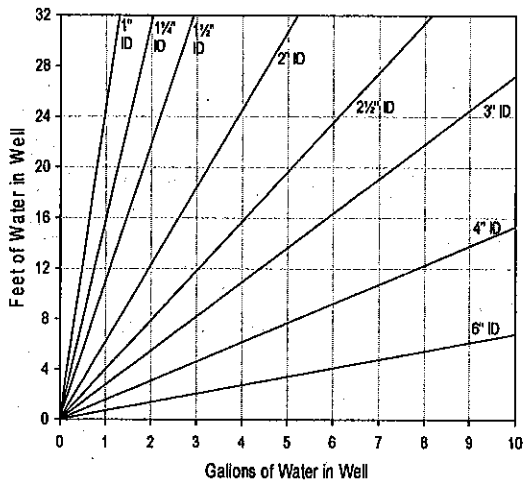
Has required turbidity been reached ☒ ☐ ☐
Have parameters stabilized ☒ ☐ ☐
If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: LOW FLOW / Dedicated Pump

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
12	amber glass	2	1 L	unpreserv	PCBs	C
13	plastic	2	1 L	HNO3	Ra-226/228	X
14	plastic	2	1 L	HNO3	Isotopic U/Th	X
15	amber glass	2	1 L	unpreserv	Formaldehyde	—
16	plastic	1	250 ml	unpreserv	Perchlorate	X
17	amber glass	1	250 ml	EDA	Chlorate	X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

M-123

Client: Tronox LLC | Date: 7/11/08 | Time: Start 0800 am/pm | Finish ____ am/pm
Project No: 04020-023-4312
Site Location: Henderson, NV
Weather Conds: WINDY | Collector(s): GALEN COOPER / DEVON MOLITOR

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 54.40 c. Length of Water Column 12.22 (a-b) — Casing Diameter: 2 in

b. Water Table Depth 42.18 d. Calculated System Volume (see back) ____ — Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% | **D.O.** ±10% | **pH** ±0.1 unit | **ORP** ±10 mV | **Conductivity** ±3% | **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make LAMOTTE | Model 2020E | Serial Number ____

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0845	0	27.24	7.37	18.45	4.35	165	126	200	0	DIRTY / BROWN
0850	1	27.62	7.36	18.62	1.37	142	162	200	0	DIRTY
0855	2	29.15	7.36	19.23	7.23	NR	99.1	200	0	DIRTY
0900	3	29.51	7.37	19.38	4.08	126	15.1	200	0	CLEAR
0905	4	29.27	7.38	19.46	0.93	95	3.29	200	0	CLEAR
0910	5	27.01	7.35	14.39	0.33	52	4.25	200	0	CLEAR
0915	6	26.92	7.35	18.42	0.15	24	2.86	200	0	CLEAR

d. Acceptance criteria pass/fail — Yes / No / N/A (continued on back)

	Yes	No	N/A
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below. ____

3. SAMPLE COLLECTION: Method: LOW FLOW

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
12	amber glass	2	1 L	unpreserv	PCBs	X
13	plastic	2	1 L	HNO3	Ra-226/228	—
14	plastic	2	1 L	HNO3	Isotopic U/Th	X
15	amber glass	2	1 L	unpreserv	Formaldehyde	X
16	plastic	1	250 ml	unpreserv	Perchlorate	—
17	amber glass	1	250 ml	EDA	Chlorate	X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature ____ Date 7/11/08

M-124

Client: Tronox LLC | Date: | Time: Start 1100 am/pm
Project No: 04020-023-4312 | Finish ____ am/pm
Site Location: Henderson, NV
Weather Conds: | Collector(s): GC / DM

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 53.19 c. Length of Water Column 15.89 (a-b) Casing Diameter: 2 In

b. Water Table Depth 37.30 d. Calculated System Volume (see back) Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make LAMOTTE Model 2020E Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1105	0	38.5	7.67	3.0035	7.39	128	126	200	0	~~CLEAR~~ DIRTY
1110	1	27.20	8.03	3.345	5.91	92	91	200	0	DIRTY
1115	2	26.99	8.07	1.114	7.48	95	22.95	200	0	CLOUDY
1120	3	26.97	7.94	3.324	6.23	89	21.6	200	0	CLOUDY
1125	4	26.97	7.92	3.326	6.57	83	17.6	200	0	CLEAR
1130	5	26.95	7.91	3.312	6.18	76	13.9	200	0	CLEAR
1135	6	27.01	7.90	3.317	6.26	72	9.2	200	0	CLEAR

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

1140 8.49 200 0 CLEAR
1145 6.84 200 0 CLEAR

Has required turbidity been reached ☒ ☐ ☐
Have parameters stabilized ☒ ☐ ☐
If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: LOW FLOW

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	X
2	amber glass	2	1 L	unpreserv	SVOCs	X
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	X
4	amber glass	2	1 L	unpreserv	Pesticides	X
5	plastic	1	1 L	HNO3	Metals	X
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	X
7	plastic	1	250 ml	H2SO4	NH3, TPO4	X
8	plastic	1	250 ml	NaOH	Tot CN	X
9	plastic	1	1 L	unpreserv	TSS	X
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	X
11	plastic	1	120 ml	unpreserv	pH	X
12	amber glass	2	1 L	unpreserv	PCBs	~
13	plastic	2	1 L	HNO3	Ra-226/228	X
14	plastic	2	1 L	HNO3	Isotopic U/Th	X
15	amber glass	2	1 L	unpreserv	Formaldehyde	~
16	plastic	1	250 ml	unpreserv	Perchlorate	X
17	amber glass	1	250 ml	EDA	Chlorate	X
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	X
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	X

Signature _____ Date 7/11/08

ENSR | AECOM

Well ID: MC-59

DRY

Low Flow Ground Water Sample Collection Record

Client: Tronox LLC Date: _____ Time: Start _____ am/pm
Project No: 04020-023-4312 Finish _____ am/pm
Site Location: Henderson, NV
Weather Conds: _____ Collector(s): _____

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 23.30 c. Length of Water Column _____ (a-b) Casing Diameter: _____ in

b. Water Table Depth Dry d. Calculated System Volume (see back) _____ Casing Material: PVC / Steel

2. WELL PURGE DATA

a. Purge Method: Bladder pump w/QED controller (MP-10) and QED 3020 (12-volt air compressor)

b. Acceptance Criteria defined (see workplan)

Temperature ±10% **D.O.** ±10%
pH ± 0.1 unit **ORP** ±10 mV
Conductivity ±3% **Drawdown** < 0.3' (3.6-inches)

Turbidity ±10% **or** < 10 NTUs

c. Field Testing Equipment used: Make Model Serial Number

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor

d. Acceptance criteria pass/fail Yes No N/A (continued on back)

Has required turbidity been reached ☐ ☐ ☐
Have parameters stabilized ☐ ☐ ☐
If no or N/A - Explain below.

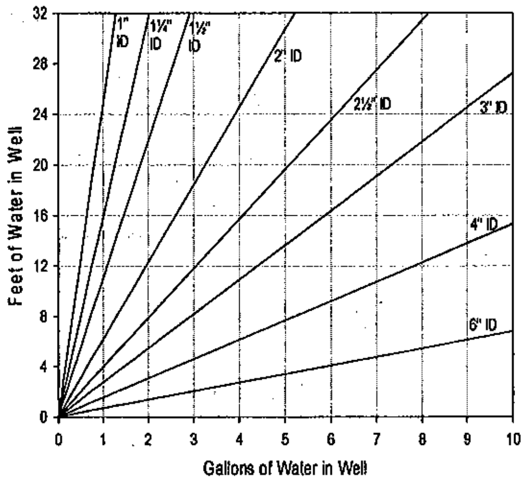
DRY

3. SAMPLE COLLECTION: Method: _____

Order	Container Type	Bottles per sample	Volume	Preservative	Analysis Req.	
1	VOA vial	3	40 ml	HCL	VOCs	
2	amber glass	2	1 L	unpreserv	SVOCs	
3	plastic	1	250 ml	unpreserv	Alkalinity (total, CO3, HCO3	
4	amber glass	2	1 L	unpreserv	Pesticides	
5	plastic	1	1 L	HNO3	Metals	
6	plastic	1	250 ml	buffer + NaOH	Hex Cr	
7	plastic	1	250 ml	H2SO4	NH3, TPO4	
8	plastic	1	250 ml	NaOH	Tot CN	
9	plastic	1	1 L	unpreserv	TSS	
10	VOA vial	3	40 ml	H2SO4	Tot organic carbon	
11	plastic	1	120 ml	unpreserv	pH	
12	amber glass	2	1 L	unpreserv	PCBs	
13	plastic	2	1 L	HNO3	Ra-226/228	
14	plastic	2	1 L	HNO3	Isotopic U/Th	
15	amber glass	2	1 L	unpreserv	Formaldehyde	
16	plastic	1	250 ml	unpreserv	Perchlorate	
17	amber glass	1	250 ml	EDA	Chlorate	
18	plastic	1	250 ml	unpreserv	Cl, NO3, NO2, SO4, Br, TDS	
19	plastic	1	500 ml	unpreserv	MBA (Surfactants)	

Signature _____ Date _____

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor

Field Activity Report

Date: November 13, 2009
Recorded By: Dana R. Brown

Project Name: Tronox Phase B Survey, Vertical Delineation Sampling **Project No.:** 2027.001
Client Name: Tronox
Weather: **Temperature:**
Site Conditions: Graded and graveled earth

NORTHGATE PERSONNEL ON-SITE

Josh W. Otis

VISITORS

Name	Company/Agency	Time Arrived	Time Left
Darren Qualls	GES	930	1000
Darren Qualls	GES	1300	1315

CONTRACTORS

Contractor: **Phone No.:**
Supervisor: **Task:**

Company	No. of Supervisors	No. of Workers	Remarks

EQUIPMENT

Keck 200' Water Level Meter
YSI Water Quality Meter
HACH Turbimeter

Location _____ Date _____

Project / Client _____

0930 Meet Darren at gate, pick up water level meter, wrench for opening wells. Check in w/ guard.

1000 - 1300 notched and marked Phase B and vertical delineation wells for surveyors. Checked locations SA30 and RSAR5. Attempted to check location RSAS3 (in Pronto Constructors corp yard) but gate locked and nobody home. Called ph. number posted and arranged for access w/ surveyors later in afternoon.

1330 checked in w/ surveyors - no problems with access to wells, expects to finish today. Follow up on survey points questioned by Dana - have shot SA127A, and RSAR5/RSAS3/SA30 shot in correct locations.

1330-1400 Lunch

1400-1530 Clean up storage Area, put away equipment, trash run.

Location Tronox - Henderson Date 11/13/09

Project / Client Friday - Pg 1/

Vertical Delineation WS & Phase B Survey

1580 - 1400 - prep equipment, bags for sampling M-155

1400 - 1430 - check calibration on meters, decon water level meter.

1430 - collect sample from M-155 + duplicate. WL = 80.99' TOC

1500 - 1515 COCs, paperwork. Depart for FedEx.

DAILY SITE SAFETY MEETING RECORD

Recorded By: Josh W Otis

Date & Time: 11/13/09 1000 **Project No.:** 2027.01

Project Name: Vertical Delineation Well Sampling **Project Location:** Tronox Site, Henderson, Nevada

Field Activities: Groundwater sampling.

Chemicals Present: Perchlorate, Hexavalent Chromium, Metals, Organic acids, Pesticides, PCB's, petroleum compounds.

SAFETY TOPICS DISCUSSED

Protective Clothing/Equipment: :Level D = Hardhat, safety glasses, steel-toed safety shoes, gloves, coveralls, escape respirator.

Hazards of Chemicals Present: Inhalation, Ingestion, Adsorption.

Physical Hazards: Heatstroke, Slips-Trips-Falls, Pinch points, jagged and sharp pointed metal debris, Traffic & trucks.

Special Hazards: Chemicals stored in process piping or tanks. Underground utilities.

Other Topics of Concern:

SITE SAFETY CHECKLIST	YES	NO
Attached Signature Page - No, see below for signatures.		X
Written Health and Safety Plan (HASP) is on-site	X	
Information in the HASP matches conditions and activities at the site	X	
Site personnel have appropriate training and certification and medical clearance	X	
Air monitoring equipment has been calibrated daily	X	
Site zones are set up and observed where appropriate	X	
Access to Work Areas is limited to authorized personnel	X	
Decontamination stations (including hand/face wash) are set up and used	X	
Personal protective equipment used matches HASP requirements	X	
Emergency and First Aid equipment is on-site as described in the HASP	X	
Drinking water is readily available	X	

Notes (All "NO" answers must be addressed and corrected immediately. Note additionally health and safety observations here):

Josh WOtis

Conducted By

Print Initials: JWO **Signature:** **Date:**

GES

EQUIPMENT CALIBRATION RECORD

Project Name:	↗ 2027.01	Date:	11/15/09
Project Number:	↳ Phase B/Vertical Delineation	Name:	Josh W Otis
Site Location:	Tronox - Henderson		

pH Meter

Serial No:	AM	Noon	PM	Exp. Date	Notes:
pH 4.00 Buffer:			4.10	2/11	
pH 7.00 Buffer:			6.97	2/11	
pH 10.00 Buffer:			10.02	3/11	
Temperature:			20.66		
Comments:					

Conductivity

Serial No:	AM	Noon	PM	Exp. Date	Notes:
Solution: L413			1.366	5/10	
Solution:					
Solution:					
Temperature:			20.33		
Comments:					

Turbidity

Serial No:	AM	Noon	PM	Exp. Date	Notes:
~~4 NTU~~ 5.81 NTU			5.74		
~~10 NTU~~ 63.6 NTU			62.1		
~~100 NTU~~ 561 NTU			555		
Temperature:					
Comments:					

ORP

Serial No:	AM	Noon	PM	Exp. Date	Notes:
Solution			220*	4/10	
Comments: * after calibration. 203.7 before.					

DECONTAMINATION RECORD

GES

Page 1 of 1

Date: 11/13/09 Time: 1600 Project No.: 2027.01
Project Name: Vertical Delineation W.S. Project Location: Tronox - Henderson
Recorded by: Josh W Otis Checked by:

Equipment	Use	Deionized Water	Detergent Water	Steam/Hot Water	Potable Water	Deionized Water	Deionized Water	Tronox DI Water		Time/Location
Keck W.L.M.	GS		1			2	3			1600, M-155

KEY: GS - groundwater sampling; SS - soil sampling; WP - well purging

COMMENTS

Geotechnical Environmental Services, Inc.
7150 Placid St.
Las Vegas, NV 89119

LOW FLOW PURGE AND SAMPLE FORM

Well ID: ~~M-156~~ M-155
Date: 11/10/09 - 11/13/09
Sample ID: ~~M-156~~ M-155
Time: 11/13/09, 1430
Analysis:
QA/QC - Dup ID: —
Rinsate ID: —
MS/MSD ID: —

Screened Interval (ft): 200 - 220'
Pump Intake Depth (ft): ~~202'~~ 212'
Ave. Flow Rate (lpm):
Purging Sampling Device: Grundfos Redi-Flo
PID Reading at TOC: —
Water Level Instrument: Keck 200'
Water Quality Meters: YSI / HACH

Well Diameter (in): 2"
Static Water Level(ft) 5.89'
Total Well Depth (ft) ~220' (WLM only 200'), 7200'
Water Column Length (ft) approx 214.11'
Minimum Purge Volume: 3 casing vols ≈ 105 gals
Well Secure - yes/no: yes
Sampler Name: Josh Wolfs

	Time	Volume Purged gals (ft)	Flow Rate lpm	Water Level (feet - TOC) ± 0.3 ft	Specific Conductance 5%	pH ± 0.1	Temp ± 1° C	DO (mg/l) ± 10%	ORP ± 10%	Turbidity 10%or<10 NT	Color %	Odor	
	1100	start pump											
11/10	1107			~100'	1.022	7.43	24.94	2.78	6.3	50.6			
↑	1112	28			1.038	7.66	24.92	0.88	1.8	15.2			
	1130+	~38		~~~200'~~ JWO 180' *									
↓	0740		73.65 → ~~94-75~~ JWO										] Total Purge = 15 gals
11/11	0809			140	1.000	7.50	24.16	3.00	-6.4				
↑													
	1425	start pump		50.42									
↓	1427		80' →		0.989	7.55	24.47	~~3.75~~	73.1	9.38	clear		
11/12	1431			~122'	0.932	7.59	24.41	1.94	75.0	10.1			
	1435	- pump off.		146'			25.17			16.8			
11/12	1445	- start bailing.											
↑	1645			>202.7'	end bailing.					very turbid	brown		] TOTAL PURGE = 35 gals
↓													
11/13	1629			80.99	1.019	8.07	22.77		86.1	14.8			
	1630												
		Final Field Parameter Measurements											

Comments: 1130 - pump speed trickling off; turn off pump to cool down. Water level ~~~200'~~ JWO 180' * let cool for final purge

* incorrect water level reading; Keck not beeping while pump running(?) but water level above intake.

MONTGOMERY WATSON LABORATORIES

CHAIN OF CUSTODY RECORD

750 Royal Oaks dr. Suite 100 Monrovia, Ca., 91016-3629
(626) 386-1100 (800) 566-5227

MWLABS USE ONLY:

LOGIN COMMENTS: _____

SAMPLES CHECKED/LOGGED IN BY: _____

SAMPLE TEMP, RECEIPT AT LAB: _____

BLUE ICE: FROZEN ___ PARTIALLY FROZEN ___ THAWED ___

TO BE COMPLETED BY SAMPLER:

COMPANY / PROJECT NAME
~~KERRMCGEE MP~~ TRONOX

PROJECT JOB # / P.O.#
Vertical Delineation Well Sampling
~~Quarterly Sampling~~

Sampler Signature:

Susan Crowley (702) 651-2234

Tronox LLC - Henderson Plant
PO Box 55
Henderson, NV 89009

REFER TO ATTACHED BOTTLE ORDER FOR ANALYSES ☐ (check for yes)

ANALYSES REQUIRED (mark an 'X' in all tests required for each sample line)

TIME	DATE	LOCATION	IDENTIFIER, STATE ID#	MATRIX *	GRAB	COMP	TOC9060	TOX	pH 9040, EC 9050	TDS	CL04	SO49056, CL9056	Phenol96	NA, CR, FE, MN (all 6010)	Cr (TaT)							SAMPLER COMMENTS
1630	11/13/09	M-155009		RGW	X					X	X				X							
1630	1	M-155009		1	X					X	X				X							

* **MATRIX TYPES:**

Reported by Volume:
CFW = Chlor(am)inated Finished Water
FW = Other Finished Water
RGW = Raw Ground Water
RSW = Raw Surface Water
CWW = Chlorinated Waste Water
WW = Other Waste Water
SW = Storm Water

Reported by Weight:
SO = Soil
SL = Sludge

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RELINQUISHED BY:		JOSH W OTIS	~~Veolia Water NA~~ for Tronox LLC - Henderson Plant	11/13/09	1730 ~~12:00 PM~~
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

C-O-C# _____